This download file will contain all of the Instructional Memorandums to Local Public Agencies (I.M.s) referenced by the Federal-aid Project Development Guide (Guide). However, some of these I.M.s are not yet complete.

If a future I.M. will be based on an existing Project Development Information Packet (Packet) document or County Engineers I.M., this download file includes a placeholder page for the future I.M. In such cases, the corresponding existing Packet or County Engineers I.M. document is included following the placeholder page.

Future I.M.s that will not be based on an existing Packet document or County Engineers I.M. do not have a placeholder page.

Please note:

1. The existing Packet documents and the County Engineers I.M.s are currently in the process of being phased-out. They are being replaced by the Federal-aid Project Development Guide and the new Instructional Memorandums to Local Public Agencies.

2. If you maintain a paper copies of the I.M.s, we recommend the following to keep them up-to-date:

   - When a new I.M. that does take the place of an existing Packet or County Engineers I.M. document is published, remove the placeholder page and the corresponding existing Packet or County Engineers I.M. documents and replace them with the new I.M.

   - When a new I.M. that does not take the place of an existing Packet or County Engineers I.M. document is published, simply insert the new I.M. in numeric order.

   - When an existing I.M. is revised, simply remove the old I.M. and replace it with the new I.M.

3. When a new or revised I.M. is published, an e-mail notice will be sent to those on the Office of Local Systems mailing list. To be included on the Office of Local systems mailing list, sign-up on-line at: http://www.iowadot.gov/local_systems/mailing/mailing_order_form.htm.

Instructional Memorandums to Local Public Agencies
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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

Iowa Department of Transportation

To:	Counties and Cities	Date: February 21, 2008
From:	Office of Local Systems	I.M. No. 1.070
Subject:	Title VI and Nondiscrimination Requirements	

Contents: This Instructional Memorandum (I.M.) provides guidance for a Local Public Agency (LPA) to understand and comply with the requirements of Title VI and related nondiscrimination laws and regulations that are applicable to Federal funding assistance that is passed through the Iowa Department of Transportation (Iowa DOT).

Title VI of the Civil Rights Act of 1964

"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." (42 U.S.C. 2000d)

The Civil Rights Act of 1964 (the Act) is a fundamental piece of legislation that forms the basis for a wide array of subsequent, laws, executive orders and regulations, all designed to prohibit discrimination. Technically, Title VI covers race, color and national origin. However the term "Title VI" is also used more generically to refer to non-discrimination on any basis.

There are eleven titles in the Act covering a variety of activities, for example: Title I – Voting Rights, Title II – Public Accommodations, and Title VII – Equal Employment Opportunity. Title VI of the Act deals specifically with Nondiscrimination in Federally Assisted Programs and Activities.

The Act has broad application. It prohibits discrimination in impacts, services, benefits of, access to, participation in, and treatment under a Federal-aid recipient's programs or activities. Title VI of the Act is not limited to a particular program or issue. Title VI can surface at any phase of a transportation project with potentially significant impacts. Because of this, preventing discrimination is everyone's responsibility. It is not a duty that can be delegated or assigned entirely to an individual or a team. It is important for all staff to have some awareness of non-discrimination concepts so they can be observant for prohibited actions as they conduct their daily routine.

There are some important points to take note of. The Act does not mention a specific race (e.g. Hispanic), color (e.g. Black) or national origin (e.g. Chinese). It prohibits discrimination against *any* race, color or national origin. There is no "reverse discrimination", only discrimination. For example, denying services to a white male because of race is also discrimination. Also, the Act uses the language…"No person in the United States…." it does not mention citizenship. It applies to all people in the U.S, citizen or not, with regard to any program or activity to which they are otherwise eligible for.

Discrimination

To help understand Title VI impacts and application it is useful to define discrimination and identify how it may surface.

The Federal Highway Administration (FHWA) regulations which implement Title VI and the related statutes define discrimination as "That act (or action) whether intentional or unintentional, through which a person in the United States, solely because of race, color, religion, sex, or national origin has been otherwise subjected to unequal treatment under any program or activity receiving financial assistance from the Federal Highway Administration under title 23 U.S.C." (23 CFR 200.5 (f)).

Discrimination is evidenced primarily in two fashions, disparate treatment and disparate impact.

Disparate treatment occurs when a person is treated differently (discriminated against) because of their race, color, national origin, etc. This is a more obvious form of intentional discrimination that occurs when the person's race or protected class status are known, and when a decision is made (at least in part) on a prohibited basis. For example, a contractor or supplier is not used, or is held to a different standard, because

of their race. Disparate treatment involves the inconsistent application of rules or policies to one group of people or another.

Disparate impact is more unintentional discrimination. This occurs when a policy or program, while neutral on its face, has the unintended consequence of being discriminatory. For example, a public transit system ends service at 10:00 P.M., yet late night customers are primarily Hispanic because many people in the Hispanic community depend on public transportation for late shift employment. On the surface the policy is neutral; service ends for all riders at a designated time. Yet, unintentionally, the Hispanic community bears a disproportionately large negative impact. This type of discrimination is more subtle and difficult to identify. However, to comply with Title VI regulations it must be avoided.

Related Non-discrimination Authorities

Right-of-way and Property Impacts

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4601)

"For the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a Federal agency or with Federal Financial assistance."

This prohibits unfair or inequitable treatment of persons displaced or whose property will be acquired as a result of Federal and Federal-aid programs and policies. Note that this applies regardless of the source of funds used to purchase the property, Federal-aid or not.

Disability

Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794)
The Americans with Disabilities Act (P.L. 101-336)

"No qualified handicapped person shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity that receives or benefits from Federal financial assistance."

Discrimination because of a mental or physical disability is prohibited. At the time the legislation was initially developed, the term "handicap" was used; however, this has negative connotations. This term originates from the phrase, "cap in hand", which was used to describe a beggar. As a result, the terms "disabled" or "disability" are preferred.

Sex (Gender)

Federal-aid Highway Act of 1973 (23 U.S.C. 324)

"No person shall on the ground of sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal assistance under this title or carried on under this title."

Discrimination because of sex (gender) is prohibited.

Age

The Age Discrimination Act of 1975 (42 U.S.C. 6101)

"No person shall on the basis of age, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Discrimination on the basis of age is prohibited.

The Civil Rights Restoration Act of 1987 (P.L. 100-259)

Non-discrimination requirements have been developed over time as evidenced by the dates listed previously. This I.M. only highlights the major actions that have significance to the transportation community. Non-discrimination efforts of the Federal government have been going on since the time of the Civil War.

Over the course of time the intent of this work became diffused, misinterpreted or misconstrued. The Restoration Act of 1987 clarifies the original intent of Congress in Title VI of the 1964 Civil Rights Act, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, and Section 504 of Rehabilitation Act of 1973. This act restores the broad, institution-wide scope and coverage of the non-discrimination statutes to include all programs and activities of Federal-aid recipients, subrecipients and contractors, whether such programs and activities are Federally assisted or not.

What this means is that if an LPA receives even one dollar of Federal financial assistance, then all of the programs and activities of that LPA are covered by Title VI, whether all those programs and activities are Federally funded or not. For example, if a County Secondary Road Department receives Federal Highway Bridge Program funds to reconstruct a bridge, all of the activities and programs of the county government are covered by Title VI.

Limited English Proficiency LEP (Executive Order 13166)

Executive order 13166 is titled, “Improving Access to Services for Persons with Limited English Proficiency,” and was signed by President Clinton on August 11, 2000.

A person is considered to have limited English proficiency (LEP) if they do not speak English as their primary language and if they have a limited ability to read, speak, write or understand English. Programs and services normally provided in English must be accessible to persons with LEP in order to avoid national origin discrimination that is prohibited by Title VI.

Meaningful access is the key concept. The central goal of this presidential order is to provide meaningful access for LEP persons to programs and services offered by recipients of Federal financial assistance. Recipients continue to be subject to Federal non-discrimination requirements even though they may be in a jurisdiction where English has been declared as the official language. Federal requirements supersede State and local ones.

Environmental Justice (Executive Order 12898)

Executive order 12898 is titled, “Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations.” It was signed by President Clinton on February 11, 1994.

Environmental Justice (EJ) relates to the human environment and to human health in minority and low income populations. It says in part, “…each Federal agency shall make achieving Environmental Justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…”

There are three fundamental principles of Environmental Justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The minority groups that Environmental Justice addresses are Blacks, Hispanics, Asian Americans, American Indians and Alaskan Natives. Low income is defined as a person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines.

A key component is to identify the populations impacted by transportation projects or services and to ensure they have full opportunity to participate in the decision making process.

An example of Environmental Justice concerns would be locating a highway through a low income neighborhood to avoid a more affluent area.

Program Applications and Impacts

Federal Financial Assistance

Application of many of the non-discrimination requirements is dependent upon the receipt of Federal financial assistance. Federal financial assistance is defined at 49 CFR 21.23 (c). In addition to grants or loans of Federal funds, it also includes Federal property and the detail of Federal personnel (e.g., a Federal employee providing training). Because of the Civil Rights Restoration Act of 1987, if a governmental department receives even one dollar of Federal assistance, then all of the programs and activities of that governmental department are covered by Title VI. Programs and activities are defined at 49 CFR 21.23 (e) and, in the case of assistance to a department of State or local government, it includes all of the operations of the department to which assistance is extended.

The ultimate beneficiaries of Federal assistance are not defined as recipients of Federal assistance. The ultimate beneficiary of Federal Highway Administration (FHWA) funding is the traveling public. For example, the people that drive on the roads and bridges built with that funding, but those persons are not prohibited from discriminating simply because they use a Federally funded project or service. In a related fashion, a contractor building a Federal-aid highway project does not receive Federal assistance. They are simply being paid for work completed. Nevertheless, contractors are prohibited from discriminating because of the standard Title VI assurances included in the contract.

What Title VI Does

- Prohibits entities from denying an individual any service, financial aid, or other benefit.
- Prohibits entities from providing services or benefits that are different or inferior (either in quantity or quality) to those provided to others.
- Prohibits segregation or separate treatment in any manner related to receiving program services or benefits.
- Prohibits entities from requiring different standards or conditions as prerequisites for serving individuals.
- Encourages the participation of minorities as members of planning or advisory bodies for programs receiving Federal funds.
- Prohibits discriminatory activity in a facility built in whole or in part with Federal funds.
- Requires information and services to be provided in languages other than English when significant numbers of beneficiaries are of limited English speaking ability.
- Requires entities to notify the eligible population about applicable programs.
- Prohibits locating facilities in any way that would limit or impede access to a Federally funded service or benefit.
- Requires assurance of nondiscrimination in purchasing of services.

Planning and Programming

The planning and programming of projects is a critical step in the delivery of transportation services to the public. Funding distribution and allocation can have a significant impact on opportunities for all persons. Those involved in these processes must have knowledge of non-discrimination requirements and how they impact their work.

Typical Assurance Activities:

- Take positive steps to identify impacted groups and to ensure full and fair participation by those groups in the development of the Transportation Improvement Program (TIP).
- Ensure that the planning and programming process results in a program which distributes benefits and mitigates disparate impacts equitably.
- Address complaints and concerns promptly.

Design and Project Development

The final design of individual projects is what ultimately impacts the public in a positive or negative fashion. Designers must recognize how non-discrimination affects the conceptual and technical components of a project.

Typical Assurance Activities:

- Identify minority and low income populations and ensure they have the opportunity for meaningful participation in the design process.
- Thoroughly examine design alternatives to ensure that environmental justice considerations are recognized and addressed during route location selection and final design.
- Consistently apply design standards to eliminate, minimize or mitigate adverse impacts among affected groups and to provide equitable levels of service.
- Provide opportunities for Disadvantaged Business Enterprise (DBE) firms on consultant contracts.
- Ensure that facilities are designed in accordance with current ADA accessibility requirements (for more information, refer to I.M. 1.080, ADA Requirements).

Right-of-Way

No single element of the transportation system may have a greater impact on people than right-of-way activities. The taking or use of one's property can make a major change in their lives. Therefore, people involved in the right-of-way process must understand and practice non-discrimination in their work.

Typical Assurance Activities:

- Make every effort to ensure clear communications with persons who have limited English proficiency or who are hearing impaired. This includes the use of interpreters and translators when necessary.
- Appraisal, acquisition, condemnation and relocation procedures must be fair and impartial.
- Provide opportunities for DBE firms on consultant contracts.

Construction

Construction, including the letting and contract award process, provides opportunities for contractors and impacts property owners. Contract award and administration procedures must be fair and impartial.

Typical Assurance Activities:

- The following activities must be conducted equitably, without regard to race, color, national origin, or other protected basis: Prequalification of contractors; award of contract, subcontract, or extra work; level of inspection; enforcement of specifications; and treatment of adjacent property owners and tenants.

Consultants and Research

Local governments use consultants and other service providers to perform a variety of services. Because of the Restoration Act, non-discrimination applies to the selection and administration in all of the contracts.

Typical Assurance Activities:

- Provide opportunities and encourage the participation of DBE vendors in all categories of service.
- Fairly and equitably award and administer contracts.

Female/Minority Participation and DBE Goals

Title VI and related statues require that females and minorities be afforded full opportunity to participate in covered contracts. Because of the Restoration Act of 1987 all programs and activities of a Federal-aid

recipient are covered by Title VI, whether those programs and activities are Federally funded or not. Female and minority contractors must have every opportunity to submit bids and may not be discriminated against in consideration for award in all contracts, Federal-aid or not. This does not mean that all contracts should have goals for female/minority participation.

Contract goals are often established as part of the DBE program in order for the Iowa DOT to achieve it's Annual DBE Goal. It is important to note that the DBE program applies only to Federal-aid contracts. DBE contract goals must not be established on non-Federal-aid contracts, unless a disparity study has been conducted to ensure they are warranted.

The Iowa DOT sets goals for construction contracts let through the Iowa DOT. However, for Federal-aid consultant contracts and locally-let Federal-aid construction contracts, the LPA is responsible for setting goals for DBE participation, subject to Iowa DOT review and approval. For more information, refer to I.M. 3.710, DBE Guidelines.

Compliance Actions

The goal of the U.S. Department of Transportation, the FHWA, and the Iowa DOT is voluntary compliance with non-discrimination requirements. This is achieved through an on going process of education, analysis, implementation, and evaluation. The guidance provided in this I.M. is a first step in the education process. It can be used to raise awareness among staff of local governments.

Compliance requires more than simply recognizing these issues exist however. Some action must be taken. In order to begin the process, the Iowa DOT recommends that local governments take the following actions as minimum and initial effort:

- Recognize that preventing discrimination is everyone's responsibility. Share this I.M. and other non-discrimination information with all staff so they can be aware of the various requirements and work to achieve compliance.

- Ensure the required Standard DOT Title VI assurances, adapted as appropriate, are included in all Federal-aid contracts and subcontracts. A Federal-aid contract is one in which the cost of the work, services, material, etc. obtained by the contract will be reimbursed with Federal funds. To assist LPAs with this compliance action, the Iowa DOT has already incorporated the Standard DOT Title VI assurances into the bidding and contract documents which have been developed for use with LPA Federal-aid construction contracts let through the Iowa DOT.

  For other types of Federal-aid contracts, such as those for locally let construction contracts, consultant contracts, railroad work, utility relocations, acquisition of property rights, permits, or licenses; the LPA shall include the applicable Standard DOT Title VI assurances in all such contracts and subcontracts. The Standard DOT Title VI assurances are included in Appendix B to the FHWA Office of Civil Rights training manual titled, "Preventing Discrimination in the Federal Aid Program: Systematic Interdisciplinary Approach Reference Notebook".

- The following standard non-discrimination notification, modified as appropriate, shall be included in all solicitations for bids and in all requests for negotiated agreements, whether Federal-aid will be used or not:

  > "The (name of LPA), in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all (bidders / consultants) that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit (bids / proposals) in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award."

- Recognize and respond to LEP issues. Current guidance from U.S. DOT is available on the Federal Register (FR) at 70 FR 74087 (12/14/05). This includes a four factor analysis to determine the appropriate response, and defines a "safe harbor" for measuring compliance with written translations.

- Address any complaints. Informal reports of discrimination should be investigated and resolved promptly. Formal written complaints against a local government must be forwarded to the Contracts Engineer, Iowa DOT, 800 Lincoln Way, Ames, IA 50010.

Resources and References

28 CFR 35 – Department of Justice's regulations governing nondiscrimination on the basis of disability in state and local government services

49 CFR 21 – United States Department of Transportation's regulation on implementing Title VI of the Civil Rights Act of 1964

23 CFR 200 – Federal Highway Administration's regulation on implementing Title VI of the Civil Rights Act of 1964

Federal Highway Administration Office of Civil Rights webpage – This webpage also provides links to several resources related to some specific areas of Title VI compliance, including:

Executive Order 12898, Environmental Justice
Executive Order 13166, Limited English Proficiency
Americans with Disabilities Act (ADA) Questions and Answers

United States Access Board – A Federal Agency Committed to Accessible Design

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: February 21, 2008
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 Curb Ramp 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 services, facilities, or programs, 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 programs and activities, regardless of whether the agency is a recipient of Federal financial assistance 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 of the Rehabilitation Act of 1973 (now codified at 23 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, activities, and services that receive Federal Financial assistance. This means LPA transportation projects that receive Federal funding through the Iowa Department of Transportation (Iowa DOT) must comply with the Section 504 requirements.

Accessibility Standards and Guidelines

The standards used to determine whether facilities comply with the Section 504 and ADA laws 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 United States Department of Justice (U.S. DOJ) and the United States Department of Transportation (U.S. DOT). After the Access Board guidelines are adopted, they become the legally enforceable accessibility standard. The U.S. DOT, through the Federal Highway Administration (FHWA), is responsible for overseeing the implementation of the Section 504 and ADA laws, as they apply to pedestrian facilities in the public right-of-way. In this capacity, the U.S. DOT has adopted the Americans with Disabilities Act Accessibility Guidelines (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 is in the process of developing new guidelines specifically for the public right-of-way, referred to as the Revised Draft Guidelines for Accessible Public Rights-of-Way. These guidelines have not yet been adopted by the U.S. DOT as the legally enforceable standard. However, they represent the current best practices of accessible design, and in the future, they will likely become the accessibility standard for pedestrian facilities in the public right-of-way. Therefore, these guidelines should be used for all new construction and alteration to pedestrian facilities.

Accessibility Requirements

New Construction and Alterations

All new construction of and alterations to pedestrian facilities shall be made accessible to persons with disabilities, to the maximum extent it is technically feasible, without regard to cost. These improvements shall be made at the time of the construction or alteration project.

The FHWA has defined alterations as follows: "An alteration is a change to a facility in the public right-of-way that affects or could affect access, circulation, or use. Projects altering the use of the public right-of-way must incorporate pedestrian access improvements within the scope of the project to meet the requirements of the ADA and Section 504. These projects have the potential to affect the structure, grade, or use of the roadway. Alterations include items such as reconstruction, major rehabilitation, widening, resurfacing (e.g. structural overlays and mill and fill), signal installation and upgrades, and projects of similar scale and effect." (FHWA Office of Civil Rights, Questions and Answers about ADA / Section 504, no. 17. See link under Additional Resources section below.)

When the scope of a transportation project includes alterations to existing pedestrian facilities, those facilities must be brought up to current accessibility standards. For example, if a project resurfaces the street, for accessibility purposes, the curbs and pavement at the pedestrian crosswalk (whether it is marked or not), are in the scope of the project, but the sidewalks are not. Any of the features disturbed by the construction must be replaced so that they are accessible. In addition, if curb ramps already exist but do not meet the current accessibility standards, those ramps must be either reconstructed or retrofitted to meet the current accessibility standards.

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. This would include, but not be limited to: thin surface treatments (e.g., seal coat, slurry seals, or chip seals), joint repair, pavement patching (e.g., filling potholes or limited areas of pavement replacement), shoulder repair, pavement markings, minor signal upgrades, and repairs to drainage systems.

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 mechanical 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.

Technical Feasibility

As noted above, construction or alterations to pedestrian facilities shall be made accessible to the maximum extent it is technically feasible. According to ADAAG 4.1.6(j), technical infeasibility "Means, with respect to an alteration of a building or a facility, that it has little likelihood of being accomplished because existing structural conditions would require removing or altering a load-bearing member which is an essential part of the structural frame; or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility." For a transportation project, an analogous situation might be removal of a bridge pier in order to provide the width required for a fully accessible trail or sidewalk. If an LPA believes that construction or alterations to a pedestrian facility cannot be made fully accessible, it should document what has been done to provide accessibility to the maximum extent feasible.

Transition Plans

Neither the ADA nor Section 504 require pedestrian facilities to be constructed where there currently are none. However, where pedestrian facilities are provided, they must be made accessible to persons with disabilities. Toward that end, all LPAs with 50 or more employees and all LPAs with 15 or more employees that are recipients of Federal funds are required to prepare a transition plan, if structural changes are required in order to make its programs, services, or facilities accessible. The ADA regulations (23 CFR 35.150(c)) require a transition plan to have been prepared by July 26, 1992, and all improvements identified in the plan to have been completed by January 26, 1995.

When required, the transition plan must address all facilities and programs 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 programs or activities to individuals with disabilities.
   - 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, this should include a list of all locations where existing sidewalks intersect the curb and no curb ramp is provided.
   - 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 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.
   - 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 with this section 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.

The ADA regulations also require the LPA to provide an opportunity for interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the development of the transition plan by submitting comments. 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 Curb Ramp 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

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 indentify 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.

Complaint Procedures

All LPAs with 50 or more employees and all LPA recipients of Federal funds with 15 or more employees 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 laws. LPAs should make all possible efforts to resolve complaints on the local level.

Complaints may also be filed with the U.S. Department of Justice. In such cases, complaints that relate to pedestrian facilities in the public right-of-way are referred to the U.S. DOT, which in turn are forwarded to the FHWA and Iowa DOT. Upon receipt of a complaint against an LPA, the FHWA and the Iowa DOT will investigate and prepare a report. The report will summarize the findings and make recommendations to resolve the complaint. The report and recommendations will be forwarded to the FHWA Office of Civil Rights for final review and acceptance. If accepted, the LPA will be required to address the report recommendations in the timeframe specified. If the LPA is uncooperative or fails to address the complaint in a timely manner, the case may be referred to the U.S. Department of Justice for possible litigation.

ADA and Section 504 Coordinator

All LPAs with 50 or more employees and all LPA recipients of Federal funds with 15 or more employees are required to designate at least one employee to coordinate compliance with these laws and regulations. The LPA shall make available to all interested parties the name, office address, and telephone number of its ADA and Section 504 Coordinator.

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.

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.

Sample Curb Ramp Transition Plan

City of [city name], Iowa
[date approved]

Purpose

It has been determined that in some locations, curb ramps have not been provided at the intersections of public sidewalks and streets, as required by the Americans with Disabilities Act (ADA) and Title 28 of the Code of Federal Regulations (CFR), Part 35, which implement the ADA law. In other locations, curb ramps have been provided, but they no longer meet current ADA accessibility requirements. In response, the City has prepared this curb ramp transition plan in order to outline the steps it will take to provide new curb ramps or upgrade existing curb ramps as required by the ADA and its implementing Regulations.

Methods to Achieve Accessibility

Public Involvement

Public input was obtained in the development of this plan by soliciting comments from [include any advisory committees, task forces, organizations that represent persons with disabilities, or any other groups that were provided an opportunity to comment here], the City Council, and the general public.

Curb Ramp Program

The City has budgeted $[amount] annually for its curb ramp program, which provides funds for the construction of curb ramps and other similar pedestrian accommodations to achieve compliance with the ADA. The City's curb ramp program will proceed as follows:

Using the funds allocated for this program, where no curb ramps are currently provided, curb ramps will be installed at all intersections of sidewalks with public streets, as shown on the attached Curb Ramp Inventory. Ramps will be constructed at the locations identified on the Curb Ramp Inventory according to the following priorities:

1. State and local government offices and facilities (city hall, public schools, public library, etc.)
2. Public transportation facilities (bus stops, train stations, etc.)
3. Places of public accommodation (central business district, public recreation areas, etc.)
4. Residential areas

From among the ramps identified for each of these priorities, the City will develop, with input from the [name of citizens advisory committee or other group(s)], an accomplishment list of specific locations to be constructed each construction season. Prior to the beginning of each construction season, the City will provide notice to the public that the accomplishment list and an updated Curb Ramp Inventory are available for inspection.

Other Projects

In addition to those ramps constructed by the curb ramp program, where no curb ramps are currently provided, curb ramps will also be constructed at the intersection of sidewalks and public streets as a part of other projects. The cost of these ramps will be paid for with the funds allocated for the street or sidewalk project. For the sake of cost effectiveness, these ramps will be constructed at the time of the street or sidewalk project, even if they are identified as a lower priority than other ramps that have yet to be constructed, as shown on the attached Curb Ramp Inventory.

Curb ramps will be installed as a part of projects that involve new construction, reconstruction, or alterations to pedestrian facilities in the public right-of-way. Such facilities include, but are not limited to, sidewalks, curbs, curb ramps, the portion of the street surface in the crosswalk area, pedestrian signals, and elevators or lifts provided in the public right-of-way. Alterations include activities that change the structure, grade, function, or use of the pedestrian facility. For streets and sidewalks, alterations include such activities as: full depth pavement replacement, widening, resurfacing, signal installation, pedestrian signal installation, and other projects of similar scale and effect.

Routine maintenance operations or other activities that are intended to preserve or retard future deterioration of the facilities are not considered an alteration. Examples of maintenance activities associated with streets and sidewalks include, but are not limited to: thin surface treatments (slurry seals, chip seals, etc.), joint repair, patching (limited pavement replacement in isolated areas), and repairs to drainage structures.

Existing Curb Ramps

In many locations, curb ramps already exist at the intersections of sidewalks and public streets. However, the ADA requirements for accessible design may have changed since some of these ramps were constructed. In such cases, existing curb ramps will be reconstructed or retrofitted to meet current ADA requirements for accessible design, including detectable warning surfaces, when the street or sidewalk abutting these ramps is reconstructed or altered. The cost of this work will be paid for using funds allocated for the street or sidewalk project.

Schedule

Based on the number of ramps identified for each priority below, the estimated cost of those ramps, and the funding levels identified above, the City estimates completion of the ramps listed on the attached Curb Ramp Inventory according to the following schedule:

Priority 1 Ramps

Number of ramps: [number]
Estimated number of ramps constructed per year: [number]
Construction season targeted for completion: [calendar year]

Priority 2 Ramps

Number of ramps: [number]
Estimated number of ramps constructed per year: [number]
Construction season targeted for completion: [calendar year]

Priority 3 Ramps

Number of ramps: [number]
Estimated number of ramps constructed per year: [number]
Construction season targeted for completion: [calendar year]

Priority 4 Ramps

Number of ramps: [number]
Estimated number of ramps constructed per year: [number]
Construction season targeted for completion: [calendar year]

These estimates are subject to change, based on changes to the number of ramps identified in the Curb Ramp Inventory, the estimated cost of those ramps, and the funding levels provided for the curb ramp program.

Responsible Parties

Responsibility for the implementation of this plan rests with the [title of appropriate city official]. Responsibility for the funding of this plan rests with the City Council of the [city name], Iowa.

_____ _____

[name], [title] Date
City of [city name]
[street address]
[city], IA [zip code]
[office phone number]
[e-mail address]

Curb Ramp Inventory

City of [city name], Iowa

Date of Initial Inventory: [date]
Date of Last Update: [date]

This inventory includes all locations where no curb ramps are provided at the intersection of existing sidewalks and public streets. In accordance with the city's Curb Ramp Transition Plan, curb ramps will be installed in these locations according to the following priorities:

1. State and local government offices and facilities (city hall, public schools, public library, etc.)
2. Public transportation facilities (bus stops, train stations, etc.)
3. Places of public accommodation (central business district, public recreation areas, etc.)
4. Residential areas

Priority	Location / Type of Improvement Needed	Date Completed

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: May 11, 2011
From:	Office of Local Systems	I.M. No. 2.120
Subject:	Bridge Inspections	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for a Local Public Agency (LPA) to assist them in complying with the National Bridge Inspection Standards (NBIS). This I.M. also includes the following attachments:

Attachment A - Bridge Scour Stability Worksheet – Level A Evaluation
Attachment B - Intermediate Scour Assessment Procedures Flowchart – Level B Evaluation
Attachment C - Scour Plan of Action (POA)
Attachment D - Scour Safe Foundations for Spread Footings or Steel Piles
Attachment E - Highly Erodible Soils
Attachment F - Berm Stability Criteria
Attachment G - Guidance for Developing and Implementing Plans of Actions (POA) for Bridges with Unknown Foundations, Flowcharts, and Worksheet
Attachment H - USGS Hydrologic Region Map with Region Descriptions
Attachment I - Special Training, Equipment, and Access Requirements Checklist
Attachment J - Load Rating Evaluation Form
Attachment K - Iowa Legal Trucks Diagrams
Attachment L - Quality Assurance Field Review Worksheet
Attachment M - Routine Permit Trucks Diagrams

Introduction

According to Iowa Code Chapter 314.18, the counties, cities, and other public agencies are responsible for the safety inspection and evaluation of all highway bridges under their jurisdiction which are located on public roads, in accordance with the NBIS. These responsibilities include inspection policies and procedures, inspections, reports, load ratings, quality control (QC), quality assurance (QA), maintaining a bridge inventory, and other requirements of the NBIS.

The NBIS may be found in 23 CFR 650. The following are additions or clarifications to the indicated subsections of 23 CFR 650.

Definitions (23 CFR 650.305)

Armored Countermeasure (Armoring) - Material such as Class E Revetment, according to Section 4130 of the Standard Specifications, placed under and around a bridge structure for the purpose of protecting the embankment or berm from scour and/or erosion. Armoring is not a permanent countermeasure since the material is subject to displacement during a major flood event which is considered to be the lesser of the 500 year or roadway overtopping event.

Bridge Inspector Refresher Training Course – (FHWA-NHI-130053) – The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques, review the background knowledge necessary to understand how bridges function, communication issues of national significance relative to the nations' bridge infrastructures, re-establish proper condition and appraisal rating practices, and review the professional obligations of bridge inspectors.

Fracture Critical Inspection Techniques for Steel Bridges Training Course – (FHWA-NHI-130078) – The course curriculum for this training reflects current practices, while addressing new and emerging technologies available to bridge inspectors. In addition, the course features exemplary training, hands-on workshops for popular types of nondestructive evaluation (NDE) equipment, and a case study of an inspection plan for a fracture critical bridge.

Fracture Critical Member (FCM) - A steel member in tension, or with a tension element, whose failure would probably cause a portion of or the entire bridge to collapse. Floor beams are considered to be fracture critical members when the floor beam spacing is greater than 14 feet.

Extended Inspection Cycle - A period of time to allow for unforeseen circumstances such as severe weather, concern for bridge inspector safety, concern for inspection quality, the need to optimize scheduling with other bridges, or other unique situations may be cause to adjust the scheduled inspection date. The adjusted date should not extend more than 30 days beyond the scheduled inspection date.

Independent Party - An entity not influenced by or affiliated with the LPA or the LPA's Program Manager. An LPA or consulting firm with more than one Program Manager can utilize an alternate Program Manager from the same consulting firm or LPA to conduct the QA review.

Low Water - Water depth of less than 6 feet.

Monthly Notifications – automated notifications sent by e-mail to the LPA's by the Iowa DOT's Office of Bridges and Structures regarding inspections past due or bridges not in compliance with posting requirements on a monthly basis.

Permanent Countermeasure - Designed to account for all three major types of scour (i.e. long term degradation, general or contraction scour, and local pier or abutment scour). Properly designed and installed systems satisfy the requirements of a "Permanent" classification. Examples of permanent systems include:

- Fabric Formed Articulated Block Mattress (ABM)
- Stone Revetment
- Proprietary Articulated Concrete Block (ACB)
- Gabion Mattress

Stone revetment is subject to displacement during a major flood event which is considered to be the lesser of the 500 year or roadway overtopping event. Therefore, unless the revetment is designed in accordance with Hydraulic Engineering Circular (HEC) HEC 23 and contained, it cannot be considered to provide adequate protection to attain a "Permanent" classification. The following are some examples of permanent stone revetment:

- Burial below the contraction scour elevation.
- Installation of cut-off walls.
- Placing the revetment as launchable stone.

Safety Inspection of In-service Bridges – (FHWA-NHI-130055) – This course is based on the "Bridge Inspector's Reference Manual" and provides training on the safety inspection of in-service highway bridges. Satisfactory completion of this course will fulfill the training requirements of the National Bridge Inspection Standards (NBIS) for a comprehensive training course. This course does not address fracture critical, underwater, or complex structures.

Scour Plan of Action (POA) (see Attachment C to this IM) - A POA is a written procedure developed by the bridge owner or delegated Program Manager that outlines the monitoring plan for a specific bridge. The plan provides guidelines and practical information pertaining to each bridge for the purpose of monitoring foundation scour during flood events.

Standard bridge – a bridge constructed using the "Bridge Standards" developed by the Iowa DOT. See the Procedures for Rating Standard Bridges section below in this IM.

Structural Inventory and Inspection Management System (SIIMS)(R) - Bridge inspection data collection software.

Scour Evaluation - Scour evaluation is the process of determining the susceptibility of each bridge for scour. The depth, or level, of this process varies for each bridge. Some bridges may be determined scour safe after the first level of evaluation, Level A. Other bridges cannot be determined scour safe after Level A so they shall go to Level B using assessment procedures. Still others may need to go to the highest level of evaluation, Level C.

Level A - Bridge Scour Stability Worksheets (see Attachment A to this IM). Bridges that meet the required Stability Total of less than 35 points, do not need any further evaluation, and may be considered scour safe. Bridges with a Stability Total of 35 points or greater need further evaluation using the Level B Intermediate Scour Assessment Procedures Flowchart (see Attachment B to this IM).

Level B - Intermediate Scour Assessment Procedures Flowchart (see Attachment B to this IM). From this assessment, bridges are determined to be either stable, limited risk needing monitoring, scour susceptible needing monitoring, or scour susceptible needing a Level C Evaluation.

Level C - This is the most in-depth level of the evaluation process needed for those bridges that do not satisfy guidelines in the Level B Evaluation. A full computational analysis is completed using the Federal Highway Administration's HEC 18 procedures and a determination is made concerning the stability of the bridge. Bridge owners may decide to develop a Plan of Action (POA) for these structures in lieu of the Level C Evaluation.

Thalweg - The lowest point in the stream channel along the cross section.

Bridge Inspection Organization (23 CFR 650.307, d)

According to Iowa Code 314.18, the counties, cities, and other public agencies are responsible for the safety inspection and evaluation of all highway bridges under their jurisdiction, which are located on public roads, in accordance with the NBIS. These responsibilities include inspection policies and procedures, inspection reports, load ratings, QC, QA, maintaining a bridge inventory, and other requirements of the NBIS.

The NBIS regulations apply to all publicly owned highway bridges longer than 20 feet located on public roads. Railroad and pedestrian structures that do not carry vehicular traffic are not covered by the NBIS regulations. Similarly, the NBIS does not apply to inspection of sign support structures, high mast lighting, retaining walls, noise barrier structures, and overhead traffic signs. Tunnels, since they are not bridges, are not covered by the NBIS.

While NBIS is for all public highway bridges, the FHWA has no legal authority to require private bridge owners to inspect and maintain their bridges. However, the FHWA strongly encourages private bridge owners to follow the NBIS as the standard for inspecting their highway bridges. Where a privately owned bridge carries a public road, FHWA encourages the private bridge owner to inspect their bridge in accordance with the NBIS or reroute their public road.

The Bridge Owner shall have a Program Manager who is assigned the above responsibilities. The Bridge Owner may retain a consultant to perform the duties of Program Manager.

Qualifications of Personnel (23 CFR 650.309, b)

The Iowa DOT has developed the following procedure to determine if an individual with experience performing NBIS bridge inspections can qualify as a Team Leader in accordance with the 23 CFR 650.309(b) and guidance provided by FHWA Questions and Answers on NBIS.

Bridge inspection experience is defined as active participation in bridge inspections in accordance with NBIS, in either a field inspection, supervisory, or management role. A combination of bridge design, bridge maintenance, bridge construction, and bridge inspection experience is acceptable. At least 50% or more of the individual's experience must come from bridge inspection.

To determine an individual's bridge inspection experience, the number of years performing or supervising bridge inspections and the number of annual bridge inspections performed shall be provided. Office work associated with field inspection; such as, completing Structure Inventory & Appraisal (SI&A) forms, maintaining files of inspection data, performing load rating calculations, and other miscellaneous work, may be considered bridge inspection experience. One day a week is allotted for office work related to field inspection; therefore, the number of days calculated for field inspection time is divided by 4 to approximate average office time and then added to the field inspection time.

Example calculation of bridge inspection experience for a technician Team Leader:

Number of years performing or supervising bridge inspections: 25
Annual bridge inspections performed: 150
150 bridges/6 bridges per day = 25 days
25 days/4 = 6.25 days of office related work
Total days per year = 25+6.25= 31.25 days
Months per year: 31.25 days/22 working days per month = 1.42 months
Bridge inspection experience: (1.42 months) (25 years) = **35.5 months**

35.5 months is greater than the required 30 month minimum, therefore this person would be approved.

Bridge inspectors not qualified as Team Leaders may assist the Team Leader but may not inspect bridges independently. Education and experience requirements for bridge inspectors who are not Team Leaders should be determined by the Program Manager or Bridge Owner.

Program Managers and Team Leaders who perform field inspections on FCM's shall complete the Fracture Critical (FC) Inspection Techniques for Steel Bridges Training Course, by December 31, 2011. Any individual that meets the qualifications of Program Manager or Team Leader after December 31, 2011, that will be performing field inspections on FCM's shall complete the Fracture Critical (FC) Inspection Techniques for Steel Bridges Training Course.

The NBIS requires periodic bridge inspection refresher training for Program Managers and Team Leaders as part of QC and QA. The Iowa DOT has defined periodic as being every 5 years. Therefore, all bridge inspection personnel are required to complete the Bridge Inspection Refresher Training Course every 5 years following the completion of the Safety inspection of In-Service Bridges Training Course.

Professional Engineers that have successfully completed the Safety Inspection of In-Service Bridges have met the qualifications to be bridge inspection Program Managers as per the NBIS. The Iowa DOT provides access to bridge records authorized by the bridge owners in SIIMS bridge inspection software to these individuals once they have submitted the Bridge Inspector form provided on the SIIMS website to the Iowa DOT for review and approval.

Approved Program Managers are provided access to all forms and records for each bridge authorized by the bridge owner. Individuals approving the Load Rating form are required to be Professional Engineers licensed in the state of Iowa. Therefore, each person that is required to approve the load rating information must submit the Bridge Load Rating form provided in SIIMS. The Bridge Load Rating form must be reviewed and approved by the DOT, or by an approved Program Manger who has submitted the Bridge Inspector form including Professional License information. Editing of the Bridge Load Rating form by other users with authorized access to the bridge forms is permitted but approval can only be completed by a qualified Load Rater.

Inspection Frequency (23CFR 650.311)

Routine Inspections (23CFR 650.311, a)

The required inspection frequency for routine inspections may be extended by the extended inspection cycle to account for unforeseen circumstances as described in the definition of extended inspection cycle. Subsequent inspections should adhere to the previously established interval; that is the use of the extended inspection cycle should be an exception. The inspection date recorded for Items 90, Inspection Date, shall be the actual date the new inspection is initiated. The details of why the bridge inspection was late shall be documented and placed in the bridge file folder.

Bridges that have Item 58, Deck; Item 59, Superstructure; or Item 60, Substructure, with a condition rating of 3 or less, should have an inspection frequency less than 24 months, which may be a routine inspection on a more frequent basis or a special inspection in between routine inspections. Other factors that may impact frequency of inspections are Item 29, ADT; Item 70, Posting; Item 64, Operating Rating; and all items under Structure Type and Materials on the SI&A form.

Underwater Inspections (23CFR 650.311, b)

Underwater inspection requirements covered in this article pertain to the inspection of the structural elements such as abutments or piers to determine the structural integrity. If at any time during the 60 month underwater inspection interval there is low water, inspections may be performed with a method appropriate for the element and without the use of divers.

Bridges that have Item 60, Substructure, with a condition rating of 3 or less due to deficiencies below the waterline should have an underwater inspection frequency less than 60 months. Other factors that may impact frequency of inspections are Item 29, ADT; Item 70, Posting; Item 64, Operating Rating; all items under Structure Type and Materials; environment; age; and scour characteristics.

Fracture Critical Members (FCMs) (23CFR 650.311, c)

An Item 59, Superstructure, coding of 4 or less should have an inspection frequency less than 24 months. FCM inspection may be on a more frequent basis or a special inspection in between FCM inspections. Other factors that may impact frequency of inspections are Item 29, ADT; Item 70, Posting; Item 64, Operating Rating; and all items under Structure Type and Materials.

Inspection Procedures – Load Rating (23 CFR 650.313, c)

Bridges are to be load rated in accordance with the FHWA Policy Memorandum on Bridge Load Ratings for the National Bridge Inventory, dated November 5, 1993 and FHWA Policy Memorandum on Bridge Load Ratings for the National Bridge Inventory, dated October 30, 2006. Item 64, Operating Rating; and Item 66, Inventory Rating; will need to be updated accordingly upon completion of the new load rating capacity calculations. Computations shall be performed based on items found during the most recent field inspection. (See Attachment J to this IM)

At the discretion of the Program Manager, Team Leader, or Load Rater, the bridge may be re-rated to reflect changes in condition, method of analysis used, or changes in acceptable load rating methodologies. The re-rating may be justified without changes in the condition codes of Item 58, Deck; Item 59, Superstructure; or Item 60, Substructure. A new Bridge Load Rating Report form will need to be generated in SIIMS and the form certified by a Professional Engineer, licensed in the State of Iowa, when the controlling member changes or the controlling capacity is reduced.

Procedures for Rating Standard Bridges

The following procedure should be utilized for determining the load ratings of standard bridges that have been rated by the Iowa Highway Research Board Project, HR-239. There are currently 4 phases of the report available for different standard bridge designs (Load Rating for Standard Bridges (1982), Load Rating for Secondary Bridges (1991), Load Rating for Standard Bridges, Phase III (1998), and Load Rating for Standard Bridges, Phase IV (2008)).

1. Identify the standard bridge used. Refer to project plans, if available, in the bridge file to determine the version of the standard utilized. Some standards have multiple versions due to minor revisions.

2. Item 27, Year Built, is a good indicator of which standard version was used, if you are unable to locate the original plans. Some verification may be necessary in the field to determine exactly which version was utilized.

3. Review the applied dead load to determine if it matches the standard rating assumptions.

4. The operating and inventory ratings in the summary for each standard bridge are coded as an HS rating. This is NOT what should be coded on Items 64, Operating Rating, and Item 66, Inventory Rating, on the SI&A form. These numbers shall be converted to a tonnage based on a 36 ton truck.

   The HS number shall be multiplied by the ratio of 36 tons/20 tons = 1.8 and this number recorded on the SI&A in Items 64, Operating Rating, and Item 66, Inventory Rating. For example, if the operating and inventory ratings are listed as HS 32.0 and HS 23.3 respectively; then Item 64, Operating Rating,

should be coded 57.6 (32.0 tons x 1.8 = 57.6 tons) and Item 66, Inventory Rating, should be coded 41.9 (23.3 tons x 1.8 = 41.9 tons).

5. Some of the HR-239 reports include detailed computations for review of the critical and non-critical elements. These computations can be adjusted when changes to the dead load conditions are encountered or section loss in structural elements are noted.

6. Some of the standard bridges have restrictions to the number of vehicles that may be on the bridge at one time even if the roadway will accommodate more than one vehicle. If bridges are rated using one lane loading these bridges shall be posted accordingly and Item 41, Posting Status, on the SI&A coded based on the restriction.

The Federal Government instituted a policy to use only metric units for all measurement. Therefore, FHWA requires all National Bridge Inventory data to be in metric units. The Iowa DOT has chosen to use English units instead of metric. SIIMS was developed using English units for all measurements; including, but not exclusive to, vertical and horizontal clearances, deck widths, bridge length, and Inventory and Operating ratings. These English values will be converted to metric units by SIIMS for the annual National Bridge Inventory submittal.

The Inventory, Operating, and Posting ratings are typically governed by superstructure elements; and in some cases, deck elements. Further analysis may be necessary to determine the capacity if significant changes in condition or applied dead load are noted based on the current conditions. Substructures should be reviewed for deterioration and rated, if necessary. Section loss should be reviewed and losses considered in adjustments to the original ratings.

Load Factor Rating (LFR) Requirements

Bridges are to be load rated in accordance with the FHWA Policy Memorandum on Bridge Load Ratings for the National Bridge Inventory, dated November 5, 1993, for all bridges constructed, replaced, or rehabilitated since January 1, 1994. Bridges in this category shall be rated by load factor methods.

These ratings are required for the HS ratings Items 64, Operating Rating, and Item 66, Inventory Rating, on the SI&A. The bridge owner may elect to use Load Factor Rating (LFR), Allowable Stress Rating (ASR), or Load Resistance Factor Rating (LRFR) to establish load limits for purposes of load posting.

Bridges built or rehabilitated since January 1, 1994, falling into the following categories shall be rated by load factor methods:

1. Bridges constructed or replaced with the following materials:

   a. Steel produced in 1936 (33 ksi or better) or after.
   b. Prestressed concrete.
   c. Reinforced concrete.

2. Bridges that undergo major rehabilitation or repairs.

3. Bridges designed with the Load Resistance Factor Design (LRFD) method prior to October 1, 2010, shall be rated with LRFR or LFR method. Bridges designed after October 1, 2010, shall be rated LRFR.

The following material types do not require LFR analysis and may be analyzed using ASR:

1. Masonry including stone, concrete block, or clay brick.

2. Bridges constructed with timber and designed prior to October 1, 2010.

3. Rolled steel produced prior to 1936 (30 ksi or less).

Bridge Load Rating Report

A Bridge Load Rating Report has been developed to be included in each bridge file to help identify the critical elements for the capacity rating of the structure and for certification of the ratings by a Professional Engineer, licensed in the State of Iowa.

1. All rating calculations shall be certified by a Professional Engineer, licensed in the State of Iowa, and summarized on the Bridge Load Rating Report in SIIMS.

2. The Bridge Load Rating Report shall be reviewed by the Program Manager or Team Leader to ensure that it indicates the critical element, the operating and inventory ratings and the method of analysis used to determine the rating capacity of the bridge.

3. Rating calculations for standard bridges shall be reviewed using the Load Rating Evaluation form (see Attachment J) by a Professional Engineer, licensed in the State of Iowa, to verify the ratings are still applicable under the current condition ratings and applied loads of the bridge, and be summarized on the Bridge Load Rating Report. For standard bridges the Controlling Element and Location fields are not required to be completed.

4. If a Bridge Load Rating Report has been previously completed, existing ratings shall be reviewed with the critical elements being determined from available file information and accepted by a Professional Engineer, licensed in the State of Iowa. Recertification is not required for existing computations included in the file that are deemed reasonable based on the present condition of the structure (see Attachment J to this IM).

5. Re-ratings needed due to reasons listed in the Load Rating Evaluation Form (see Attachment J to this IM) will need to be certified if the element re-rated becomes the critical element and controls the capacity of the structure.

6. Completing the Posting Table on the Bridge Load Rating Report is not required if posting is not required.

Culverts

This section is under construction and will be added at a later date.

Posting

All bridges shall be rated for the following vehicles:

1. Type 4
2. 3S3
3. 3-3

Note: if SU7 vehicles are using a bridge, the bridge should also be rated for the SU7 vehicle.

All bridges with continuous spans or simple span lengths of 100 feet or greater should also be rated for:

1. 3S3B
2. 4S3

Diagrams of the Iowa Legal Trucks are in Attachment K to this IM. The SU7 vehicle configuration can be found in the First Edition of the 2008 AASHTO Manual for Bridge Evaluation with the 2010 versions.

Posting signs should limit all vehicles as efficiently as possible. Posting for a single gross weight limit, maximum axle weight limit, or both are the most enforceable means of restricting vehicles. Any method described in the Manual for Uniform Traffic Control Devises (MUTCD) is appropriate. Using the signs in the MUTCD with pictorial images of vehicles is allowed as long as it is clearly understood that the number of axles shown on any one vehicle could be literally interpreted if/when a violation is taken to court.

Bridges that have adequate capacity of legal vehicles up to 40 tons, but do not have adequate capacity for legal vehicles over 40 tons should be posted for a maximum gross limit of 40 tons regardless of the allowable limit calculated. This eliminates confusion about any permit vehicles that are within the 40 to 48 ton range.

Bridges do not need to be posted for loads that are annual permit loads. Bridges that commonly carry vehicles that fall under the annual permit types should be documented in SIIMS so when a permit request is made these bridges can be included on the permit as embargoed for that vehicle.

Item 70, Posting, should be calculated using the most restrictive legal truck. The most restrictive truck will be the one with the lowest Rating Factor (RF). 1.0 – RF = % below legal load. Use this % to determine which coding, between 0 and 5, should be entered into Item 70, Posting. When Item 70, Posting, is equal to 4 or less, posting the bridge for the appropriate restriction is required. Item 41, Posting Status, shall be coded for the required restriction. The rating method for Item 70, Posting, does not have to be the same method used for Item 64, Operating Ratings, and Item 66, Inventory Rating. If a bridge is re-rated for Item 64, Operating Rating, and Item 66, Inventory Rating using the LFR or LRFR methods, the posting limits do not have to be re-calculated by these methods.

Advanced Posting

Bridges shall have advance load postings at the last available location to avoid crossing an embargoed structure by using an alternative route or turning around. The signs shall be readily visible and installed in accordance with the MUTCD.

When bridges are clearly visible and signs legible from the advance intersection, both advanced warning signs and signing at the bridge site are not required. The signing located at the bridge site will be sufficient to warn oncoming traffic.

Advance warning signs that restrict the bridge to one lane or limits the number of vehicles on the structure at one time shall also be located far enough in advance of the structure to allow the traffic to slow down prior to crossing the bridge along with oncoming traffic.

Overload or Superload Permitting

The bridge owner shall review requests for overload crossings of their bridges to minimize damage, ensure public safety, and protect the integrity of the local infrastructure.

1. The bridge files shall be reviewed and computations completed as required to determine if the specific overload will cause overstress to the structure.

2. Permit requests and approvals shall be kept on record for documentation. Special requirements such as reduction of speed, centering on the roadway, elimination of braking, and other restrictions should be noted on the permit.

3. The bridge owner has the right to be compensated for costs associated with the review for the overload permit by the individual/company requesting the permit as per Iowa Code 321E.14, Fees for Permits.

4. Any request can be denied if it is determined the overload will be detrimental to the public facility.

5. Bridges may be evaluated for Routine Permit Trucks (see Attachment M). If the bridge does not have the capacity to carry one or more of these trucks, when center-lined at 5 mph, the inadequacy can be recorded on the Load Rating Bridge Report (see Attachment J).

Inspection Procedures - Records (23 CFR 650.313, d)

Bridge owners are required to maintain a complete, accurate, and current record of each bridge under their jurisdiction, either electronically or hard copy, as per the American Association of State Highway and Transportation Officials Manual for Bridge Evaluation (AASHTO Manual). The components of a complete bridge

record are listed in the AASHTO Manual. Many of the items listed will be included in SIIMS for each bridge. Bridge owners are encouraged to include electronic copies of these items in SIIMS as soon as possible.

The following list of items shall not to be considered in lieu of the requirements in the AASHTO Manual. All of the items in the AASHTO Manual will not be available for every bridge structure; therefore, the items listed below should be included in each bridge file as a minimum. However, any and all items addressed in the AASHTO Manual should be included in the bridge files when available.

Bridge Plans

Plans for bridges are not required to be in the file folder; however, they are required to be readily available to the bridge owner, Program Manager, or Team Leader at all times. Plans for bridges let after January 1, 2011, shall be included in SIIMS. Bridge owners are encouraged to scan relevant plan sheets for bridges let prior to January 1, 2011, and include them in SIIMS.

Repair Plans

Plans for bridge repair are not required to be in the file folder; however, they are required to be readily available to the bridge owner, Program Manager, or Team Leader at all times. Plans for bridges let after January 1, 2011, shall be included in SIIMS. Bridge owners are encouraged to scan relevant plan sheets for bridges let prior to January 1, 2011, and include them in SIIMS.

Photographs

A road view and a side view of the bridge structure are the minimum requirement. Structures with Item 58, Deck; Item 59, Superstructure; Item 60, Substructure; Item 61, Channel / Channel Protection; and Item 61, Culvert coding of 4 or less are required to have photographs of the deficiency in the bridge folder or scanned into SIIMS. Structures that have had no changes from the previous inspection do not require updated photographs. Photographs will be required in SIIMS on January 1, 2013.

Scour Evaluation Data

Any scour evaluation documentation is required to be in the file folder or scanned into SIIMS, to include any Level A scour analysis worksheets (see Attachment A to this IM), Level B scour flowcharts (see Attachment B to this IM), or Level C HEC 18 calculations. Bridge owners or Program Managers are required to indicate the level of scour analysis completed using the check boxes on the Channel/Channel Protection tab in SIIMS. POAs (see Attachment C to this IM) are required to be in the file folder or scanned into SIIMS and indicated on the Channel & Channel Protection form. Scour analysis worksheets and POAs will be required in SIIMS on January 1, 2013.

Channel Cross Section

A channel cross section on the upstream side of the bridge is required to be a part of the bridge record. A standard Channel Cross Section form has been incorporated into SIIMS. Each bridge structure is required to have a data point at the top of bank, toe of bank, thalweg, and each substructure unit. The Channel Cross Sections are to be updated every 4 years for natural waterways and 10 years for drainage ditches controlled by a drainage district in SIIMS unless conditions at the bridge warrant more frequent monitoring. The Channel Cross Section will be required in SIIMS on January 1, 2013.

Local Agency Field Data Collection Form

The Local Agency Field Data Collection form will be completed and stored in SIIMS.

Structure Inventory and Appraisal Forms (SI&A)

The SI&A forms will be completed and stored in SIIMS.

Load Rating Calculations

The bridge record is required to include a complete record of the calculations of the bridges load carrying capacity. A standard Bridge Load Rating Report has been incorporated into SIIMS and is required to be

completed for each bridge structure by January 1, 2013. The load rating calculations are required to be signed by a Professional Engineer, licensed in the State of Iowa. Electronic signatures for the forms in SIIMS are not required, but a signed copy of the load rating calculations is required to be in the bridge file folder. Bridge owners are encouraged to have an electronic scanned copy of the signed Bridge Load Rating form included in SIIMS.

Load Rating Evaluation Form

The purpose of the Load Rating Evaluation Form (see Attachment J to this IM) is to provide the Program Manager with a checklist of items to determine if the condition of the bridge has changed since the most recent load rating calculations were completed. The Program Manager signing this form is not confirming that the load rating calculations are correct, only that the condition of the bridge has not changed. If any of the items on the form indicate that the condition of the bridge has changed since the most recent load rating calculations, then re-rating the structure for load carrying capacity is required. Any load rating evaluation documentation is required to be in the file folder or scanned into SIIMS, including the Load Rating Evaluation form.

Critical Findings

A standard Critical Finding report form has been incorporated into SIIMS. The completed report is to be filed in SIIMS.

Critical Features

FC and scour critical elements are addressed in SIIMS.

Special Inspection Equipment

The list of specialized equipment and any additional requirements to complete the bridge inspection is included in SIIMS.

QC Office Review Form

All bridge inspections will be required to have a QC Form completed by the Program Manager before the inspection is approved. There is a standard QC Form in SIIMS, which will be required to be completed in SIIMS for each inspection.

Inspection Procedures – Master Lists (23 CFR 650.313, e)

A master list shall be kept which identifies an agency's FC bridges, the bridges requiring underwater inspection, scour critical bridges, unknown foundations, and bridges that are load posted. Additionally, it is recommended that a map be prepared showing each of these bridges for easy reference.

The master list can be generated by selecting the Manager side of SIIMS and running the report for FC bridges, underwater inspections, scour critical bridges, unknown foundations, and bridges that are load posted.

Fracture Critical (FC) Bridges

The following information shall be kept as part of the inspection records for each FC bridge.

1. A drawing of the bridge showing the location of all FCMs.

2. The inspection frequency and procedures that are necessary to inspect each FCM within arm's reach. The procedure may include equipment required (i.e. climbing equipment, ladder, snooper truck) or access methods (i.e. ground access, walk on lower chord) used to inspect the member.

Underwater Inspections

The following information shall be kept as part of the inspection records for each bridge requiring underwater inspection.

1. The location of all elements requiring an underwater inspection.

2. The inspection frequency and procedures necessary to inspect each element. The procedure may include equipment required or access methods used to inspect the member.

Scour Critical Bridges

The following information shall be kept as part of the inspection records for each bridge determined to be scour critical or with unknown foundations. Item 113, Scour Critical, shall be coded as 2 or 3.

1. POA

   The POA includes a specific plan for monitoring, inspecting, or closure of scour critical bridges during and after a significant flood event. The level of flooding that triggers the POA is determined and listed within the POA document. A Team Leader or a Professional Engineer, licensed in the State of Iowa, shall inspect a bridge before it may be reopened. (See Attachment C to this IM for an example)

2. Scour Analysis Procedures

   The analysis used to determine the Item 113, Scour Critical, coding shall be included in the inspection file for each bridge as applicable. This may include a Level A, B, or C scour evaluation (see Attachment A and Attachment B to this IM).

   If a bridge has been designed for scour, a computed scour depth notation shall be shown on the plans or included in the inspection file.

3. Scour Inspection Frequency

   All bridges should be monitored for changes that may affect the scour rating at the routine inspection interval.

   Review Level A Bridge Scour Stability Worksheets (see Attachment A to this IM) and upstream channel cross section to determine scour rating.

New and reconstructed bridges shall be designed to resist scour in accordance with HEC 18, as required by AASHTO Bridge Design Specifications and FHWA Technical Advisory, Evaluating Bridges for Scour, dated October 28, 1991.

Unknown Foundations

The following information shall be kept as part of the inspection records for each bridge with unknown foundations.

1. A POA for monitoring bridges with unknown foundations should be developed and implemented to reduce the risk to users from a bridge failure during and immediately after a flood event (see HEC 23). Also, the use of risk assessment, standard design practices, and engineering judgment can be used to reduce the risk of scour induced failures.

2. Use Attachment G and Attachment H to this IM to evaluate the bridge according to the following procedures:

   A. Use the Procedural Flowchart (see Attachment G to this IM) to determine if the foundation type and depth can be determined. If not, then go to Step B.

B. Complete the Risk Assessment Worksheet (see Attachment G to this IM) utilizing the USGS Hydrologic Region (see Attachment H to this IM) information provided and the SI&A form. Determined the risk category based on the point totals and go to Step C3.

C. Utilize the appropriate Risk Category Flowchart to determine if the structure requires a plan of action. If so, refer to Attachment G to this IM for additional guidance on developing the appropriate plan of action.

Bridge owners are cautioned that simply developing a POA for each bridge with an unknown foundation without first making every effort to determine the foundation (by discovery or inference) may not be advisable. The personnel required to implement POA's for a large number of bridges during a widespread rainfall event may overwhelm staff.

Load Posting

Maintain a list of posted bridge with weight limits for each bridge. Additionally it is recommended that a map be prepared showing the locations of these bridges.

Inspection Procedures – Quality Control (QC) and Quality Assurance (QA) (23 CFR 650.313, g)

Quality Control (QC) Program

It is the Program Manager's responsibility to ensure the following:

1. The "Monthly Notifications" are reviewed to identify any bridges that have not been inspected within the specified frequency or are not in compliance with load posting requirements.

2. SIIMS is used to document each inspection, including but not limited to the following:

   a. Local Agency Field Data Collection Forms in SIIMS are completed.
   b. The QC Form in SIIMS is completed subsequent to each inspection.
   c. The Supplemental Inspection Information tab is completed in SIIMS for each bridge.

3. Master lists are maintained as required in the Inspection Procedures-Master List section of this IM.

4. Team Leaders maintain the education/experience/training requirements contained in the Qualifications of Personnel section of this IM.

5. The individual charged with the overall responsibility for load rating bridges is a Professional Engineer, licensed in the State of Iowa.

Quality Assurance (QA) Program

Bridge Record Reviews

A review of the bridge records for LPA's to determine if they contain the minimum items listed in Inspection Procedures – Records section of this IM, will be conducted by the Office of Bridges and Structures utilizing SIIMS on an annual basis for randomly selected LPAs. Additional reviews of the bridge records will be conducted during on site reviews in conjunction with the DOT's annual oversight of the LPAs.

Team Leader Reviews

It is the Program Manager's responsibility to ensure the following:

1. Team Leader Reviews are conducted every 4 years, beginning January 1, 2013.

    a. Independent party review by a Professional Engineer, licensed in the State of Iowa, and qualified as a Team Leader.
    b. Field review of inspection data for 10 bridges inspected during the past 12 months. The bridges selected shall include, but not limited to, predominant bridge types inspected and bridges with lower sufficiency ratings. The bridges selected shall include some bridges with Item 58, Deck; Item 59, Superstructure; Item 60, Substructure; Item 62, Culvert; or Item 70, Posting; rated 4 or less (if available for the bridges inspected by the Team Leader).
    c. Reviewer accompanies the Team Leader during the inspection of 2 of the 10 selected bridges.
    d. Quality Assurance Field Review Worksheet (Attachment L of this IM) completed for each bridge inspected.
    e. Verification of the validity of information provided by an individual to obtain approval to utilize SIIMS as a Team Leader.
    f. Documentation that the Team Leader has completed the Bridge Inspector Refresher Training Course and, if needed, Fracture Critical Inspection Techniques for Steel Bridges Training Course.

    The findings of the Team Leader Reviews shall be reported to the Iowa DOT's Office of Bridges and Structures. The report shall be stamped and signed by the reviewer. If there are negative findings regarding the Team Leader, the report shall include corrective recommendations, or actions taken, to resolve those findings.

2. Disqualification and re-instatement of Team Leaders

    The Program Manager shall disqualify a Team Leader if they have provided invalid information to obtain approval to utilize SIIMS as a Team Leader or have not completed the required training required by the Qualification of Personnel section of this IM. The disqualification shall be as follows:

    a. Invalid information willfully provided to obtain approval to utilize SIIMS as a Team Leader: Permanent disqualification as a Team Leader.

    b. Violation of the Qualification of Personnel section of this IM: Disqualification as a Team Leader for 1 year. After the disqualification period, an individual can be re-instated when they meet the requirements of Qualification of Personnel section of this IM.

Load Rating Reviews

A Load Rating Review of 10 bridges is conducted every 4 years, except as noted below:

1. Each bridge owner shall have the load rating calculations reviewed by a Professional Engineer, licensed in the State of Iowa. The reviewing Professional Engineer shall not review their own rating calculations.
2. If a load rating differs by more than 15%, the reviewing engineer and the engineer being reviewed must come to a consensus as to what the rating should be.
3. Bridge owners with less than 10 bridges shall have all load ratings reviewed every 8 years.

The findings of the Load Rating Review shall be reported to the bridge owner. The report shall be stamped and signed by the reviewing engineer.

If there are negative findings regarding the Load Rating Review, the report shall include corrective recommendations or actions taken to resolve these findings.

Inspection Procedures – Critical Findings (23 CFR 650.313, h)

Purpose

The purpose of the Critical Finding Bridge Report in SIIMS is to ensure that serious bridge damages or defects are reported, the necessary notifications are made to the bridge owner by the Program Manager or Team Leader, and that proper and timely action is taken to ensure the safety of the traveling public. This process alerts the bridge owner so damage or deterioration can be repaired in a proper and timely manner and that the damage and repairs are documented.

The Iowa DOT will perform a quarterly query in SIIMS for Critical Finding Reports and submit the summary report to FHWA; therefore, it is imperative that the LPA's complete the Critical Finding Report in SIIMS as per this I.M.

Criteria

Conditions that require the filing of a critical finding report shall include, but are not limited to one of the following:

1. a partial or complete bridge collapse,
2. structural or other defects posing a definite and immediate public safety hazard,
3. a condition rating of 2 or less for any of the following bridge items:

    a. Item 58, Deck,
    b. Item 59, Superstructure,
    c. Item 60, Substructure,
    d. Item 61, Channel/Channel Protection,
    e. Item 61, Culverts, or
    f. Item 113, Scour Critical.

In cases where it is determined that the bridge could be used safely at a lower posted load limit, the bridge may remain open if it is immediately posted at the reduced limit.

Procedure for County/City Bridges

1. The individual discovering the critical finding shall:

    a. Immediately report the finding to the responsible local official, who may notify law enforcement or maintenance personnel to close the bridge.

    b. Complete Part I of the critical finding report and submit a copy to the responsible local official within 48 hours of the finding.

2. The responsible local official shall

    a. Take action to ensure the safety of the traveling public.

    b. Complete Part II of the critical finding report within 5 days of the finding.

3. When final action is taken to resolve the critical finding issue, the responsible local official shall complete Parts III & IV of the critical finding report as necessary.

4. Before a closed bridge may be reopened to traffic, a Professional Engineer, licensed in State of Iowa, shall approve any structural repairs, the bridge shall be load rated, and the bridge shall be inspected by a Team Leader.

5. If final action is not taken within 6 months of the initial report of the critical finding, the responsible official shall complete Part III, indicating the current status of the bridge.

Inventory (23 CFR 650.315,

Iowa DOT maintains an inventory of all bridges subject to NBIS. This inventory is available for viewing and updating by local agencies in SIIMS. All local agencies shall enter their inventory data updates into the database using this access system. User names and passwords are available by request from the State of Iowa Enterprise A & A System. Access to SIIMS will be approved and granted by the Iowa DOT Office of Bridges and Structures, Bridge Maintenance and Inspection (BM&I) Unit.

For all types of bridge inspections, the inspection dates and condition codes shall be entered into SIIMS within 30 days of the field inspection.

Final approval of inspection reports, including load ratings if necessary, shall be completed in SIIMS within 90 days of the field inspection.

BRIDGE SCOUR STABILITY WORKSHEET
Level A Evaluation

Name: _____ Date: _____

Bridge ID: _____ County / City: _____

FHWA No.: _____ ADT: _____

Main Span Materials & Design (Item 43): _____

Location: _____

Bridges with observed major bridge threatening scour problems should be considered scour critical and SI&A item #113 should be coded 0, 1, 2, or 3. If bridge threatening scour is not observed then this form is intended to evaluate whether a bridge can be determined to be scour critical, stable, or whether more review is necessary. For each numbered question enter the number of points into the blank at the right. If more than one answer applies, use the answer with the highest number of points. Each question should be answered.

	POINTS	POINTS GIVEN
STRUCTURE		
1. Category:		
A. Single span, pile foundations, and spread footing.	4	
B. Multi-span, piers on piling, and continuous and non-continuous superstructure.	4	
C. Multi-span, piers on spread footings, and continuous and non-continuous superstructure.	8	
D. Structure is an over flow bridge.	8	_____
2. Number of piers in the main channel:		
A. No piers in main channel.	0	
B. One pier.	1	
C. Two to four piers.	2	
D. Five or more piers.	4	_____
3. Pier foundation:		
A. No piers or all piers above flood flows.	0	
B. Spread foundations:		
1) Spread on erosion resistant bedrock	0	
2) Spread on erodible rock (shale)	2	
3) Unknown foundation type	5	
4) Spread on soil or gravel	6	
C. Pile bents, footing/piling or caisson, depth below existing stream bed:		
1) Pile depth greater than 40’	0	
2) Pile depth 20’ to 40’	2	
3) Unknown pile depth	3	
4) Pile depth less than 20’	5	_____

4. Abutment foundation:

A. Abutments located above flood flows.	0	
B. Spread Foundations:		
1) Spread on erosion resistant bedrock	0	
2) Spread on erodible rock (shale)	2	
3) Unknown foundation type	4	
4) Spread on soil or gravel	6	
C. Pile Bents, footing/piling or caisson, depth below existing stream bed:		
1) Pile depth greater than 40’	0	
2) Pile depth 20’ to 40’	1	
3) Unknown pile depth	2	
4) Pile depth less than 20’	2	
D. High Timber Abutment.	6	_____

5. Road low point elevation vs. low member submergence:

A. Submergence of low member or overtopping of road low point is improbable.	0	
B. Low member elevation is above road low point, submergence possible.	1	
C. Low member elevation is below road low point, submergence possible.	4	_____

HISTORY

6. Observed scour at piers:

A. No piers or all piers above flood flows.	0	
B. Spread foundations:		
1) No scour hole	0	
2) Scour hole above top of footing	2	
3) Scour hole within limits of footing	8	
4) No measurement taken at piers	7	
C. Footing/piling foundations:		
1) No scour hole	0	
2) Scour hole above top of footing	2	
3) Scour hole within limits of footing	4	
4) Piling exposed	6	
5) No measurement taken at piers	5	
D. Pile bent foundations:		
1) No scour hole	0	
2) Less than 5’ scour	2	
3) More than 5’ scour	4	
4) No measurement taken at piers	3	_____

7. Abutment type and condition:

A. Stub/Integral abutments, effective berm slope:		
1) 2:1 or flatter	0	
2) Steeper than 2:1 but flatter than 1.5:1	3	
3) 1.5:1 or steeper	6	
B. High abutments, depth of footings or backwall planking below stream bed:		
1) More than 5 feet	0	
2) 0 to 5 feet	4	
3) Footing is above stream bed	8	
C. Abutment on bedrock – no deficiencies.	0	_____

8. Abutment protection:

A. No protection necessary.	0	
B. Wingdikes or revetment protection in good condition.	0	
C. Other protection in good condition.	1	
D. Protection condition poor or not provided, but needed.	3	_____

9. Location of abutments compared to top of bank:

A. More than 25 feet away.	0	
B. 5’ to 25’.	2	
C. Less than 5’.	6	
D. Abutment within stream banks.	8	_____

10. Observed scour at abutments:

A. No problems.	0	
B. Minor scour problems.	4	
C. Major scour problems observed in past inspections.	8	_____

11. Observed debris (or ice) lodged against bridge:

A. Remote.	0	
B. Slight Amount of Occasional – every 3 years or more.	3	
C. Frequent – more than once every 3 years.	6	
D. No available information.	4	
E. Moderate to heavy debris or continually present.	8	_____

STREAM GEOMORPHICS

12. Average degradation of stream bed since construction, not including local scour:

A. Less than 4’ or stream aggrading.	0	
B. 4’ to 6’.	2	
C. Greater than 6’.	6	
D. No Comparative cross-sections.	4	_____

13. Observed lateral movement of stream:

A. Stable.	0	
B. Movement, no threats to bridge.	2	
C. Unstable, threatens bridge.	8	
D. No information available.	4	_____

14. Channel bottom material:

A. Bedrock.	0	
B. Boulders and cobbles.	2	
C. Gravel, Sand, Silt, and Clay.	4	_____

15. SI&A Item #61 Channel and Channel Protection:

A. Rated a 6 or more.	0	
B. Rated a 5 or less.	4	_____

SITE GEOMORPHICS

16. Bridge location:

A. Bridge over mainstream, tributary or spillway nearby:		
1) No tributary nearby	0	
2) Tributary downstream within 100 ft	1	
3) Tributary or spillway upstream within 1,000 ft	4	
B. Bridge over tributary, mainstream nearby:		
1) No mainstream within 1,000 feet	0	
2) Mainstream within 1,000 feet	2	
3) Mainstream within 500 feet	4	_____

17. Stream bend within 150 feet of bridge (deflection):

A. 0 to 15 degree bend.	1	
B. 15 to 45 degree bend.	3	
C. 45 to 90 degree bend.	6	_____

18. Alignment of piers to flood flows:

A. No piers or all piers above flood flows.	0	
B. 0 to 5 degrees skew.	1	
C. 5 to 15 degrees skew.	3	
D. 15 to 90 degrees skew.	6	_____

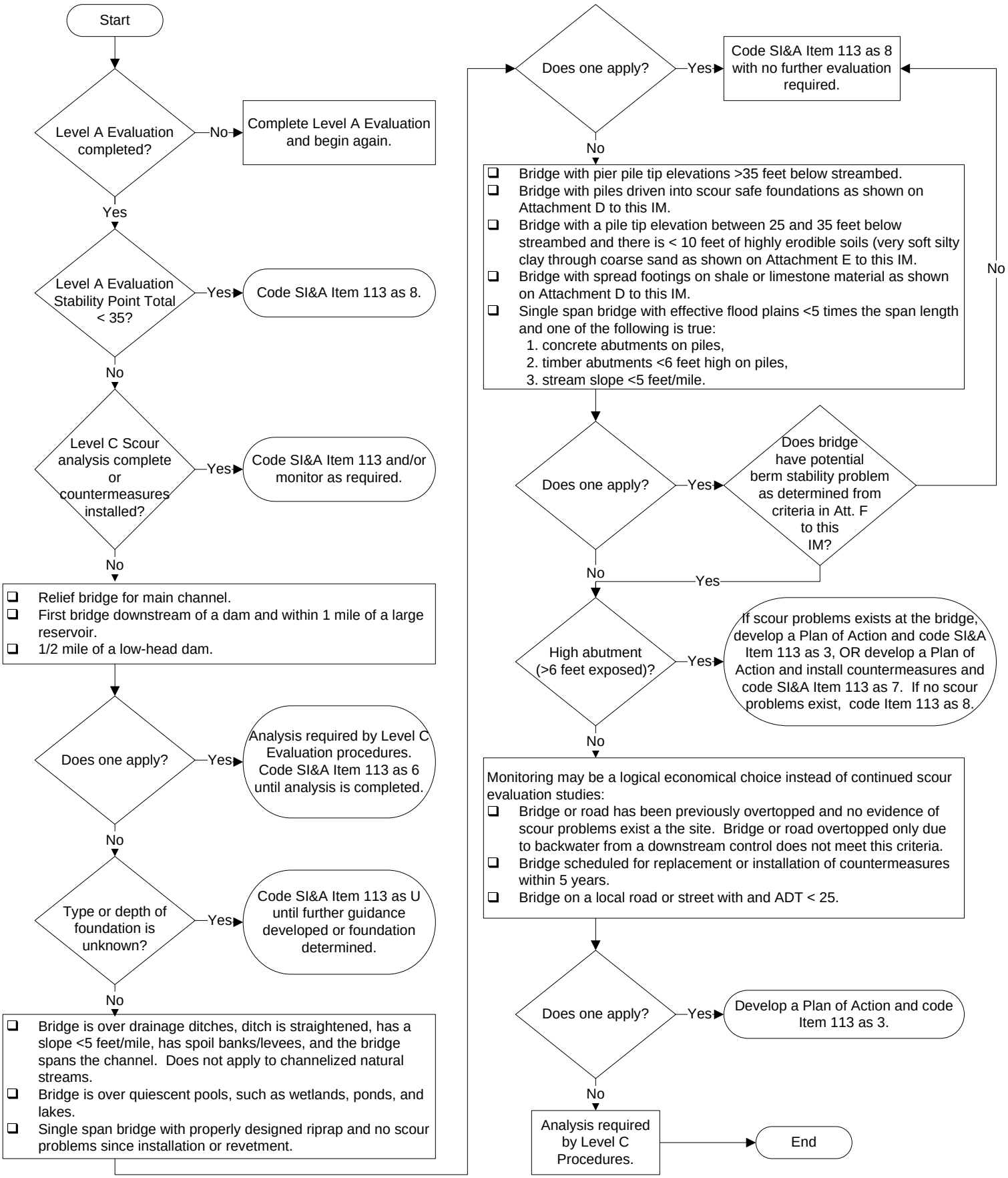
STABILITY TOTAL _____

Bridges with a stability total below 35 points could be considered stable and code SI&A Item 113 as 7 or 8 depending on the particular situation. Bridges with a total greater than 45 for a single span or 55 for a multi-span should be considered scour critical and code SI&A Item 113 as 2 or 3. Bridges coded as scour critical need to be considered for corrective counter measures or monitored closely.

Bridges with a stability total in the 35 to 45 range for single span and 35 to 55 range for multi-span require Intermediate Scour Assessment Procedures Flowchart (see Attachment B to this IM) to be completed.

INTERMEDIATE SCOUR ASSESSMENT PROCEDURES FLOWCHART

Level B Evaluation



Abbreviations / Acronyms:
SI&A = Structural Inventory and Appraisal

SCOUR PLAN OF ACTION (POA)

Name: _____ Date: _____

Bridge ID: _____ County / City: _____

FHWA No.: _____ ADT: _____

Main Span Materials & Design (Item 43): _____

Location: _____

Functional Groups
Functional groups which will be involved in the monitoring process during a flood event are defined as follows:

Local maintenance personnel: (Specify by job title)

This individual will be involved in the process of monitoring the development of flooding conditions, implementing bridge closure plans, general monitoring of bridge condition during floods, and advising the City/County Engineer of bridge closures. Guidelines need to be specified as to when this structure is required to be closed and or monitored during a flood event.

A critical water surface elevation should be determined for closure of the bridge. This could be a conservative elevation that can be calculated from the plans based on 25 or 50 year flood elevation. This elevation can be painted on a pier or abutment so the maintenance personnel can determine if they need to continue monitoring or initiate closure procedures.

Management:

The City/County Engineer or their representative (Specified). This individual will be involved in implementing bridge closure plans and the process of reopening of closed bridges. This individual is the ultimate authority for closing and re-opening bridge structures.

Initiation of Monitoring

Local maintenance personnel (specify by job title) shall initiate monitoring when one of the following events occurs: (these are just examples, list site specific requirements for each scour critical structure)

- A flood watch or warning is announced by the National Weather Service which includes the drainage area tributary to the bridge.
- Heavy rainfall occurs in the vicinity of the drainage area tributary to the bridge.

Reopening Procedures

Details of the criteria required to re-open the structure should be clearly stated. Following the flood event, these structures are required to be inspected by a Professional Engineer, licensed in the State of Iowa, or a Team Leader prior to opening the bridge, to determine if the structure has changed from its pre-flood condition and if any additional follow-up action is required. The POA should list the individual responsible for re-opening a bridge by job title.

Structures that are monitored during a flood event are required to be inspected to by the local maintenance personnel to provide findings to the City/County Engineer to determine if any follow up action is required, i.e. armoring.

SCOUR SAFE FOUNDATIONS FOR SPREAD FOOTINGS OR STEEL PILES

Foundation Material	Depth into Foundation Material
Weathered or broken limestone	>4 feet
Any limestone other than weathered or broken	Any depth
Any shale other than hard (or very firm) shale	>7 feet
Hard (or very firm) shale	Any depth
Very firm glacial clay	>10 feet

HIGHLY ERODIBLE SOILS

(Excerpt from "Driven Pile Foundation Soils Information Chart")

Soil Description	Blow count per foot (N Value)	
Alluvium or Loess	**Mean**	**Range**
Very Soft Silty Clay	1	0-1
Soft Silty Clay	3	2-4
Stiff Silty Clay	6	4-8
Firm Silty Clay	11	7-15
Stiff Silt	6	3-7
Stiff Sandy Silt	6	4-8
Stiff Sandy Clay	6	4-8
Silty Sand	8	3-13
Clayey Sand	13	6-20
Fine Sand	15	8-22
Course Sand	20	12-28

BERM STABILITY CRITERIA

Berm stability should be reviewed for any bridges that exceed the following values:

1) Any berm slope steeper than 1.5:1, or

2) When the road grade to normal stream bed is > 20’ and the effective berm slope (measured from road grade to the edge of stream) is steeper than 2:1, or

3) When the road grade to normal stream bed is < 30’ and the effective berm slope is steeper than 2.5:1.

Abutment berm slopes or high abutments protected by properly designed riprap are considered stable.

GUIDANCE FOR DEVELOPING AND IMPLEMENTING PLANS OF ACTION (POA) FOR BRIDGES WITH UNKNOWN FOUNDATIONS

The National Bridge Inspection Standards (NBIS) regulation, 23 CFR 650.313, requires that bridge owners identify bridges that have Item 113, Scour Critical, coded as 0, 1, 2, or 3; and to prepare a Plan of Action (POA) to monitor known and potential deficiencies. Bridge owners should be working on completing evaluations to determine which bridges over waterways are vulnerable to scour.

A bridge with Item 113, Scour Critical, coded as U represent a unique subset of bridges that were exempted from being evaluated for scour vulnerability due to the lack of a process and guidance that would have allowed bridge owners to determine the necessary foundation characteristics. The FHWA has provided several risk-based methods for assessing bridges with unknown foundations. However, there may still be an inventory of bridges coded U for which a scour evaluation cannot be completed.

Bridge owners should anticipate that any bridge reported with Item 113, Scour Critical, coded U after November 2010 will require development and implementation of a POA, until properly designed countermeasures are installed to protect the bridge foundations or until the bridge is replaced. The Coding Guide currently recommends development and implementation of a POA for existing bridges having a code "U."

FHWA has previously provided guidance for bridge owners on development and implementation of POA's for bridges determined to be scour critical. For bridges with unknown foundations, a bridge owner has two options for development of a POA:

1. A bridge with Item 113, Scour Critical, coded U can simply be changed to a scour critical code (e.g., 3) for the NBI and subjected to a POA as described for scour critical bridges.

2. A bridge with Item 113, Scour Critical, may remain coded U with a POA developed based on a risk assessment and bridge owner defined criteria considering known information about the bridge.

The POA for a bridge with Item 113, Scour Critical, that remains coded U may be different than for a bridge determined to be scour critical. The POA developed should be based on the known information of the bridge and the bridge owner determined risk from scour. The POA for a bridge over waterways with unknown foundations should contain minimum requirements commensurate to the consequences of loss of service of the structure to ensure a reasonable level of safety to the traveling public.

The steps below provide assistance to bridge owners in developing a POA for a bridge with Item 113, Scour Critical, coded U:

STEP 1:
Assess bridges with unknown foundations in accordance with guidance provided in this IM and examples provided on the Unknown Foundations website. For bridges with Item 113, Scour Critical that remains coded U after a risk-based assessment, FHWA recommends that a POA be developed based on the risk categories defined by bridge owners during initial categorization and grouping (e.g. A - High Risk, B - Moderate Risk, C - Low Risk).

STEP 2:
Develop a POA based upon the defined risk category that considers safety to the traveling public and the consequences of loss of service of the structure. The POA may be less detailed than for a scour critical bridge based on the defined risk categories, but it should contain elements that protect users during and after a scour event, and provide a proactive plan for addressing the bridge scour concerns in the future. Examples for lowest and highest risk categories are below.

A. Lowest Risk Categories:

Assumes that the bridge has performed well and has no history of scour related problems.

For bridges considered as low risk, the POA may be as simple as monitoring bridges for scour during routine biennial inspections and after major events.

If scour or a rainfall event has been observed in excess of predetermined monitoring triggers, then the bridge should be considered for an in-depth foundation investigation. Any information on observed or inspected conditions would be identified on the bridge inspection report so that inspectors could monitor the bridge for changes.

B. Moderate Risk Categories:

Assumes that the bridge has performed satisfactorily, but because of bridge owner defined criteria, it has been identified as moderate risk.

For bridges considered moderate risk, the POA may be similar to those for bridges determined to be scour critical. At a minimum, the bridge should be monitored on a more frequent basis than a bridge in a low risk category.

A bridge in this category should be considered for an in-depth foundation investigation if scour or a rainfall event has been observed for at least a magnitude equal to predetermined monitoring triggers. If significant changes in streambed continue to occur, countermeasures should be considered to make the bridge safe from scour and stream instability.

C. Highest Risk Categories:

Assumes that the bridge has performed satisfactorily, but because of bridge owner defined criteria, it has been identified as high risk.

POA may be similar to those for bridges determined to be scour critical. At a minimum, the bridge should be monitored on a more frequent basis than a bridge in a moderate to low risk category. Also, a bridge in this category should be considered for an in-depth foundation investigation if any significant changes in streambed occur, and scheduled for timely design and construction of a new bridge or countermeasures to make the bridge safe from scour and stream instability.

STEP 3:
Coordinate a global action plan for all bridges with Item 113, Scour Critical, coded U within a LPA, whether assessed through this guidance or not. The plan should:

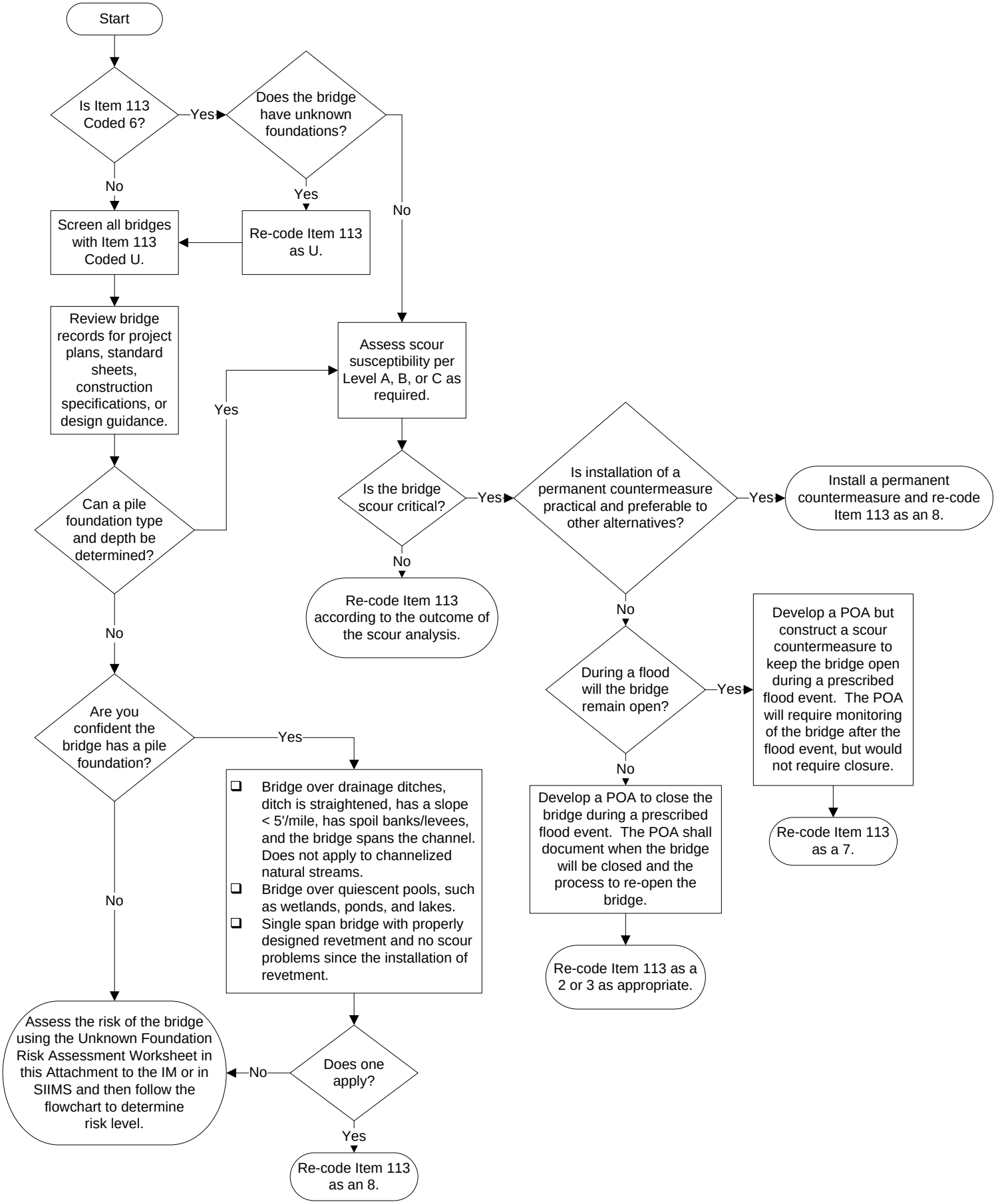
1. Identify the scour critical and unknown foundation bridges;

2. Define major events or monitoring trigger; and

3. Provide information for requesting technical assistance or conducting an in-depth foundation investigation.

Bridge owners should monitor and verify that the process of implementing POAs is working satisfactorily. The global action plan for developing and implementing POAs should be revisited and updated as necessary.

UNKNOWN FOUNDATIONS FLOWCHART



Abbreviations:
POA = Plan of Action

Intentionally left blank

UNKNOWN FOUNDATION RISK ASSESSMENT WORKSHEET

Name: _____ Date: _____

Bridge ID: _____ County / City: _____

FHWA No.: _____ ADT: _____

Main Span Materials & Design (Item 43): _____

Location: _____

For each numbered question enter the number of points into the blank at the right. If more than one answer applies, use the answer with the highest number of points. Each question should be answered. Structures with risk assessment totals equal to or less than 25 points can be considered low risk, 26 to 29 points can be considered medium risk, and greater than or equal to 30 points can be considered high risk.

	POINTS	POINTS GIVEN
1. Superstructure type:		
A. Continuous	2	
B. Multi-span	4	
C. Fracture critical	8	
D. Single span	8	
E. High concrete abutments	10	_____
2. Item 60, Substructure coding:		
A. 7 to 9	1	
B. 5 or 6	2	
C. 1 to 4	3	_____
3. Item 61, Channel/Channel Protection coding:		
A. 7 to 9	1	
B. 5 or 6	2	
C. 1 to 4	3	_____

4. Geomorphology/hydrology:

The USGS publication Water Resource Investigation Report 8704132 defines a Hydrologic Region based on the slope of the topography and has equations that estimate the flood discharge. Utilize the USGS Region map and the drainage for each structure in conjunction with the following guidelines to determine whether a bridge is low, medium, or high risk for this category.

Caution: Within each region there are small watersheds that have topography which produces runoff characteristics of another region. Utilize the region that best represents the area in which the watershed lies.

A. Hydrologic Region 1		
1) < 5 square miles	2	
2) 5 to 30 square miles	4	
3) > 30 square miles	6	_____
B. Hydrologic Region 2		
1) < 15 square miles	2	
2) 15 to 100 square miles	4	
3) > 100 square miles	6	_____
C. Hydrologic Region 3		
1) < 30 square miles	2	
2) 30 to 225 square miles	4	
3) > 225 square miles	6	_____
D. Hydrologic Region 4 and 5		
1) < 100 square miles	2	
2) 100 to 600 square miles	4	
3) > 600 square miles	6	_____

5. Topography:

A. Hydrologic Region 4 and 5	2	
B. Hydrologic Region 3	4	
C. Hydrologic Region 1 and 2	6	_____

6. Item 26, Functional Class:

A. Level B road	1	
B. Local road/minor arterial	2	
C. Farm to Market	3	
D. Urban Arterial	4	_____

7. Item 19, Detour Length:

A. < 4 miles	1	
B. 4 to 10 miles	2	
C. >10 miles	3	_____

8. Item 29, Average Daily Traffic (ADT):

A. < 26	2	
B. 26 to 50	4	
D. > 50	6	_____

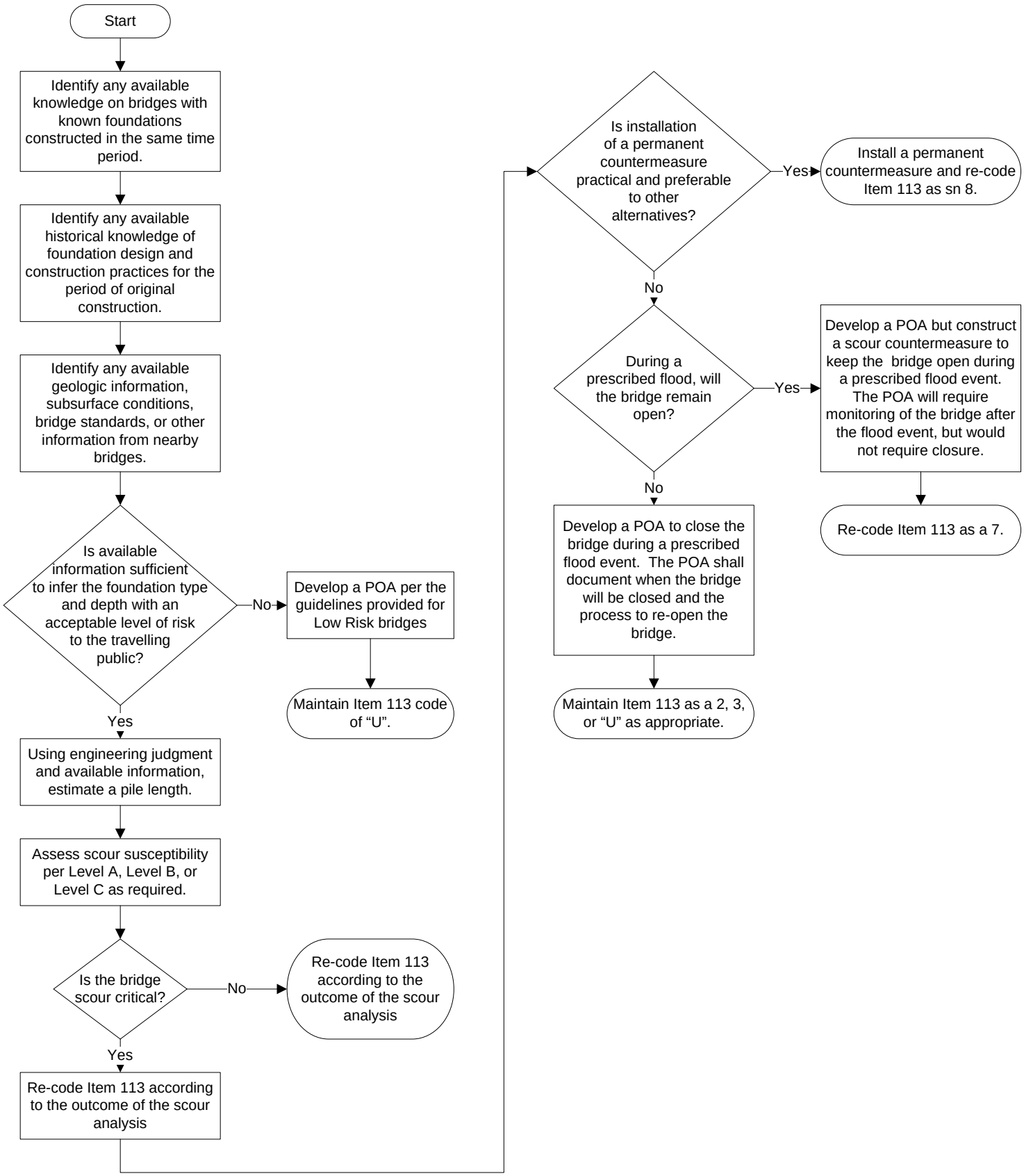
RISK ASSESSMENT TOTAL _____

Secondary Level of Assessment:

Bridge structures with an ADT greater than 50 cannot be considered low risk.

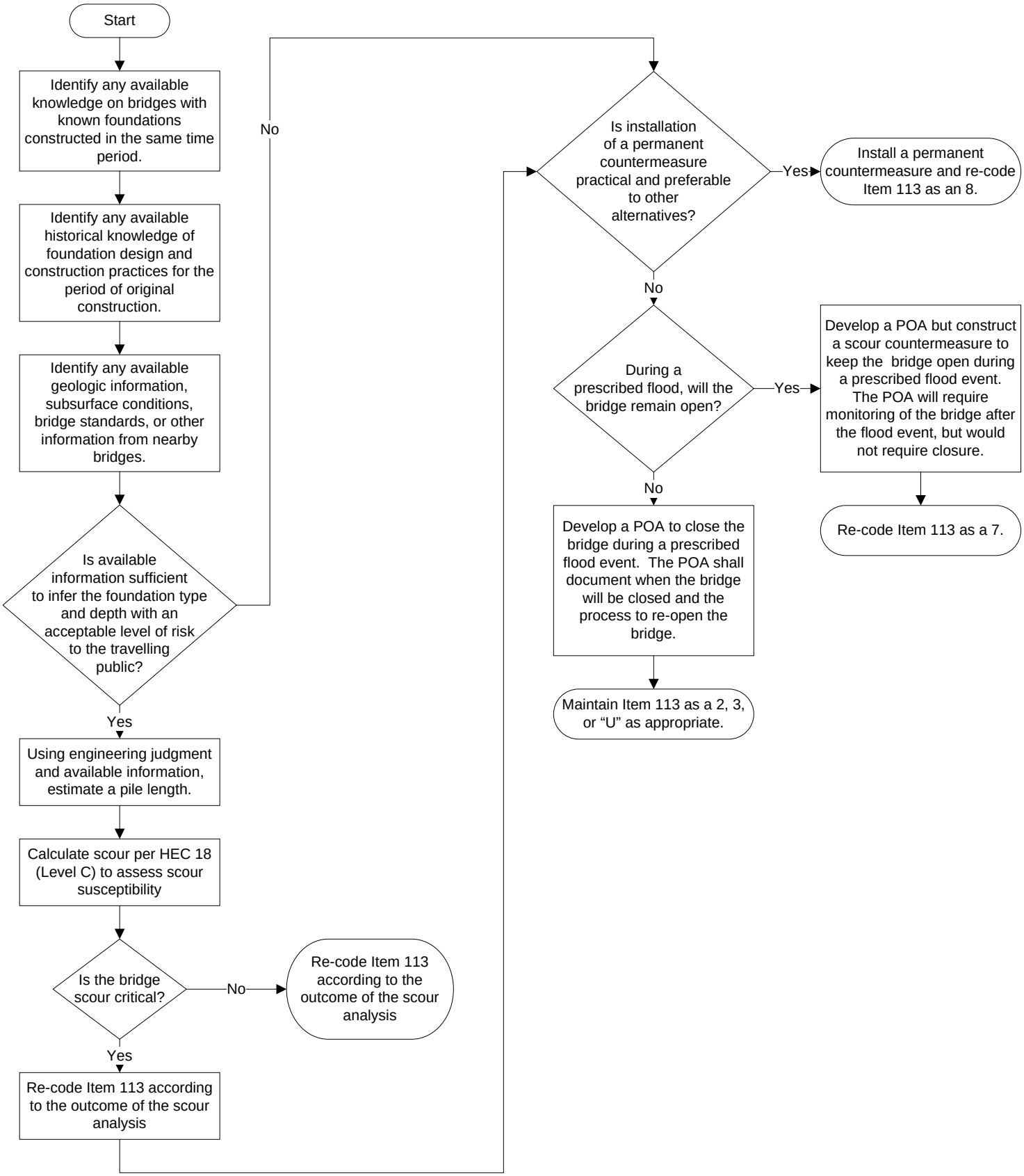
Bridge structures that historically experience roadway overtopping during flood events and have shown no signs of scour may be considered low risk.

UNKNOWN FOUNDATIONS LOW RISK FLOWCHART



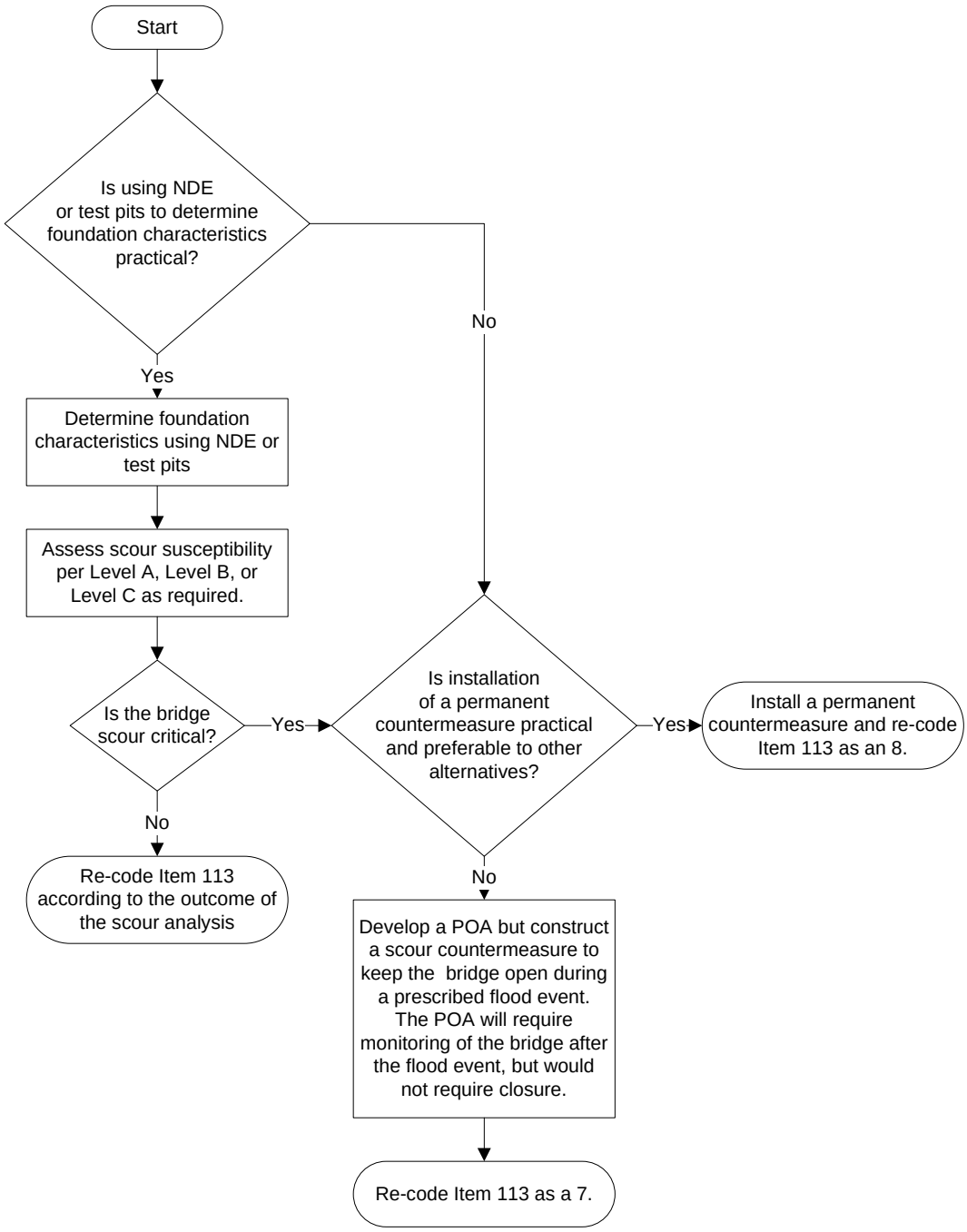
Abbreviations:
POA = Plan of Action

UNKNOWN FOUNDATIONS MODERATE RISK FLOWCHART



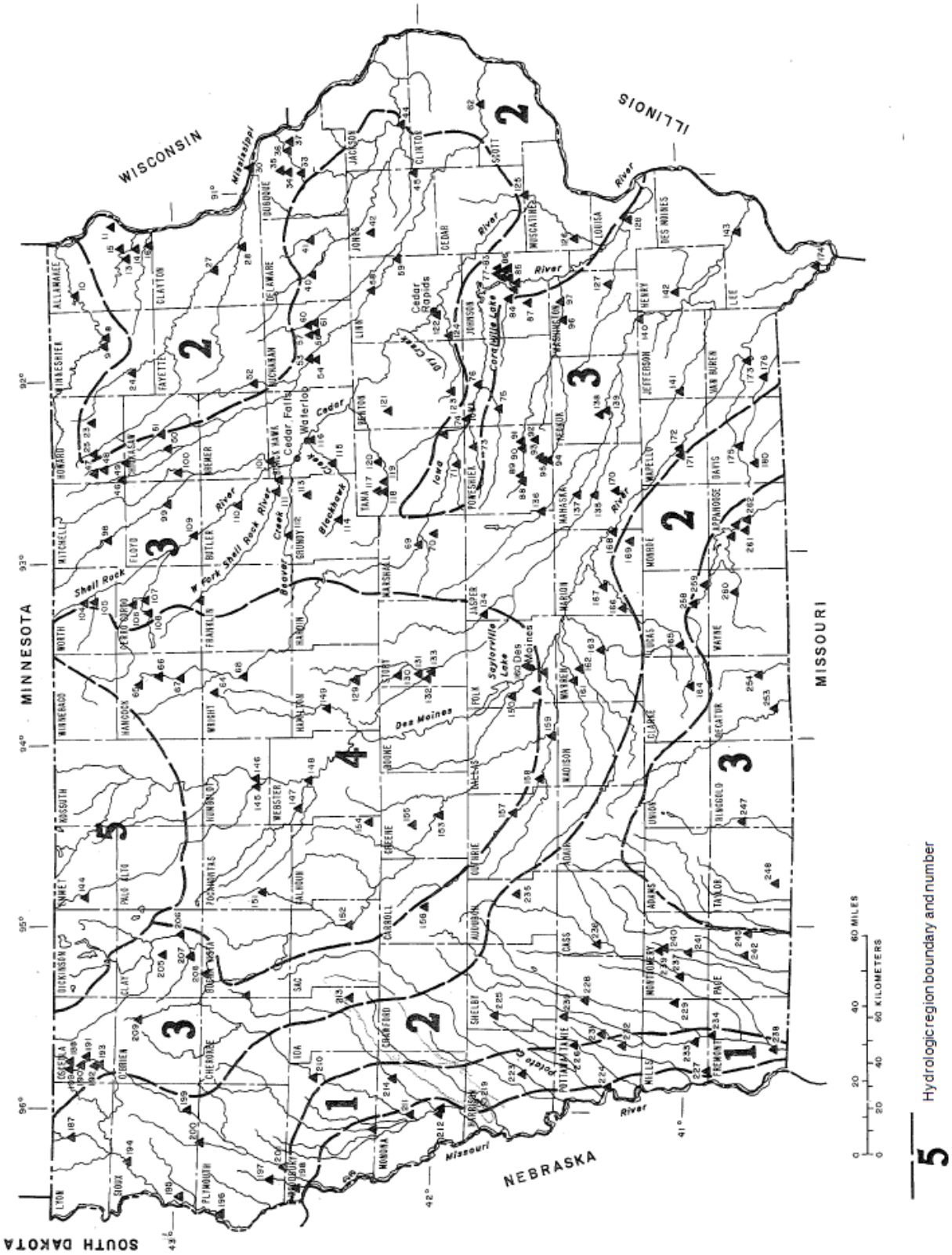
Abbreviations:
POA = Plan of Action

UNKNOWN FOUNDATIONS HIGH RISK FLOWCHART



Abbreviations:
POA = Plan of Action
NDE = Non-distructive Evaluation

USGS Hydrologic Region Map with Region Descriptions



Hydrologic Region 1

Hydrologic region 1 extends north and south along the bluffs that border the Missouri River valley, with limits approximating those of the physiographic area known as the Western Loess Hills (Prior, 1976). The landscape has a corrugated appearance of alternating waves and troughs. Hills are sharp-featured, with narrow broken ridge-crests, intersecting spurs, and steep-sided slopes; the landscape is conducive to rapid runoff. The western border of the region is well defined and easily distinguished on topographic maps and in the field. The eastern border is more difficult to define and merges gradually with the landscape of hydrologic region 2.

Hydrologic Region 2

The bluff area that borders the Mississippi River valley is typical of the landscape in hydrologic region 2. The landscape can vary from rugged to rolling topography, where runoff may be rapid, commonly causing flash flooding. Bluff-like areas are not only located in the vicinity of the Mississippi River, they also are present along the divide between the Mississippi River and Missouri River basins; in parts of the Iowa and Cedar River basins, in areas that border the Western Loess Hills, and in the headwater parts of basins of streams in south-central Iowa.

Hydrologic Region 3

Hydrologic region 3 is the largest hydrologic region. Most of the area in this region is typical of landscapes in Iowa. The topography of this region can be described as steeply to gently rolling hills interspersed with areas of more subdued topography. The area has a well-established drainage system. Physiographically, it covers most of the Iowa Surface, a large part of the Southern Iowa Drift Plain, and the Northwest Iowa Plains (Prior, 1976).

Hydrologic Region 4

This hydrologic region, which is located in west-central Iowa, is characterized by level terrain and a poorly developed drainage system. The region coincides approximately with the southern two-thirds of the Des Moines Lobe. Many clusters of ponds and marshes with no drainage outlets are present in this region. Small streams in level areas are shallow and sluggish.

Hydrologic Region 5

This hydrologic region in north-central Iowa coincides approximately with the northern part of the Des Moines Lobe (Prior, 1976). The magnitude of floods in this region are the smallest per unit area in the State. This is due to the flat topography and flood-attenuating effect of abundant bogs, swales, and circular depressions.

SPECIAL TRAINING, EQUIPMENT, AND ACCESS REQUIREMENTS CHECKLIST

Reviewer: _____ Review Date: _____

Agency: _____

Program Manager: _____ Team Leader: _____

Team Members: _____

Bridge No.:_____ County / City: _____

FHWA No.: _____ Stream: _____

Main Span Materials & Design (Item 43): _____

Location: _____

Special Training	Check if required
Fracture Critical Course	
Underwater Inspection Course	
Climbing / Rigging Training	
Special Equipment	
Survey equipment	
Non-destructive testing equipment	
Underwater inspection equipment	
Air-water jet equipment	
Sand / shot blasting equipment	
Burning / drilling / grinding equipment	
Timber coring drill	
Access	
Ladders / hook ladders	
Special rigging / platforms	
Scaffolding	
Climbers	
Floats	
Bosun chair / repelling	
Catwalk	
Personnel lift	
Bucket truck	
Under bridge inspection vehicle	
Platform truck	

LOAD RATING EVALUATION FORM

Name: _____ Date: _____

Bridge ID: _____ County / City: _____

FHWA No.: _____ ADT: _____

Main Span Materials & Design (Item 43): _____

Location: _____

The purpose of this evaluation form is to determine if the condition and configuration of the structure is still consistent with the load rating calculations that were completed during a previous bridge inspection. If the answer to all of these evaluation items is "No" then recalculation is not required. IF the answer to any of these evaluation items is "Yes", a Professional Engineer, licensed in the State of Iowa, must evaluate if re-calculation of the load ratings for this structure is required. Answer "No" or "Yes" to the following.

	No	Yes
Was the bridge re-rated following this inspection?	_____	_____
If no, answer the following questions. If yes, skip to signature.		
If any of the following criteria are "Yes", the bridge shall be load rated:		
1. The bridge is a new bridge.	_____	_____
2. The bridge has undergone a major rehabilitation that affects the controlling structural element. This may include the deck, superstructure, or substructure elements.	_____	_____
3. If Item 58, Deck; Item 59, Superstructure; Item 60, Substructure; or Item 62, Culvert; coding decreased to 3 or less.	_____	_____
4. If moderate to significant changes to the superstructure dead load has occurred, such as the addition of an overlay or changes of 2 or more inches of overburden such as earth or rock since the previous rating.	_____	_____
5. Changes to lateral support of the beams.	_____	_____
6. If 5 feet or more of scour/erosion has occurred at the foundations due to flooding events or progressive down cutting, the bridge shall be evaluated for structural capacity of the foundations.	_____	_____
If any of the following criteria are "Yes", the bridge shall be considered for re-load rating:		
1. If 58, Deck; Item 59, Superstructure; Item 60, Substructure; or Item 62, Culvert; coding decreased to 4.	_____	_____
2. New information found during the most recent field inspection affects load capacity.	_____	_____
3. New information is determined by additional investigation, testing, or analysis affects load capacity.	_____	_____
4. Item 63 and 65, Rating Method, is coded 5.	_____	_____
Does the bridge need to be re-rated?	_____	_____
If no, sign. If yes, sign this form, then re-rate the bridge and update the Bridge Load Rating Report.		

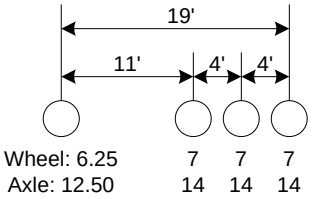
_____ _____

Program Manager signature Printed name of Program Manager

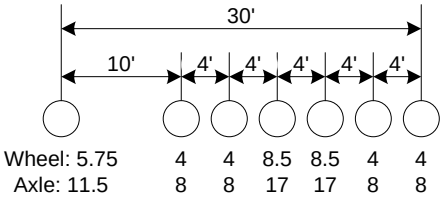
IOWA LEGAL TRUCKS DIAGRAMS

Typical Iowa Legal Truck Types
(Wheel and axle loads are shown in Kips)

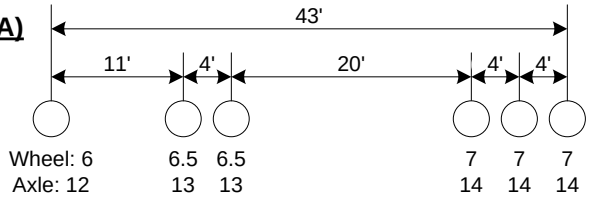
Straight Truck (Type 4)
Total Weight = 54.5 Kips (27.25 Tons)



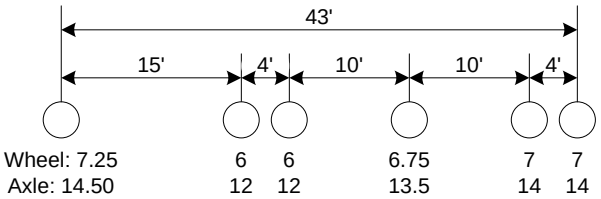
Truck (SU7)
Total Weight = 77.5 Kips (38.75 Tons)



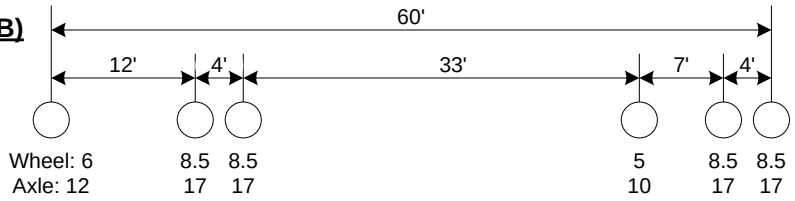
Truck + Semi-trailer (Type 3S3A)
Total Weight = 80 Kips (40 Tons)



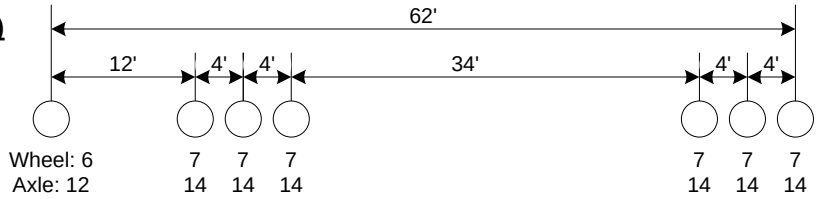
Truck + Trailer (Type 3-3)
Total Weight = 80 Kips (40 Tons)



Truck + Semi-trailer (Type 3S3B)
Total Weight = 90 Kips (45 Tons)



Truck + Semi-trailer (Type 4S3)
Total Weight = 96 Kips (48 Tons)



QUALITY ASSURANCE FIELD REVIEW WORKSHEET

Reviewer: _____ Review Date: _____

Agency: _____

Program Manager: _____ *Team Leader: _____

**Team Members: _____

Bridge ID: _____ County / City: _____

FHWA No.: _____ Stream: _____

Main Span Materials & Design (Item 43): _____

Location: _____

* (Required to be present at 2 reviews)
** (Not required to be present)

	No	Yes
1. Is this a Fracture Critical Bridge?	_____	_____
If "Yes", are the Fracture Critical Elements identified in the inspection documentation?	_____	_____
2. Are all necessary inspection forms completed fully and accurately in SIMMS?	_____	_____
3. Are the condition ratings, comparable between the inspector and reviewer (+/- 1 condition rating)? "Y" for Yes, "N" for No.	_____	_____

Item 58, Deck: Previous rating: ____ Inspector: ____ Reviewer: ____
Item 59, Superstructure: Previous rating: ____ Inspector: ____ Reviewer: ____
Item 60, Substructure: Previous rating: ____ Inspector: ____ Reviewer: ____
Item 61, Channel and Channel Protection:
Previous rating: ____ Inspector: ____ Reviewer: ____
Item 62, Culvert: Previous rating: ____ Inspector: ____ Reviewer: ____

4. Does the bridge posting condition at the bridge match the condition coding in Item 41, Posting Status?	_____	_____
5. Were appropriate sketches, notes, and photos from previous inspections used for preparing the inspection documentation?	_____	_____
6. Was an underwater inspection required during this inspection?	_____	_____
If "Yes", was the underwater inspection properly documented?	_____	_____

Review comments: _____

_____

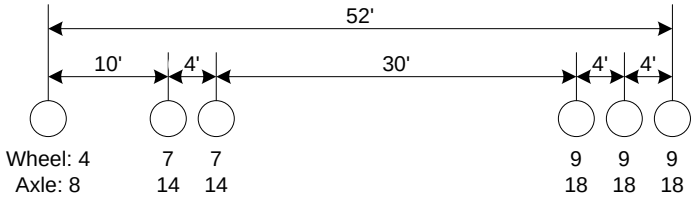
_____

_____

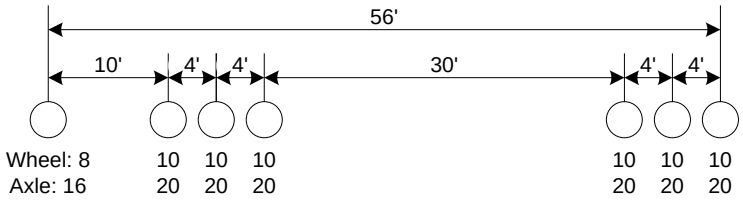
ROUTINE PERMIT TRUCKS DIAGRAMS

(Wheel and axle loads are shown in Kips)

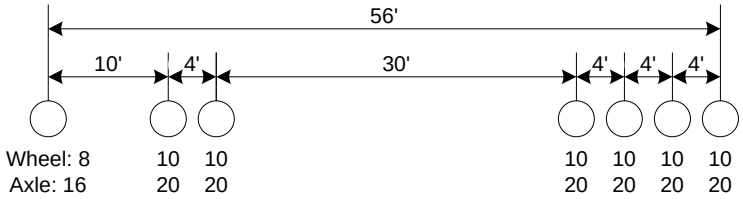
Truck (3 axle)
Total Weight = 90 Kips (45 Tons)



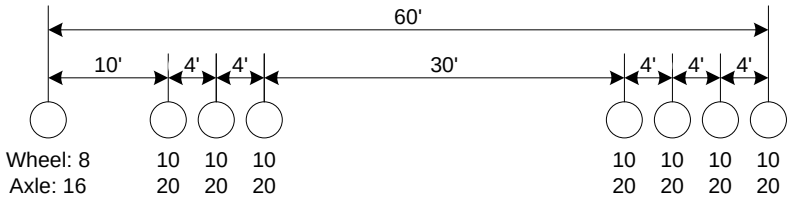
Truck (3 axle)
Total Weight = 136 Kips (68 Tons)



Truck (4 axle)
Total Weight = 136 Kips (68 Tons)



Truck (4 axle)
Total Weight = 156 Kips (78 Tons)



INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: February 16, 2007
From:	Office of Local Systems	I.M. No. 3.002
Subject:	Federal-aid Project Scheduling	

Contents: This Instructional Memorandum (I.M.) includes guidelines and information to assist a Local Public Agency (LPA) in developing realistic, project-specific schedules for development of their Federal-aid projects let by the Iowa Department of Transportation (Iowa DOT).

Introduction

There are many factors that may affect the project development schedule, including: complexity of the project design, right-of-way needs, impacts to environmental or cultural resources, use of railroad property or facilities, relocation or adjustments to utilities, and various permits, approvals, or notifications required by other State or Federal agencies.

Each project is different, so it is not possible to develop a project schedule that is appropriate for all projects. Nevertheless, this I.M. gives some assistance to LPAs by providing an estimated project schedule for four different general types of projects, which are further described on pages 5-8 of this I.M.:

Type 1: Programmatic Categorical Exclusion, No Right-of-Way Needs
Type 2: Programmatic or Individual Categorical Exclusion, Minor Right-of-Way Needs
Type 3: Environmental Assessment, Moderate Right-of-Way Needs
Type 4: Environmental Impact Statement, Significant Right-of-Way Needs

The purpose of the estimated schedules is to provide a starting point for the LPA to develop their own, project-specific schedule, based on the unique circumstances of the project.

Description of Project Tasks and General Assumptions

For simplicity, the estimated project schedules have been broken down into several main project tasks. In reality, each of these tasks is composed of many subtasks. Each main task is identified and described below, including a discussion of the assumptions or conditions that apply to all of the general project types.

Consultant Selection and Negotiation

Description: This task begins with the decision to hire a consultant and ends with the execution of a consultant agreement. It may include, as applicable: formation of a selection committee, preparation of a Request for Proposal (RFP), solicitation of prospective consultants, evaluation of the consultants, selection of a consultant, contract negotiations, Iowa DOT reviews, and Federal Highway Administration (FHWA) Authorization. For more information, refer to I.M. 3.305, Federal Participation in Consultant Costs.

Assumptions / Conditions:

- A consultant will be used and Federal funds will be requested for reimbursement of the consultant costs. If a consultant will be hired, but the consultant costs will not be reimbursed with Federal funds, this task may not require as much time.
- If the design will be performed in-house without Federal participation, this task can be eliminated. However, if Federal participation for in-house design work is desired, a similar amount of time should be included for the reviews required by I.M. 3.310, Federal Participation in In-House Engineering Costs.
- If a complete scope of services and fees are not negotiated up-front, but instead will be accomplished using a phased approach, the project schedule should be adjusted to included additional time for negotiating supplemental agreement(s) and the necessary Iowa DOT reviews and FHWA authorizations.

Prepare Concept Statement

Description: This task begins when the LPA or consultant downloads and reviews the Concept Statement (Form 517001) and instructions and ends when the LPA or consultant submits the Concept Statement to the

Iowa DOT Administering Office. This task includes gathering all necessary information to complete the form. For more information, refer to I.M. 3.105, Concept Statement Instructions.

Assumptions / Conditions:

- This task is dependant on the Consultant Selection task, because it is assumed the consultant will prepare the Concept Statement.
- If the LPA is preparing the Concept Statement themselves, this task may be adjusted accordingly, both in duration and dependency.

FHWA Environmental Concurrence

Description: This task includes all of the necessary environmental reviews, studies, and documentation to satisfy the requirements of the National Environmental Policy Act (NEPA) process. For more information, refer to I.M. 3.112, FHWA Environmental Concurrence Process.

- For Type 1 and Type 2 projects, this task begins when the Concept Statement is forwarded by the Administering Office to the Office of Location and Environment and ends when the Office of Location and Environment sends a memo to the LPA stating that the project has received FHWA Environmental Concurrence.
- For Type 3 and Type 4 projects, the information required by the Concept Statement is usually not available until the necessary environmental studies have been completed. Therefore, for these types of projects, this task begins when the LPA or consultant contacts the Office of Location and Environment to discuss the probable levels of environmental documentation required and ends when the Iowa DOT and the FHWA have approved the final environmental document.

Assumptions / Conditions:

- For Type 1 and Type 2 projects, this task is dependant on the Prepare Concept Statement task.
- For Type 3 and Type 4 projects, this task is dependant on the Consultant Selection task, because it is assumed that a consultant will be hired to complete the necessary environmental studies and documentation.

Prepare Preliminary Plans

Description: This task begins with the preparation of the plans and ends with submittal of the plans to the Iowa DOT Administering Office. It includes all work required to produce a set of Preliminary Plans, including, as applicable: survey and mapping, preliminary design, plan and profile layouts, identification of preliminary right-of-way needs, internal reviews by the consultant, and reviews by the LPA. For guidance in preparing Preliminary Plans, refer to I.M. 3.405, Preliminary Plans, and if applicable, I.M. 3.410, Preliminary Bridge or Culvert Plans. Refer also to I.M. 3.005, Project Development Submittal Dates and Information, for other documents and information that should be included with the Preliminary Plan submittal.

Assumptions / Conditions:

- This task is dependant on the Consultant Selection task, because it is assumed that a consultant will be hired to prepare the project plans.
- If the LPA is preparing the plans with their own staff, this task may be adjusted accordingly.
- Since this task includes the LPA's review of the plans, the LPA and consultant should discuss the amount of time that will be required and adjust the duration of this task if necessary.

DOT Preliminary Plan Review

Description: This task begins when the Preliminary Plans are received by the Administering Office and ends when plans are returned with comments to the LPA and / or consultant. It includes the necessary reviews by the Administering Office and other DOT offices if required, including a review of the Concept Statement. If required for a bridge or culvert project, this task also includes a hydraulic review by the Iowa DOT Office of Bridges and Structures.

Assumptions / Conditions:

- This task is dependant on the Prepare Concept Statement task, because the Iowa DOT's review of the plans is based on the design values shown on the Concept Statement.
- This task is also dependant on the Prepare Preliminary Plans task.
- If the project is on a Primary or Interstate Highway, an additional 1-2 weeks may be required for this task.

Right-of-Way (ROW) – Descriptions and Appraisals

Description: This task begins with an assessment of the project's right-of-way needs and concludes when the LPA is ready to notify the affected property owners and begin negotiations. This task includes activities such as: preparing of right-of-way plans, plats, legal descriptions, title reports, appraisals, and review appraisals. If Federal reimbursement for right-of-way costs will be requested, this task also includes the preparation and submittal of a request for FHWA Authorization by the LPA, as well as the review and approval required by the Iowa DOT and FHWA.

Assumptions / Conditions:

- This task is shown as being dependant on completion the Prepare Preliminary Plans task. However, some of these activities may begin prior to completion of the Preliminary Plans.
- This task may be conducted concurrently with the DOT Preliminary Plan Review task. However, changes to the Preliminary Plans in response to Iowa DOT comments may affect the project's right-of-way needs, which could lengthen the duration of this task. Therefore, the Iowa DOT recommends that this task not begin until after the DOT Preliminary Plan Review task is complete.
- This task may also be conducted concurrently with the FHWA Environmental Concurrence task. However, for projects that will require an Environmental Assessment or Environmental Impact Statement document, the final right-of-way needs cannot be completely determined until after the FHWA Environmental Concurrence task is complete. Therefore, the Iowa DOT strongly recommends that for such projects, descriptions and appraisals not begin until the FHWA Environmental Concurrence task is complete.

Right-of-Way (ROW) – Negotiate and Acquire

Description: This task begins when the LPA initiates negotiations with the affected property owners and ends when all of the necessary property rights have been obtained, as documented by the Project Development Certification (Form 730002) (see I.M. 3.750, Project Development Certification Instructions). This task may include, as applicable: the required notifications, negotiations, execution of the easement or acquisition documents, relocations, and payments to the property owners. For more information about the required right-of-way procedures, refer to I.M. 3.605, Right-of-Way Acquisition.

Assumptions / Conditions:

- This task is dependant on the FHWA Environmental Concurrence task, because right-of-way acquisition activities, including any type of discussion of property values with land owners, shall not begin until after the NEPA process is complete.
- This task is also dependant on the ROW – Descriptions and Appraisals task.
- If the project requires work on railroad right-of-way, this task should also include some time to negotiate and execute an agreement with the railroad. Coordination with the railroad may require only a few weeks, or it may require a year or more, depending on how the project affects the railroad's operations. For more information about the process, refer to I.M. 3.670, Work on Railroad Right-of-Way, and I.M. 3.680, Federal-aid Projects Involving Railroads. (Note: Coordination with the railroad can and should begin prior to the FHWA Environmental Concurrence; however, if railroad property must be acquired, such acquisitions shall not begin until after FHWA Environmental Concurrence has been received.)
- If the project requires utilities to relocate that are not required to move at their own expense (i.e., a relocation agreement will be required), this task should also include some time to negotiate and execute the necessary utility agreement(s). For more information, refer to I.M. 3.640, Utility Accommodation and Coordination. (Note: Coordination with the utility can and should begin prior to the FHWA Environmental Concurrence; however, if utility property must be acquired, such acquisitions shall not begin until after FHWA Environmental Concurrence has been received.)

Prepare Check Plans

Description: This task begins with review of the Iowa DOT comments on the Preliminary Plans and ends with submittal of the Check Plans to the Administering Office. It includes all work required to address the Preliminary Plan comments and produce a complete set of Check Plans, including, as applicable: final design, establishment of final right-of-way needs, calculation of bid quantities, preparation of cost estimates, Special Provisions, internal reviews by the consultant, and reviews by the LPA. For guidance in preparing Check Plans, refer to I.M. 3.505, Check and Final Plans, and if applicable, I.M. 3.510, Check and Final Bridge or

Culvert Plans. Refer also to I.M. 3.005, Project Development Submittal Dates and Information, for other documents and information that should be included with the Check Plan submittal.

Assumptions / Conditions:
- This task is dependant on the DOT Preliminary Plan Review task.
- This task is also dependant on the FHWA Environmental Concurrence task, because final design activities (which include preparation of check plans) shall not begin until after the NEPA process is complete.
- Since this task includes the LPA's review of the plans, the LPA and consultant should discuss the amount of time that will be required and adjust the duration of this task if necessary.

DOT Check Plan Review

Description: This task begins when the Check Plans are received by the Administering Office and ends when plans are returned with comments to the LPA and / or consultant. It includes the necessary reviews by the Administering Office and other DOT offices if required. If required for a bridge or culvert project, this task also includes a structural review by the Iowa DOT Office of Bridges and Structures.

Assumptions / Conditions:
- This task is dependant on the Prepare Check Plans task.
- The duration of this task assumes that the Check Plans are complete. Incomplete plans may require re-submittal as Check Plans.
- If the project is on a Primary or Interstate Highway, an additional 1-2 weeks may be required for this task.

Prepare Final Plans

Description: This task begins with review of the Iowa DOT comments on the Check Plans and ends with submittal of the Final Plans to the Administering Office. It includes all work required to address the Check Plan comments and produce a complete set of Final Plans, including submittal of the Project Development Certification (Form 730002). Refer also to I.M. 3.005, Project Development Submittal Dates and Information, for other documents and information that should be included with the Final Plan submittal.

Assumptions / Conditions:
- This task is dependant on the DOT Check Plan Review task.

DOT Final Plan Review

Description: This task begins when the Final Plans are received by the Administering Office and ends when plans are turned-in to the Iowa DOT Office of Contracts for letting. It includes verification by the Administering Office that the Check Plan comments have been addressed, a review of the Project Development Certification, and any final plan revisions and re-submittals that may be required.

Assumptions / Conditions:
- This task is dependant on the Prepare Final Plans task.
- The duration of this task assumes that the Final Plans are complete. Incomplete plans may require re-submittal as Final Plans.

Letting Process

Description: This task begins when Final Plans and associated information are submitted for letting to the Office of Contracts and ends when the bids are opened and the apparent low-bidder is announced. The Iowa DOT letting process includes the following activities, as applicable: preparation of cost estimates, establishment of contract periods, preparation of bid proposals, DBE goal setting, FHWA Authorization, distribution of addenda, advertisement, and opening of bids. This task also includes additional review of the project plans and specifications for conformance to the Iowa DOT Standard Specifications and letting process. Often, this review results in some additional minor revisions to the plans. For more information, refer to I.M. 3.730, Iowa DOT Letting Process.

Assumptions / Conditions:
- This task is dependant on the DOT Final Plan Review and the Acquire Right-of-Way tasks.

- This task assumes that all of the required project clearances have been obtained, or a Public Interest Finding has been submitted by the LPA and approved by the Administering Office to allow the project to enter the letting process without all of the needed clearances. For more information, refer to I.M. 3.760, Public Interest Findings.

A discussion of each general project type is included below. Each discussion includes a description of the general project type, an estimated schedule for project development, and a list of additional specific assumptions that have been made or conditions that apply, if any. For purposes of comparison, each of the estimated project schedules begins on January 1, 2007. Actual projects may begin the development process at any time.

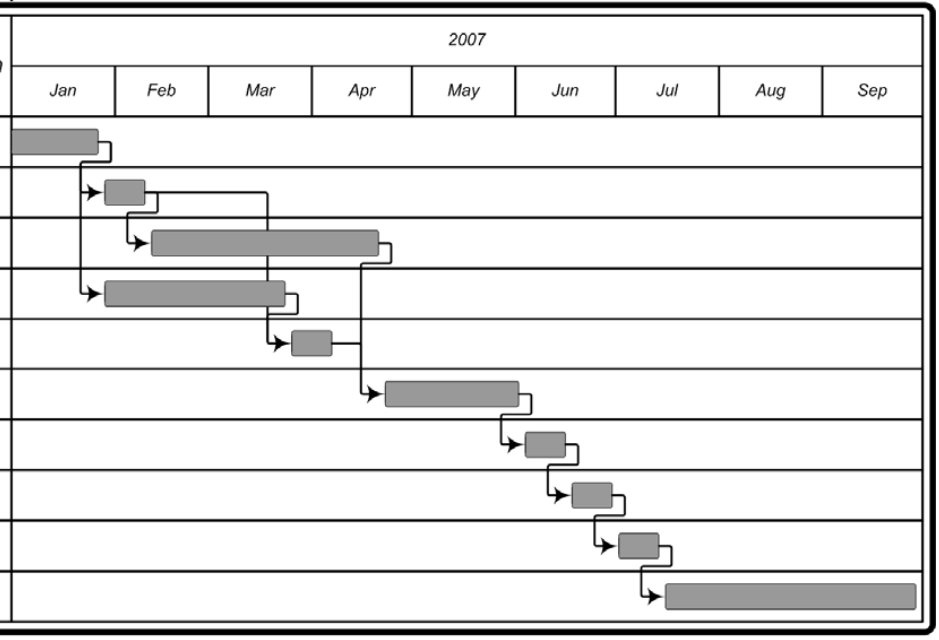
Type 1: Programmatic Categorical Exclusion, No Right-of-Way Needs

The work required for these projects is usually minor in scope and duration. These projects do not require any work outside of the existing right-of-way. Typical projects include any of the following:

- non-construction work, such as research or planning studies;
- routine maintenance work, such as crack sealing or patching;
- resurfacing, restoration, rehabilitation or reconstruction of roadways, structures, or trails;
- traffic signalization, signing or lighting projects;
- landscaping or seeding; and
- Emergency Relief (ER) funded projects.

Type 1 Estimated Project Development Schedule — Typical Development Time: 9 months

ID	Task Name	Duration
1	Consultant Selection and Negotiation	4w
2	Prepare Concept Statement	2w
3	FHWA Environmental Concurrence	10w
4	Prepare Preliminary Plans	8w
5	DOT Preliminary Plan Review	2w
6	Prepare Check Plans	6w
7	DOT Check Plan Review	2w
8	Prepare Final Plans	2w
9	DOT Final Plan Review	2w
10	Letting Process	11w



Target Letting Date ◆

Additional Assumptions / Conditions

1. No additional right-of-way or property rights of any kind are required.
2. No railroad crossings are present within or adjacent to the project work area.
3. Task 1: The abbreviated consultant selection process is used and pre-audit is not required.
4. Task 3: FHWA Environmental Concurrence is obtained as a Programmatic CE. To qualify, the project must be non-controversial and not have any impacts to environmental or cultural resources, including potentially historic properties, archeological sites, recreational areas, or wildlife refuges.
5. Tasks 5 and 7: If a bridge or culvert project, a hydraulic or structural review is not required.

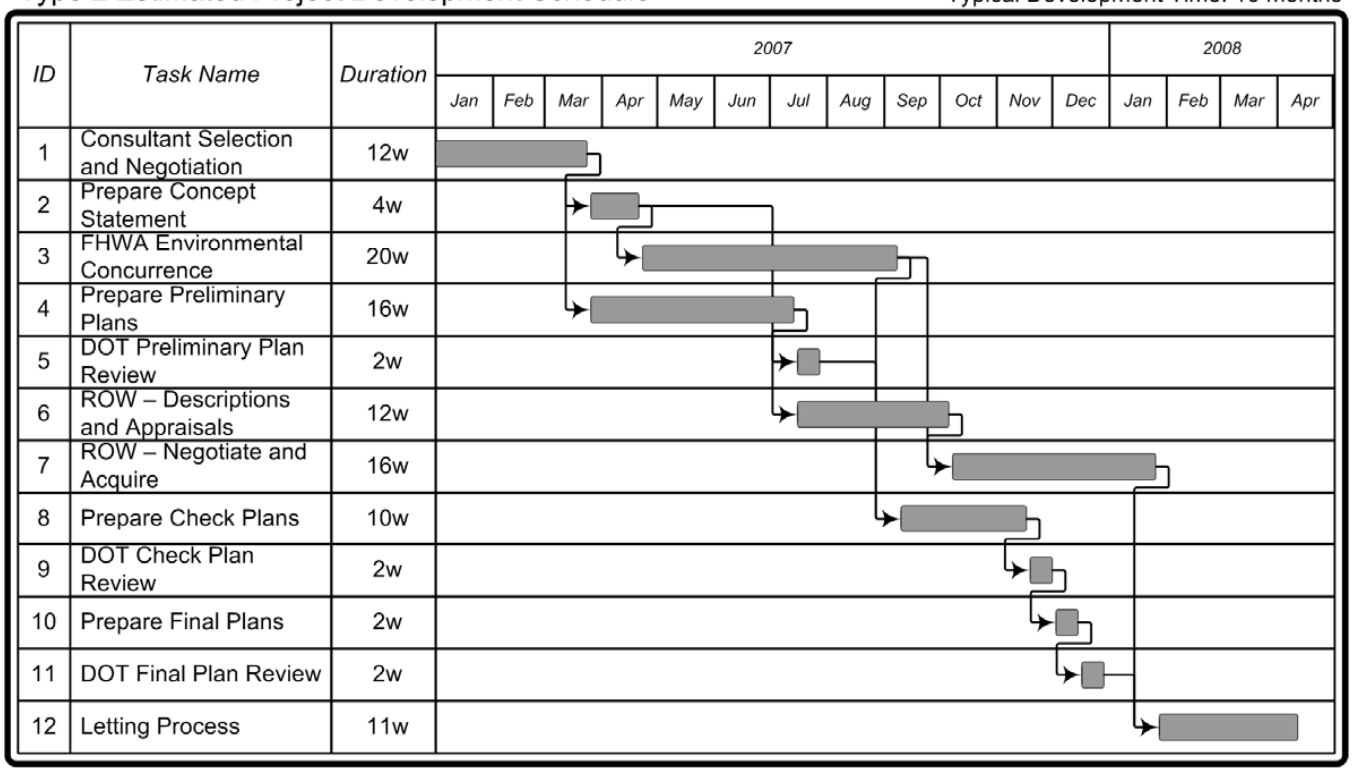
Type 2: Programmatic or Individual Categorical Exclusion, Minor Right-of-Way Needs

These projects are more complex than the Type 1 projects. They typically require several different design disciplines and / or types of construction. They usually involve new construction, complete reconstruction, or widening of roads, bridges, or trails. These projects may include a limited amount of right-of-way acquisition, but do not have substantial impacts on surrounding properties or the environment. Typical projects include any of the following:

- highway, street, or bridge construction or reconstruction;
- bridge construction on new alignment;
- rehabilitation or replacement of historical bridges;
- major urban street reconstruction; and
- construction of new recreational trails outside of the existing right-of-way.

Type 2 Estimated Project Development Schedule

Typical Development Time: 16 months



Target Letting Date ◆

Additional Assumptions / Conditions

1. Task 1: The full consultant selection process is used and / or a pre-audit is required.
2. Task 3: FHWA Environmental Concurrence is obtained either as Programmatic or Individual CE. To qualify, the project must be non-controversial and have no significant impacts to environmental or cultural resources, including potentially historic properties, archeological sites, recreational areas, or wildlife refuges.
3. Tasks 6 and 7:
   - Minor amounts additional right-of-way or property rights (about 1-5 parcels) may be required and all acquisitions are relatively simple. Most can be valued using the Appraisal Waiver process, as described in Chapter 3 of the Office of Right of Way's LPA Manual.
   - No complete acquisitions or relocations of residential or business properties are required.
   - No condemnations are required.
   - Some utility relocations may be required, but most utilities are located within the existing right-of-way and are required to move at their own expense.
   - If a railroad crossing is present within or adjacent to the project work area, acquisitions of railroad property or adjustments to railroad facilities are not required.
4. Tasks 5 and 9: If a bridge or culvert project, a hydraulic or structural review is required.

Type 3: Environmental Assessment, Moderate Right-of-Way Needs

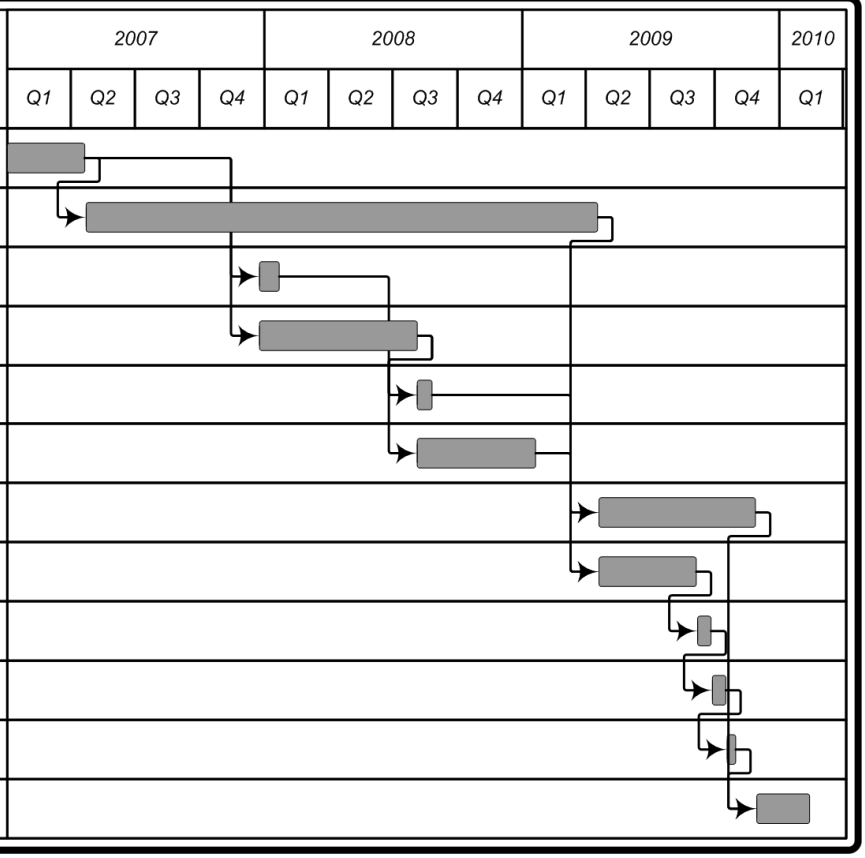
These projects are similar to Type 2 projects, except that the level of environmental or social impacts may be more significant, requiring additional environmental review. Typical projects include any of the following:

- highway, street, or bridge construction or reconstruction;
- bridge construction on new alignment;
- rehabilitation or replacement of historical bridges; and
- major urban street construction or reconstruction.

Type 3 Estimated Project Development Schedule

Typical Development Time: 3 years

ID	Task Name	Duration
1	Consultant Selection and Negotiation	16w
2	FHWA Environmental Concurrence	104w
3	Prepare Concept Statement	4w
4	Prepare Preliminary Plans	32w
5	DOT Preliminary Plan Review	3w
6	ROW – Descriptions and Appraisals	24w
7	ROW – Negotiate and Acquire	32w
8	Prepare Check Plans	20w
9	DOT Check Plan Review	3w
10	Prepare Final Plans	3w
11	DOT Final Plan Review	2w
12	Letting Process	11w



Target Letting Date ◆

Additional Assumptions / Conditions

1. Task 1: The full consultant selection process is used and a pre-audit is required.
2. Task 2: FHWA Environmental Concurrence requires preparation of an Environmental Assessment (EA) document.
3. Tasks 6 and 7:
   - Moderate amounts of additional right-of-way or property rights (about 5-10 parcels) are required. Some property valuations may require the Value Finding Appraisal Report, as described in the Office of Right of Way's Appraisal Operational Manual.
   - No complete acquisitions or relocations of residential or business properties are required.
   - A few parcels (about 1-5) must be condemned.
   - If a railroad crossing is present within the project work area, minor acquisitions of railroad property or adjustments to railroad facilities are required.
4. Tasks 5 and 9: If a bridge or culvert project, a hydraulic or structural review is required.

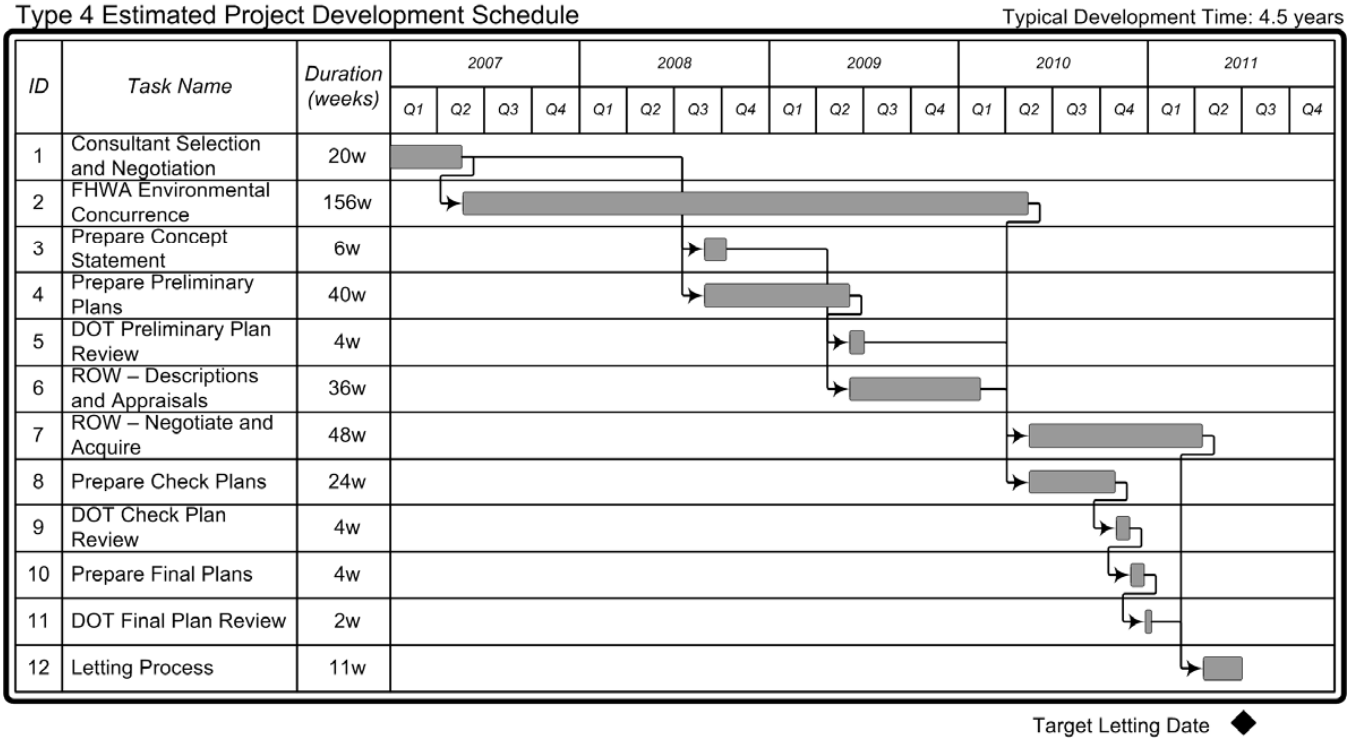
Type 4: Environmental Impact Statement, Significant Right-of-Way Needs

These projects often usually involve all new construction on new alignment or significant expansion of the roadway or structure footprint. Typical projects include:

- widening from 2 lanes to 4 lanes or other major capacity improvements;
- construction or replacement of major river bridges;
- construction of bypasses around urban areas; and
- major roadway realignment through urban areas.

Type 4 Estimated Project Development Schedule

Typical Development Time: 4.5 years



Additional Assumptions / Conditions

1. Task 1: The full consultant selection process is used and a pre-audit is required.
2. Task 2: FHWA Environmental Concurrence requires preparation of an Environmental Impact Statement (EIS) document.
3. Tasks 6 and 7:
   - Significant amounts of additional right-of-way or property rights (more than 10 parcels) are required. Most property valuations will require use of the Detailed Appraisal Report, as described in the Office of Right of Way's Appraisal Operational Manual.
   - A few complete acquisitions or relocations of residential or business properties (about 1-5) are required.
   - Several parcels (more than 5) must be condemned.
   - If a railroad crossing is present within the project work area, significant acquisitions of railroad property or adjustments to railroad facilities are required.
4. Tasks 5 and 9: If a bridge or culvert project, a hydraulic or structural review is required.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: April 22, 2010
From:	Office of Local Systems	I.M. No. 3.005
Subject:	Project Development Submittal Dates and Information	

Contents: This Instructional Memorandum (I.M.) lists the submittal dates for some of the major milestone events for development for Local Public Agency (LPA) projects that will be let by the Iowa Department of Transportation (Iowa DOT). It also summarizes the information that should be included with each submittal.

Submittal Dates for Local Public Agency Projects Let by the Iowa DOT

Following are submittal dates for the July 20, 2010, through December 18, 2012, Iowa DOT lettings. All submittals should be *received* by the Iowa DOT Administering Office on the dates shown below. However, early submittals are always encouraged.

Concept Statement		Preliminary Plans		Check Plans		Final Plans and PDC	Contracts Turn-in	Letting Date	Fiscal Year
Major (42 weeks)	**Minor** (16 weeks)	**Major** (16 weeks)	**Minor** (11 weeks)	**Major** (6 weeks)	**Minor** (5 weeks)	(2 weeks)			
07/14/09	01/12/10	01/12/10	02/16/10	03/23/10	03/30/10	04/20/10	05/04/10	07/20/10	2010
08/11/09	02/09/10	02/09/10	03/16/10	04/20/10	04/27/10	05/18/10	06/01/10	08/17/10	
09/15/09	03/16/10	03/16/10	04/20/10	05/25/10	06/01/10	06/22/10	07/06/10	09/21/10	
10/13/09	04/13/10	04/13/10	05/18/10	06/22/10	06/29/10	07/20/10	08/03/10	10/19/10	
11/17/09	05/18/10	05/18/10	06/22/10	07/27/10	08/03/10	08/24/10	09/07/10	11/16/10	2011
12/15/09	06/15/10	06/15/10	07/20/10	08/24/10	08/31/10	09/21/10	10/05/10	12/21/10	
01/12/10	07/13/10	07/13/10	08/17/10	09/21/10	09/28/10	10/19/10	11/02/10	01/19/11	
02/16/10	08/17/10	08/17/10	09/21/10	10/26/10	11/02/10	11/23/10	12/07/10	02/15/11	
03/16/10	09/14/10	09/14/10	10/19/10	11/23/10	11/30/10	12/21/10	01/04/11	03/15/11	
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08/17/10	02/15/11	02/15/11	03/22/11	04/26/11	05/03/11	05/24/11	06/07/11	08/16/11	
09/14/10	03/15/11	03/15/11	04/19/11	05/24/11	05/31/11	06/21/11	07/05/11	09/20/11	
10/12/10	04/12/11	04/12/11	05/17/11	06/21/11	06/28/11	07/19/11	08/02/11	10/18/11	
11/16/10	05/17/11	05/17/11	06/21/11	07/26/11	08/02/11	08/23/11	09/06/11	11/15/11	2012
12/14/10	06/14/11	06/14/11	07/19/11	08/23/11	08/30/11	09/20/11	10/04/11	12/20/11	
01/11/11	07/12/11	07/12/11	08/16/11	09/20/11	09/27/11	10/18/11	11/01/11	01/18/12	
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04/19/11	10/18/11	10/18/11	11/22/11	12/27/11	01/03/12	01/24/12	02/07/12	04/17/12	
05/17/11	11/15/11	11/15/11	12/20/11	01/24/12	01/31/12	02/21/12	03/06/12	05/15/12	
06/14/11	12/13/11	12/13/11	01/17/12	02/21/12	02/28/12	03/20/12	04/03/12	06/19/12	
07/12/11	01/10/12	01/10/12	02/14/12	03/20/12	03/27/12	04/17/12	05/01/12	07/17/12	
08/16/11	02/14/12	02/14/12	03/20/12	04/24/12	05/01/12	05/22/12	06/05/12	08/21/12	
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10/18/11	04/17/12	04/17/12	05/22/12	06/26/12	07/03/12	07/24/12	08/07/12	10/16/12	
11/15/11	05/15/12	05/15/12	06/19/12	07/24/12	07/31/12	08/21/12	09/04/12	11/20/12	'13
12/13/11	06/12/12	06/12/12	07/17/12	08/21/12	08/28/12	09/18/12	10/02/12	12/18/12	

Important notes regarding submittal dates:

1) Projects using the "Major" submittal dates typically involve any of the following: wetlands, recreational areas, or wildlife refuges; railroad crossings; historical structures or historical districts; right-of-way or easement acquisitions; or Federal-aid for consultant work. Examples include relocating a road on new alignment, major reconstruction, a major bridge, or a historical structure. Note: All projects requiring a hydraulic or structural review should follow the schedule for "Major" type projects.
2) Projects using the "Minor" submittal dates typically do not involve any of the items listed above for the "Major" type projects. Examples include an asphalt resurfacing project or a bike trail surfacing project on an existing railroad bed.
3) Neither the Major nor the Minor project submittal dates are applicable to Federal-aid projects that require an Environmental Assessment (EA) or Environmental Impact Statement (EIS) document. The submittal dates shown above reflect the *minimum* amount of time required by the *Iowa DOT* to review the submittal. *These dates do not reflect the time that may be required by other agencies for the appropriate reviews and approvals*. The project schedule should be based on the specific circumstances of the project. Federal-aid projects that have significant impacts to environmental or historical resources, require large amounts of right-of-way, or involve adjustments to railroad or utility facilities, will likely require additional time to develop for letting. Therefore, in such cases, it will probably be necessary to submit the Concept Statement and Preliminary Plans earlier than the dates shown. For additional guidance and information, refer to I.M. 3.002, Federal-aid Project Scheduling.
4) The "Final Plans and PDC" date is when the LPA shall submit final plans and the Project Development Certification (PDC) to the Administering Office.
5) The "Letting Date" is the third Tuesday of every month, except January, which is the Wednesday after the third Tuesday of the month.
6) The "Contracts Turn-in" date is the first Tuesday, 2 months prior to letting. This date is when the Administering Office will deliver final plans to the Office of Contracts.
7) All other submittal dates are calculated from the "Contracts Turn-in" date by subtracting the number of weeks shown, except when such dates conflict with a State holiday. Dates adjusted for a holiday are shown in **bold**.
8) The "Fiscal Year" is the Federal fiscal year in which a project should be programmed in the Statewide Transportation Improvement Program (STIP) for the letting dates shown. Even though October 1 is the beginning of the Federal fiscal year, projects targeting an October letting should be programmed in the previous fiscal year. This is because projects in the October letting are authorized for letting in September.

Administering Office When it occurs in this document, and elsewhere throughout the I.M.s, the term, "Administering Office," shall refer to the Iowa DOT Office of Systems Planning for projects funded by the Transportation Enhancement, Federal Recreational Trails, Scenic Byways, Safe Routes to School, or Revitalize Iowa's Sound Economy (RISE) programs; unless such projects are already being administered by one of the Iowa DOT District Offices. For all other projects, the term, "Administering Office," shall refer to the appropriate Iowa DOT District Office.

Electronic Submittals Plans may be submitted in electronic format, if they conform to the requirements of the File Specifications for Electronic Plan Submittals to the Iowa DOT. Any of the other documents listed below may also be submitted in electronic format, provided the means of transmission and file format is acceptable to the Administering Office. Files may be transmitted via e-mail or the Transportation Project Management System (TPMS). If sent by e-mail, contact the Administering Office for the appropriate e-mail address. Acceptable file formats for electronic documents include: Microsoft Word (*.doc), Adobe Acrobat (*.pdf), Joint Photographs Expert Group (*.jpg), Graphic Interchange Format (*.gif), and Tag Image File Format (*.tif). If submitted electronically, paper copies are not required. Otherwise, submit hard copies as noted below.

Concept Statement Include the following items in a Federal-aid project "Concept Statement for Local Systems Federal-aid Projects" (Form 517001) submittal (non-Federal-aid projects do not require a Concept Statement):

- ❑ 1 transmittal letter (or e-mail, if submitted electronically). Include a description of any unique aspects of the project or other information that cannot be adequately explained on the Concept Statement form.
- ❑ 4 copies of the Concept Statement. This form is available on-line in either Microsoft Word or eForms XML format. Include a location map and any applicable environmental documents with each copy. For more information, refer to I.M. 3.105, Concept Statement Instructions.
- ❑ If a design exception is required, include 1 copy of the design exception documentation. For more information, refer to I.M. 3.218, Design Exception Process. If the need for a design exception cannot be determined when the Concept Statement is submitted, submit the design exception request as soon as possible, but no later than the Check Plan submittal date.

- ❑ If required by the Concept Statement, include 2 copies of the Environmental Data Sheet (Form 517006). This form is available on-line in either Microsoft Word or eForms XML format. If the information required by this form is not known at the time of the Concept Statement submittal, submit the Environmental Data Sheet as soon as possible, but no later than the Preliminary Plan submittal date. For more information, refer to I.M. 3.110, Environmental Data Sheet Instructions.

Incomplete Concept Statement submittals will delay project reviews. All submittals shall include the Iowa DOT project number. Users of the Transportation Program Management System (TPMS) may request project numbers using this system; otherwise, contact the Administering Office to obtain a project number.

Preliminary Plans Include the following items in a Federal-aid project Preliminary Plan submittal (non-Federal-aid projects do not require preliminary plans):

- ❑ 1 transmittal letter (or e-mail, if submitted electronically), including the following:
  - the proposed letting date;
  - identification of all changes from the previously approved project Concept Statement, if any; and
  - whether or not a hydraulic review is being requested.
- ❑ 2 copies of the plans for all Preliminary Plan submittals.
- ❑ If the project involves a bridge or culvert that requires a hydraulic review, include 1 extra copy of the plans and 2 copies of the hydraulic review materials.
- ❑ If the project involves any work on an Interstate or Primary highway, include 3 extra copies of the plans.
- ❑ If the project involves right-of-way acquisitions or easements, include 1 extra copy of the title sheet and plan sheets that show the proposed right-of-way or easements.
- ❑ If a design exception is required but has not been previously requested, include the design exception documentation as noted in the Concept Statement section above.
- ❑ If submittal of the Environmental Data Sheet (Form 517006) is required but has not been previously submitted, include copies of this form as noted in the Concept Statement section above.
- ❑ 1 completed copy of the Preliminary Plan Checklist, included as Attachment B to I.M. 3.405, Preliminary Plans (use of the checklist is encouraged, but not required).

For more information on the preliminary plan requirements, refer to I.M. 3.405, Preliminary Plans. For more information about the hydraulic review criteria for bridge and culvert projects, refer to I.M. 3.410, Preliminary Bridge and Culvert Plans.

Please note: Design activities for Federal-aid projects may not progress past the preliminary plan stage until after FHWA Environmental Concurrence has been received.

Check Plans Include the following items in the check plan submittal:

- ❑ 1 transmittal letter (or e-mail, if submitted electronically), including the following information:
  - the proposed letting date;
  - identification of all changes from the previously approved project Concept Statement, if any;
  - whether or not a structural review is requested;
  - if a bridge, culvert, or grading project does not require a U.S. Army Corps of Engineers 404 permit, a statement that explains why the permit is not required;
  - if a bridge, culvert, or grading project does not require an Iowa Department of Natural Resources Floodplain Construction permit, a statement that explains why the permit is not required;
  - if the project does not disturb one or more acres of land, a statement that the National Pollutant Discharge Elimination System (NPDES) permits is not required; and
  - if a federal-aid bridge or culvert project will not use epoxy-coated reinforcing steel, a waiver request as per the Bridge or Culvert Plan Supplementary Checklist, included as Attachment A to I.M. 3.510, Check and Final Bridge or Culvert Plans.
- ❑ 2 copies of the plans for all check plan submittals.
- ❑ If the project includes any Special Provisions, include 1 electronic copy of each Special Provision. If the Check Plans are submitted in hardcopy format, also include 1 hardcopy of the Special Provisions
- ❑ If the project involves a bridge or culvert that requires a structural review, include 1 extra copy of the plans and 2 copies of the structural calculations.
- ❑ If the project involves any work on an Interstate or Primary highway, include 3 extra copies of the plans and 3 extra hard copies of each Special Provision.
- ❑ If the project involves right-of-way acquisitions or easements, include 1 extra copy of the title sheet and plan

sheets that show the proposed right-of-way or easements.

- ❑ If a design exception is required but has not been previously requested, include the design exception documentation as noted in the Concept Statement section above.
- ❑ 1 completed copy of the Check and Final Plan Checklist, included as Attachment B to I.M. 3.505, Check and Final Plans (use of the checklist is encouraged, but not required).
- ❑ If a Public Interest Finding is being requested, include justification. For more information, refer to I.M. 3.760, Public Interest Findings.

Check plans should be 100% complete and incorporate all preliminary plan review comments provided by the Administering Office and any other offices that were involved in the preliminary plan review. The engineer's signature is not needed on the Check Plan submittal. For more information on the check plan requirements, refer to I.M. 3.505, Check and Final Plans. For more information on the structural review criteria for bridge and culvert projects, refer to I.M. 3.510, Check and Final Bridge or Culvert Plans.

Final Plans Include the following items in the final plan submittal:

- ❑ 1 transmittal letter (or e-mail, if submitted electronically), including the following information:
  - the proposed letting date;
  - if requested, any specific contract requirements (e.g., start date, number of working days, combined projects, etc.), including the reasons for the request;
  - identification of any changes, in addition to those requested by the check plan review, that have been made to the plans since the Check Plan submittal. Please be specific. It is especially important to note any changes that affect bid items or the estimate reference information. Use of highlighter to indicate the changes on the copy of the final plans is also acceptable; and
  - if multiple funding sources will be used for the contract (not counting the local match), specify the type and order in which the funds should be used.
- ❑ 1 unbound set of reproducible final plans with original signatures. Note: The signature of the certifying Engineer and / or Architect shall be in contrasting ink (blue works best). Signatures on electronic plans do not require a color contrast. For more information, refer to the File Specifications for Electronic Plan Submittals to the Iowa DOT.
- ❑ 1 copy of the final plans.
- ❑ 2 copies of the project cost estimate.
- ❑ 1 electronic Trns*Port bid item file. The Trns*Port file is required for city projects and strongly encouraged for county projects with more than 6 bid items. For more information, refer to I.M. 3.520, Electronic Bid Item Information.
- ❑ If the project includes any Special Provisions, include 1 electronic copy of each Special Provision. If the Final Plans are submitted in hardcopy format, also include 2 hardcopies of the Special Provisions
- ❑ If the project involves any work on a Interstate or Primary highway, include 3 extra copies of the plans and 3 extra hard copies of each Special Provision.
- ❑ 1 Project Development Certification (PDC) (Form 730002). The PDC is available on-line in either Microsoft Word or Adobe Acrobat (PDF) format. For more information, refer to I.M. 3.750, Project Development Certification Instructions.
- ❑ If a railroad agreement is required, include 2 copies of the executed agreement. For more information, refer to I.M. 3.670, Work on Railroad Right-of-Way.
- ❑ If a Public Interest Finding is being requested, include justification. For more information, refer to I.M. 3.760, Public Interest Findings.

Final plans should incorporate all check plan comments made by the Administering Office and any other offices involved in the check plan review. For more information on the final plan requirements, refer to I.M. 3.505, Check and Final Plans, and I.M. 3.510, Check and Final Bridge or Culvert Plans.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: April 12, 2007
From:	Office of Local Systems	I.M. No. 3.050
Subject:	In-Kind Contributions	

Contents: This Instructional Memorandum (I.M.) provides guidance for use of in-kind contributions on a Local Public Agency (LPA) Federal-aid project. Topics addressed include general eligibility criteria, a discussion of the different types of in-kind contributions, the procedures for requesting and receiving credit for in-kind contributions, and example calculations showing how in-kind contributions effect the net cash outlay required by the LPA.

Definitions

In-kind contribution – a non-monetary contribution of property, services, materials, or equipment that is used in the development, construction, or implementation of a Federal-aid project.

Third-party – any non-governmental agency, group, organization, or individual.

Small Federal Programs – includes the Transportation Enhancement Program, Recreational Trail Program, and Scenic Byways Program.

Introduction

As amended by the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Section 323 of Title 23, United States Code (U.S.C.) allows contributions of funds, materials, services, or property to be credited toward the non-Federal share of a Federal-aid project's costs, subject to the restrictions and conditions noted below. Such contributions may come from either a third party or an LPA.

Third party donations of funds may be made upon whatever lawful terms are mutually agreeable to the LPA and third party. The LPA may then simply use the donated funds toward the non-Federal share of project costs. Therefore, it is not necessary to include a discussion of donated funds in this I.M. Instead, this I.M. will focus on in-kind contributions.

General Eligibility Criteria

An in-kind contribution must be a project-related activity that would otherwise be eligible for reimbursement with Federal funds. For example, construction work is an activity eligible for Federal-aid reimbursement. Therefore, the value of construction performed with donated labor, materials, or equipment could be used as an in-kind contribution, provided it contributes to the project and complies with approved project design and environmental conditions.

In general, in-kind contributions credited toward the non-Federal share of project costs must come from non-Federal sources. However, for the Small Federal Programs, funds or in-kind contributions from some Federal agencies, other than the Federal Highway Administration (FHWA), may be credited toward the non-Federal share of project costs, subject to certain conditions. LPAs that desire to receive credit for funds or in-kind contributions from other Federal agencies should contact the Iowa Department of Transportation (Iowa DOT) Administering Office for assistance.

In-kind contributions may only be used once as part of the required non-Federal match. In other words, the same in-kind contribution cannot be used as match toward two different Federal-aid projects. In addition, if more than one type of Federal funds are involved in a single project, the same in-kind contribution cannot be used as match for more than one type of Federal funds.

The specific requirements for receiving credit for in-kind contributions vary, depending on the type of contribution and the type of Federal funds being matched. In the sections that follow, each type of contribution is discussed in detail, including: a description, the conditions or requirements for eligibility, and the method for establishing and documenting the value of the in-kind contribution.

Materials and Equipment

Description

This type of in-kind contribution includes materials or equipment that are either physically incorporated into the project or used to carry-out project activities. Typically, these consist of materials or equipment used for construction of the project. However, in some cases, pamphlets, brochures, trail maps, etc. may also be considered as a material contribution, if there is a direct connection to the project being funded. But, under no circumstances will the cost of any promotional items (e.g., pens, key chains, mouse pads, etc.) be considered as an in-kind contribution.

Conditions or Requirements for Eligibility

1. The Federal funds being matched shall be from one or more of the Small Federal Programs.

2. The donated materials or equipment shall be used on or incorporated into the project only *after* the initial FHWA Authorization of Federal funds and *before* FHWA approval of the final voucher.

3. If materials or equipment will be purchased by the LPA for use as an in-kind contribution, they shall be acquired through a competitive bid or quote process.

Valuation and Documentation

Credit for in-kind contributions of materials or equipment will be based on the fair market value of the materials or equipment used on or incorporated into the project. The quality and condition of materials or equipment may be reviewed by the Administering Office prior to approving the in-kind value.

Materials

If the materials were purchased by the LPA for the project, the fair market value will be the actual invoiced cost. Documentation shall include copies of the invoices that show the actual cost paid.

If the materials were supplied out of the LPA's existing inventory (i.e., they were not purchased specifically for the project), or the materials were donated by a third party, the fair market value will be estimated. Documentation shall include a detailed description of all donated materials, and an itemized estimate that includes a quantity and unit value for each item, and a total value for all donated materials. Support for the unit value may include current invoices, price sheets, quotations from local suppliers, or other information that is sufficient to establish the fair market value.

Equipment

If the equipment will not be permanently incorporated into the project, the fair market value will be determined based on the estimated time the equipment will be used during development or construction of the project. Documentation shall include an itemized estimate that includes the following for each piece of equipment: a description (type and size), the hourly rate, the number of hours the equipment will be used, and the total estimated value for its use. The hourly rates shall be based on the Federal Emergency Management Administration (FEMA) Schedule of Equipment Rates, the Rental Rate Blue Book for Construction Equipment, or the Iowa DOT Schedule of Equipment Rates, as published by the Office of Local Systems.

If the equipment will be a permanent, integral part of the project, the fair market value will be based on the entire estimated cost or value of the equipment. For equipment that was purchased by the LPA for the project, documentation shall include a copy of the invoice or receipt that shows the purchase price. For equipment that was previously owned by the LPA (i.e., it was not purchased specifically for the project), or was donated by a third party, the value may be based on the Green Guide for Equipment Values, a purchase price quotation for a comparable piece of equipment, or other information that is sufficient to establish the fair market value.

Property (Right-of-Way)

Description

This type of in-kind contribution includes the purchase or donation of real property that is required for the construction or implementation of the project.

Conditions or Requirements for Eligibility

1. The Federal funds being matched may be from any program or combination of programs funded by Title 23 of the United States Code. Besides the Small Federal Programs, this includes such programs as the Surface Transportation Program, Highway Bridge Program, and many others. Some Federal funds earmarked by Congress may also use property as an in-kind contribution, depending on the specific authorizing legislation.

2. The property may be donated or acquired at any time during the development of the project, up until FHWA approval of the final voucher.

3. The donation or acquisition of the property shall not influence the environmental review of the project, such as: the evaluation of the purpose and need, consideration of alternative alignments, or the selection of the final project location.

4. The property is not a 4(f) property (e.g., a publicly-owned park, recreational area, or wildlife refuge).

5. If the property is donated by a third party:
   a) the third party shall be informed of its right to receive just compensation for its property;
   b) title to the property must be transferred from the third party to the LPA; and
   c) if the donated property is not needed because a different alignment or project alternative is chosen, title to the property shall be revested to the third party.

6. If the LPA purchases the property for the project:
   a) the acquisition shall be in accordance with all applicable State and Federal laws (for a summary of these requirements, refer to the Iowa DOT Local Public Agency Right of Way Manual);
   b) only the fair-market value of the property itself is eligible (other right-of-way incidental costs may not be counted); and
   c) the property was acquired specifically for the project (i.e., it was not already owned or purchased by the LPA for a different purpose).

Valuation and Documentation

Credit for in-kind contributions of property shall be based on the fair market value of property, as established by a current appraisal. The appraisal shall not include any increase or decrease in value caused by the project. However, there may be instances when mitigation actions of some type are necessary to make the property viable as part of the final project. Any and all of these necessary mitigation costs will be taken into account when making the final determination on the in-kind value of the property. Documentation shall include a copy of the appraisal. The appraisal shall conform to the current edition of the Iowa DOT Local Public Agency Right of Way Manual.

Services

Description

This type of in-kind contribution includes the value of labor, technical services, or other work effort by individuals which directly contributes to the development or construction of the project. These services may be performed by a third party, a consultant hired by the project sponsor, or the project sponsor's own employees. The project sponsor may be either the LPA or a co-sponsoring non-profit organization.

Conditions or Requirements for Eligibility

1. The Federal funds being matched shall be from one or more of the Small Federal Programs.

2. For Transportation Enhancement and Scenic Byways Program projects, the services shall be performed only *after* the initial FHWA Authorization of Federal funds and *before* FHWA approval of the final voucher.

3. For Recreation Trail Program projects, services for planning and environmental studies performed up to 18 months prior to FHWA Authorization are also eligible for use as an in-kind contribution.

4. For consultant services acquired by the project sponsor, the services must have been obtained through a qualifications-based selection process that meets the requirements of Title 23 of the Code of Federal Regulations, Part 172 (23 CFR 172).

Valuation and Documentation

The credit for in-kind contributions of services shall be based on the fair market value of such services. The fair market value can be determined a number of different ways, but in general, the value approved will be comparable to what it would cost the project sponsor if those services were performed by a construction contractor or a consultant. Additional guidance for each type of service contribution is provided below:

Volunteer Services

The value of volunteer services is determined through a negotiation process between the Iowa DOT and the project sponsor. The value of volunteer labor shall be estimated in a manner similar to the cost of completing such work by a competitive bidding process. Documentation shall include an itemized estimate that includes descriptions of the comparable construction job classifications, and the number of hours and wage rates for each. The wage rates used may include employee benefits and should be typical for the local area.

Professional Services

The value of professional services will be based on the maximum amount approved for the consultant, as shown on the unsigned final draft of the consultant contract. Documentation shall include a copy of the unsigned, final draft consultant contract.

Note: Because the costs for professional services provided as an in-kind contribution for Transportation Enhancement and Scenic Byways Program projects may not be incurred prior to FHWA Authorization, the project sponsor should not execute a contract with the consultant until the Administering Office has approved the proposed in-kind contribution of professional services. However, because Recreational Trail Program projects allow the costs of planning or environmental services incurred up to 18 months prior to FHWA Authorization to be counted as an in-kind contribution, the value of such services may be documented based on an executed contract or actual invoices for such services.

Sponsor Services

The value of services performed by employees of the project sponsor will be determined in the same way as volunteer services. However, under no circumstances shall the project sponsor's services be valued at an amount greater than what would be paid to a professional contractor doing the same work as the result of a competitive bid process, or in the case of professional services, a consultant acquired through a qualifications-based selection process.

The indirect costs associated with a project sponsor's employee services may also be counted as an in-kind contribution. However, indirect costs must be allocated to a project in accordance with an approved cost allocation plan that meets the requirements of the Office of Management and Budget (OMB) Circular A-87 (for LPA employees) or A-122 (for employees of a non-profit organization). If indirect costs are desired as part of an in-kind contribution, the LPA should contact the Administering Office for further assistance.

Procedures

The procedures to request and receive credit for in-kind contributions are as follows:

1. The LPA sends a written request for approval to the Administering Office for use of an in-kind contribution as credit toward the non-Federal share of project costs.

   The LPA's request for approval shall identify the project in the Statewide Transportation Improvement Program (STIP), specify the amount of in-kind credit that is being requested, provide a description of the requested contribution(s), and include all required supporting documentation. The request for an in-kind contribution should be submitted with the Concept Statement if possible. Otherwise, the request should be submitted as soon as the supporting documentation is available.

   Note: As outlined in the preceding sections for each type of in-kind contribution, Federal rules place limitations on when the work associated with the in-kind contribution may be performed. If the work has already been performed, it may not be eligible for use as an in-kind contribution.

2. The Administering Office reviews the completeness of the submittal. If the LPA's submittal lacks completeness, the Administering Office contacts the LPA and requests additional information.

3. When the LPA's request is acceptable, the Administering Office provides a copy of the in-kind request approval to the Iowa DOT Office of Finance (Project Accounting & Payables) and the Office of Contracts (if the Administering Office is one of the District Offices).

4. When requesting FHWA Authorization for other Federal-aid reimbursable work, the Iowa DOT documents the approved amount of in-kind contribution as part of the FHWA authorization request. If FHWA Authorization has already been requested, the Iowa DOT submits an amendment / modification to the previous FHWA authorization request(s) to document the approved amount of in-kind contribution.

5. After FHWA approval of the authorization request or amendment / modification, the Administering Office notifies the LPA the in-kind contribution has been approved and work associated with the approved in-kind contribution may proceed.

   The Administering Office's approval notice will identify the type of in-kind contribution and total dollar value approved. This dollar value will be the maximum amount of in-kind credit that can be applied toward the non-Federal share of project costs. The approved in-kind dollar value may only be increased if a subsequent in-kind request is reviewed and approved by the Administering Office. However, the approved in-kind dollar value may be decreased if the LPA fails to complete the in-kind work that was approved. In such case, the maximum approved value will be decreased on a pro-rated basis.

6. After obtaining the appropriate approvals from the Administering Office, the LPA submits requests for reimbursement of other Federal-aid reimbursable work after expenses are incurred.

7. Before crediting the approved in-kind amount, the Administering Office verifies that the approved in-kind contributions were accomplished. If only part of the approved in-kind contribution has been completed, the Administering Office will credit only that portion that has been completed to date.

8. After verifying the in-kind contribution was accomplished, the Administering Office reimburses the LPA for other eligible and authorized expenses, taking into account the amount of in-kind that has been reviewed and approved to-date.

Example Calculations

The purpose of receiving credit for in-kind contributions is to reduce the LPA's net cash outlay required to satisfy the non-Federal share of the total project costs. However, the effect of applying in-kind contributions to a specific project is dependent on several variables. These variables include: the total value of the in-kind contributions, the maximum amount of Federal funds available for the project (STIP limit), and the total Federal-aid reimbursable costs.

To illustrate the effects each of these variables can have on the net cash outlay required by the LPA, several example calculations are provided on the following page.

Example In-Kind Calculations

Cost Item	**Baseline** (No In-Kind)	**Example 1** (Reimbursable Costs Control)	**Example 2** (STIP Limit Controls, In-Kind helps some)	**Example 3** (STIP Limit Controls, In-Kind has no effect)	**Example 4** (Neither Controls)
STIP Limit (1)	$135,000	$135,000	$85,000	$68,000	$135,000
Reimbursement Rate (2)	80%	80%	80%	80%	80%
Reimbursable Costs (3)					
Preliminary Engineering	$10,000	$10,000	$10,000	$10,000	$10,000
Right-of-Way	$15,000	$15,000	$15,000	$15,000	$15,000
Construction Engineering	$5,000	$5,000	$5,000	$5,000	$5,000
Construction	$70,000	$70,000	$70,000	$70,000	$70,000
Total Reimbursable Costs	$100,000	$100,000	$100,000	$100,000	$100,000
Approved In-Kind Value (4)	$0	$60,000	$30,000	$30,000	$10,000
Total Project Costs (5)	$100,000	$160,000	$130,000	$130,000	$110,000
80% of Total Project Costs	$80,000	$128,000	$104,000	$104,000	$88,000
Federal Funds Payable (6)	$80,000	$100,000	$85,000	$68,000	$88,000
Local Cash Required (7)	$20,000	$0	$15,000	$32,000	$12,000
Effective Reimbursement Rate (8)	80%	100%	85%	68%	88%

Notes:

(1) The STIP limit represents the maximum amount of Federal funds programmed for the project in the Statewide Transportation Improvement Program (STIP).

(2) The reimbursement rate is the Federal government's pro-rata share of eligible project costs. This is the percentage of eligible and properly documented project costs which will be reimbursed to the LPA. These examples use a reimbursement rate of 80%, which is typical for most Federal-aid highway programs.

(3) Reimbursable costs are any costs that may be reimbursed with Federal funds. Such costs must be for eligible project activities and FHWA authorization must be obtained prior to beginning any work which will be reimbursed with Federal funds.

(4) The approved in-kind value is established as per the guidance contained in this I.M.

(5) Total project costs are the sum of all reimbursable costs, plus the value of any in-kind contributions that have been reviewed and approved by the Administering Office.

(6) The Federal funds payable represents the maximum amount of Federal-aid reimbursement. This figure is equal to the total project costs multiplied by the reimbursement rate, unless this amount exceeds either: (a) the total reimbursable costs, as shown in Example 1; or (b) the STIP limit, as shown in Examples 2 and 3. If 80 percent of the total project costs exceeds either (a) or (b), the Federal funds payable will be equal to the lesser of these two.

(7) The local cash required is calculated by subtracting the Federal funds payable from the total reimbursable costs. This amount represents the net cash outlay required by the local agency.

(8) The effective reimbursement rate is shown for comparison purposes only. This rate is calculated by dividing the Federal funds payable by the total reimbursable costs. The effective reimbursement rate illustrates the effect of the in-kind contribution in each of the examples shown above. Generally speaking, in-kind contributions have the effect of increasing the amount of Federal funds payable, subject to the limitations discussed above.

Summary of Example In-Kind Calculations

The preceding examples demonstrate some important points about in-kind contributions:

- The maximum amount of Federal-aid that can be received is limited by either the total reimbursable costs (see Example 1), or the STIP limit (see Examples 2 and 3), whichever is less.
- When the STIP limit is less than the Federal share of reimbursable costs, in-kind contributions have no effect on decreasing the amount of local cash required (see Example 3).

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.105
Subject:	Concept Statement Instructions	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing document, which is included on the pages immediately following this placeholder page:

- Packet, Index No. 6, Concept Statement Instructions

When I.M. 3.105 is complete, this placeholder page and the existing document referenced above should be removed and replaced with the new I.M. 3.105.

CONCEPT STATEMENT INSTRUCTIONS

Submittal Procedures

The Concept Statement for Local Federal Aid Projects (Form 517001) is available on-line in both Microsoft Word and the Iowa DOT's eForms XML format. This form is also included in Index No. 6 of the Project Development Information Packet (Packet).

It should be received by the Iowa Department of Transportation (Iowa DOT) Administering Office by the date listed in the Critical Path for Project Development Memorandum, located in the General Information Section of the Packet.

The steps involved in the Concept Statement submittal and review process are shown on Chart 3 – Concept Statement Process and Chart 6 – Environmental Process Overview, located in the Flow Charts Section of the Packet.

The Concept Statement may be submitted by e-mail, provided that all of the required documents and information are attached to the e-mail. Acceptable file formats for e-mail attachments include: Microsoft Word(*.doc), Adobe Acrobat (*.pdf), Joint Photograph Experts Group (*.jpg), Graphic Interchange Format (*.gif), and Tag Image Format (*.tif). Contact the Administering Office for the appropriate e-mail address to use.

If all of the required information cannot be provided in electronic format, submit hard copies in accordance with the Critical Path Memo.

Submit the Concept Statement with a cover letter or e-mail. Use cover letter or e-mail to identify any unusual features of the project that are not adequately addressed by the information shown on the Concept Statement.

If it is known that the project will require a design exception, the design exception documentation should also be included with the Concept Statement submittal. If the need for a design exception becomes apparent later, submit the design exception as soon as possible, but no later than the preliminary plan submittal. Refer to Packet Index No. 5 - Design Criteria, for more information on design exception requests.

General Information (Page 1)

County / City: Enter the county and city in which the project is located. Leave the city space blank if the project is only in the county.

Date Submitted: Enter the date that the Concept Statement is submitted. Check "First" or "Revised" as appropriate to indicate if the Concept Statement is being submitting for the first time or if it has been revised. This helps alert Iowa DOT reviewers that a change to the project concept has been made.

Project Number: Enter the project number assigned by the Iowa DOT. If a project number has not yet been assigned, request a number from the Iowa DOT. Users of the Transportation Program Management System (TPMS) may request project numbers using this system. Otherwise, contact the Administering Office to obtain a project number. Include the project number on all project related correspondence.

STIP Year: Write the Federal fiscal year (FFY) or years that the project appears in the current Statewide Transportation Improvement Program (STIP). If the project is not in the current STIP, leave this field blank. If the project is not programmed for the FFY in which Federal funds will need to be authorized, contact the appropriate Regional Planning Affiliation (RPA) or Metropolitan Planning Organization (MPO) and request an amendment or revision to their Transportation Improvement Program (TIP). The FFY begins on October 1 and ends September 30.

Estimated Letting: Enter the estimated date that the project will be let. Check to make sure the proposed letting date is in conformance with the dates listed on the Critical Path for Project Development Memorandum. In addition, the estimated letting date should fall within the FFY in which the Federal funds are programmed.

> Exception: October lettings must have Federal funds programmed in the previous FFY. This is because the Federal funds are actually authorized about 1 month prior to letting.

If the Federal funds are not programmed consistent with the estimated letting date, contact the appropriate RPA or MPO to request an amendment or revision to their TIP.

Contact Information: List the contact information for the person who has responsible charge for completing all project development activities. This information is needed to establish proper communication for the project.

Concept Statement Items (Pages 1 & 2)

1.a Project Location(s): For street and highway projects, enter the street name(s) and the beginning and ending points for the project. This description should match what is listed in the STIP. This can be more descriptive but cannot expand the project beyond the project limits established in the STIP. If the project limits or description shown in the STIP is incorrect, work with the appropriate RPA or MPO to correct it. For non-highway projects such as restoration of historic buildings, enter the street address.

Attach a location map that shows the beginning and ending points of the project. Include sufficient detail (i.e., major street names, landmarks, etc.) such that the project location can be easily located.

1.b Project Title / Description: For non-highway type projects, enter the project title or brief description. For example, “Phase I Depot Renovations.” For street and highway projects, this space may be left blank.

2. Type of Work: Indicate the general type of work by checking all of the boxes that apply for the project. If the project does not fit one or more of these types of work, check "Other" and describe the general type of work in the blanks beside it.

3. Project length: Enter the length of the project to the nearest tenth of a mile or kilometer. All roadway and trail projects require a project length. Historic restoration or bridge-only projects do not require a length.

4. Existing Bridge Information : Enter the information for any bridge or large culvert (total opening width greater than 20 feet) structures on the project. If there is more than one structure on the project, attach a list of this information for each structure to the Concept Statement.

5. Project Costs: Check "Yes" for those costs for which Federal-aid reimbursement will be requested. Check "No" if Federal-aid reimbursement will not be requested, or if the cost item does not apply to the project. If Federal-aid will be requested, enter the total estimated costs for each cost item shown. If the current estimate of total costs is significantly different than shown in the STIP, work with the appropriate RPA or MPO to correct it.

   CAUTION: Before proceeding with any work for which Federal-aid reimbursement will be requested, you must receive written notification from the appropriate Administering Office that FHWA authorization has been obtained for that work. Any costs for work done prior to FHWA authorization are not eligible for Federal-aid reimbursement.

   For each cost item shown, refer to the Packet documents or indices noted for the procedures to request Federal participation. Please Note: Checking "Yes" to any of these cost items does not constitute a formal request for Federal participation.

   If an in-kind contribution is proposed, include the estimated value of the in-kind contribution. Do not include this value in any of the cost items shown above. If the in-kind value can be determined at the time of the Concept Statement submittal, attach the in-kind request and supporting documentation. Otherwise, submit the in-kind request as soon as possible, but no later than the Check Plan submittal. For more information, refer to the In-Kind Contribution Guidelines, located in Index No. 4 of the Packet.

6. Total Federal-Aid (as shown in STIP): Enter the amount of Federal-aid shown in the STIP for the project. If the project is funded by more than one Federal-aid program, enter the total of Federal-aid funding for all Federal-aid programs that apply. This amount should be the same as shown in the STIP. If the Federal-aid shown in the STIP is incorrect, work with the appropriate RPA/MPO to correct it.

7. Estimate of Land or Property Acquisition Impacts: Before answering the questions in this section, consider the following:

First, if the project uses Federal-aid reimbursement for any aspect of the work, the project must comply with all applicable Federal and State regulations for right-of-way acquisition, even if no Federal-aid will be used for right-of-way acquisition. For assistance, contact the Administering Office. The LPA should also refer to the Office of Right-of-Way Local Public Agency Manual for more information on Federal and State right-of-way acquisition regulations and procedures.

Second, the LPA may not check "No" to these questions because the needed project right-of-way has already been acquired as part of an earlier phase of the same project. When right-of-way will be acquired as part of an earlier non-Federally funded phase of a project, and Federal funds will be used for a later phase of the same project, the LPA should submit a Concept Statement before beginning work on any phase of the project and check "Yes" to the appropriate items listed here to indicate the right-of-way needs for the project as a whole.

7.a-b. Check "Yes" if the LPA will need to obtain any type of temporary or permanent property rights (e.g., access, grading, use as storage, etc.) in order to construct the project. If yes, include an estimate of the number of acres to be acquired for temporary and permanent easements. This estimate does not need to be precise. The purpose of this estimate is to assist the Iowa DOT evaluate the magnitude of environmental impact the project is likely to cause.

7.c. Check "Yes" if any borrow material will be required to construct the project. If yes, check as many boxes as appropriate to indicate the proposed source or sources of borrow material.

Check "New borrow area" if the contract documents will designate a site outside of the existing right-of-way for use by the contractor.

Check "Contractor furnished" if the contract documents will specify that the contractor shall furnish the borrow material from a site of their choosing. For contractor furnished borrow areas (referred to as "Alternate Borrow Areas" in Section 2102.06 of the Iowa DOT Standard Specifications) the contractor shall be responsible for the necessary archeological reviews.

Check "Existing borrow area" if the borrow material will be supplied from a borrow site or stockpile owned by the Local Public Agency (LPA). It is assumed that such a borrow site or stockpile location has been previously disturbed. If not, check "New borrow area" instead.

Check "Within existing right-of-way" if the borrow material will come from a location within the existing roadway right-of-way. Such borrow areas do not need an archeological review because they are assumed to have been previously disturbed.

Check "Not yet determined" if the source of borrow material has not yet been identified. However, if checked, a revised Concept Statement shall be submitted as

soon as the source of the borrow material is known. The project will not be granted environmental concurrence until this information is supplied. Without environmental concurrence, the project may not proceed with right-of-way acquisitions or to letting. If a new borrow area (i.e., undisturbed land) will be used, either as optional or mandatory, this area will need to be included in the archeological reviews, as referenced in question 9.a.

Note: New or existing borrow areas may be designated as either optional or mandatory by the contract documents. If a mandatory borrow area is being considered, refer to Condition No. 6 in the Public Interest Findings document, located in Index No. 8.

7.d. Check "Yes" if any properties will be totally acquired for construction of the project, even if later a portion of the property will be disposed of as excess right-of-way by the LPA. If yes, provide an estimate, even if only a very rough one, of the number of properties that will be totally acquired.

7.e. Check "Yes" if any residential or business relocations will be required for construction of the project. If yes, provide an estimate, even if only a very rough one, of the total number of relocations that are likely, including both residential and businesses.

7.f. Check "Yes" if the access for any property will be permanently changed and such change will result in a negative impact on the property, either in terms of ease of access or property value.

8. Public Acceptance: If public opposition is anticipated, check "Yes" and explain the nature and reasons of the opposition. If more space is needed, use the cover letter to explain instead. If public opposition is expected, public hearings or meetings should be held to get public input into the project development process. This question must also be answered.

9. Environmental Impacts: All Federal-aid projects must comply with the process prescribed by the National Environmental Protection Act (NEPA) and the associated environmental regulations. Many of these questions are designed to help identify which aspects of NEPA process or regulations are applicable to the project.

Several of the questions within this section use the term "proximity." Except where noted otherwise, features or resources will be considered in proximity to the project if they are within or adjacent to the existing or proposed right-of-way, including temporary easements. In other words, a feature or resource is in proximity to the project if it is close enough that some type of impact or effect can be reasonably foreseen.

For some types of features or resources, an impact can occur even if the feature or resource is not physically impacted by the project. For example, a highway project may affect the view from a scenic overlook or historic landmark. In some cases, this could be considered

a negative impact. Therefore, distance alone cannot always be used to determine if the feature or resource is in proximity to the project.

9.a. In general, land is not considered disturbed unless it was the site of prior construction activity that disturbed the soil to such a depth that the probability of finding archaeological or historic artifacts is unlikely. Farming activities may not disturb archeological or historic artifacts that lie beneath the surface of the ground. Therefore, areas that have been farmed should generally be considered as undisturbed land, unless prior disturbance can be documented.

To document that any areas to be acquired as permanent right-of-way, temporary easements, or new borrow areas for the project have been previously disturbed, attach photos, maps, plans, or drawings that show the location of the areas to be acquired. Also include a detailed description that identifies the nature of activities that caused the disturbance and the general timeframe in which they occurred.

9.b. For purposes of this question, known archeological sites shall include any of the following:

- Sites currently listed on the National Register of Historic Places (NRHP). The State Historical Society of Iowa maintains an on-line list of NRHP properties and districts in Iowa. Note: For some sites listed on the NRHP, a location is not given due to the cultural or religious significance of the site.

- Sites identified by markers, plaques, or signs.

- Sites within the same section(s), township and range as the project, as identified by I-Sites. I-Sites is an on-line archeological Geographic Information System (GIS) and database provided by Iowa's Office of the State Archeologist (OSA).

9.c. Any structure over 50 years old will require, as a minimum, an historical evaluation to determine its historical significance. Such structures may or may not be historic. In some cases, an historical survey may also be required.

9.d. For purposes of this question, known historic buildings, districts, bridges, roadways, or structures shall include any of the following:

- Buildings, districts, bridges, roadways, or other structures listed on the NRHP. See the Iowa NRHP list, as noted in 9.b above.

- Buildings, districts, bridges, roadways, or other structures identified as historic by markers, plaques, or signs.

(1) Historic Roadways: Check "Yes" if the project is on or intersects an historic roadway, such as the Lincoln Highway. Historic roadways are often marked

with signs, plaques, or monuments. Local historical societies may also be able to provide assistance in identifying other historic roadways in the project area.

(2) Brick Pavers: Brick pavers may or may not have historical value. Additional information will be needed to determine if special measures are needed to mitigate impacts. Please indicate in the cover letter if the pavers are under asphalt, have been disturbed by utility installation, or if there are historic districts or historic structures nearby.

(3) Historic Bridge: Check "Yes" if the project involves any bridges listed on the Iowa DOT's Historic Bridges of Iowa web page. This on-line inventory shows all bridges that are either eligible for or are currently listed on the NRHP.

9.e Check "Yes" if the archeological or historical investigations indicated by questions 9.a – 9.d are complete and have been approved by the State Historical Preservation Officer (SHPO). If yes, attach a copy of the approval letter from the SHPO. Check "No" if these investigations are not complete, or have not been approved by the SHPO. If questions 9.a – 9.d have all been answered no, check "N/A."

Note: If archeological or historical investigations are required but have not been approved, the Iowa DOT's environmental review of the project cannot be completed until this information is received. These investigations may consist of an archeological assessment or survey, and / or an historical evaluation or survey, depending on the likelihood of impacts to archeological sites or historic properties. For more information concerning the necessary archeological and / or historical investigations, refer to the Cultural Resource Regulations, located in Index No. 6.

9.f. Check "Yes" if any recreational areas or wildlife or waterfowl refuges are in proximity to the project. If yes, answer the additional questions according to the instructions below:

(1) Check "Yes" if the property has been officially designated as a recreational area or wildlife refuge by the agency having jurisdiction over the property; or if the agency having jurisdiction has determined that one of the property's primary uses or functions is for recreational or wildlife refuge purposes. To be considered a wildlife refuge, the primary function of the property must be to serve as a sanctuary for the protection of animal species.

(2) Check "Yes" if a public agency possesses the deed to the property; or if the public agency has a permanent easement for use of the property.

(3) Check "Yes" if the recreational area can be visited by the general public. The recreational area does not have to be open 24 hours a day to be considered open to the public. Check "No" if visitation is permitted for a select group only. This question is only applicable to recreational areas. Check "N/A" if only wildlife refuges are in proximity to the project.

If the Environmental Data Sheet (Form 517006) is required, refer to the Environmental Data Sheet Instructions for more information.

9.g. The term, "waters of the United States" is defined in 33 CFR 328.3. In summary, it refers to any navigable body of water and all tributaries to a navigable body of water, even ones that flow intermittently.

Wetlands are also defined by this regulation as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Refer to the Corps of Engineers Wetlands Delineation Manual, 1987 for detailed technical assistance in locating wetlands. For additional information about the U.S. Army Corps of Engineers 404 Permit, refer to County Engineers Instructional Memorandum (I.M.) 3.13.

9.h. Check "Yes" if any part of the project construction will be in the flood plain or floodway. Section 455B.261 of the Code of Iowa defines the term "flood plain" as, "the area adjoining a river or stream which has been or may be covered by flood water." This Code section also defines the term "floodway" as, "the channel of a river or stream and those portions of the flood plains adjoining the channel which are reasonably required to carry and discharge the flood water or flood flow of any river or stream." County Engineers I.M. 3.131 contains a detailed description of the Iowa DNR regulations that govern construction in the flood plain or floodway.

9.i. For more information on the National Pollutant Discharge Elimination System (NPDES) permit requirements for construction projects, refer to Storm Water Permits located in Index No. 8 of the Packet.

9.j. The Farmland Conversion Impact Rating (Form AD-1006) is required by the Farmland Protection Policy Act. For the definition of farmland and instructions for complying with this legislation, refer to the Farmland Protection Policy Act Guidelines and Flow Chart No. 6E, Farmland Protection Policy Act Process, located in Index No. 6 of the Packet. If Form AD-1006 has already been submitted and reviewed, no further action is necessary. If not, begin this process as soon as the amount of farmland to be acquired is known.

9.k. The State threatened or endangered species are listed in 571 IAC 77. The Federal threatened or endangered species are listed in 50 CFR 17, Subpart B. The U.S. Fish and Wildlife service also provides a Threatened and Endangered Species System, an on-line resource that can be used to display a list of Federal threatened or endangered species in Iowa.

To determine if there are any Federal or State threatened or endangered species in the project area, the local County Conservation Board may be able to provide assistance.

The Iowa DNR also will conduct a Natural Resources review upon request. This review, among other things, will include identification of any State or Federal threatened or endangered species in the project area. Refer to the Iowa DNR Environmental Reviews web page for more information.

If the Environmental Data Sheet (Form 517006) is required, refer to the Environmental Data Sheet Instructions for more information.

9.l. If the project will require the clean-up or removal of any hazardous materials, check "Yes" and list the materials in the space provided. Typical hazardous materials encountered in transportation projects may include, but are not limited to, contaminated soil and asbestos. Soil may be contaminated from leaking fuel tanks, surface fuel spills, industrial waste areas, etc. Asbestos may be encountered when removing or demolishing buildings or bridges (e.g., utility conduit insulation). Before removing or demolishing buildings or bridges, the structure should be inspected for possible asbestos containing materials.

The Iowa DOT neither regulates hazardous materials or waste sites nor monitors compliance with the applicable State and Federal regulations. However, the Iowa DOT has developed a Notification of Demolition (Form 536101), which may be used for transportation projects to provide the required notice to the Iowa Department of Natural Resources (Iowa DNR). For more information about hazardous materials inspections, testing, notification, and removal procedures, refer to the Iowa DNR Air Quality and Contaminated Sites web pages.

9.m. Check "Yes" if the project will increase noise levels to the point that interference with adjacent lands uses may occur, or if air quality may be significantly affected by increased levels of congestion, or if storm water runoff will significantly affect the water quality of nearby streams or lakes; and these anticipated impacts are likely to raise public concern or require special mitigation. If yes, describe which type of impacts are likely to occur and if any special mitigation measures are proposed.

Check "No" for typical noise, air quality, and water quality impacts caused by construction activities that will be properly permitted or regulated.

10. Miscellaneous Items:

a. Certain construction activities may require notification of the Federal Aviation Administration (FAA) if the proposed construction, including construction equipment, is located within a defined area around an airport. See County Engineers I.M. 3.15 for more details.

b. Railroad Crossings: If the project involves a new railroad crossing, or requires modifications to the existing railroad crossing materials, underpass or overpass structures, or signals, an agreement between the LPA and the railroad will be required. An agreement will also be required if the railroad places additional

requirements on the contractor, beyond those required by the Iowa DOT Standard Specifications (e.g., higher liability insurance coverage). It is critical to contact the appropriate railroad officials early in the project development process to determine what they will require. Processing and approving a railroad agreement can be an extremely lengthy process. If the project requires a railroad agreement, begin this process immediately.

c. Intelligent Transportation Systems (ITS) elements typically include variable message signs, traffic monitoring devices, and remote traffic control and / or incident management centers. All ITS projects that receive Federal-aid are required to be based on systems engineering analysis. System engineering analysis insures consistency with a regional architecture or, in the absence of a regional architecture, consistency with the national architecture. If no regional architecture is in place at the beginning of the project, the project may proceed with the completion of a project architecture at the time of the project design. A regional architecture is required to be in place within four years of the project beginning.

Project Design Elements (Pages 3 - 5)

If the project contains more than one significantly different roadway section, use a separate page for each section. For example, separate pages should be used for rural (open ditch) vs. urban (curb and gutter) cross sections; 2-lane vs. 4-lane sections; or mainline vs. side road sections. In most cases, only one or two of these pages will be needed. Any unused pages may be discarded.

Check to the appropriate Federal Functional Classification Map to determine the functional classification for each roadway section listed. For cities with a population of 5,000 or greater, refer to the urban area maps. For counties or cities less than 5,000 population, refer to the county maps. Check "N/A" if the facility is a trail or shared use path.

Existing traffic volume data for some city and county roads may be obtained from Iowa DOT Average Annual Daily Traffic Flow Maps.

For an explanation of each design element listed, refer to the design guidelines listed. The urban design guidelines are contained in Index No. 5 of the Packet. The rural design guidelines are contained in County Engineers I.M.s 3.210 and 3.214. For bicycle trails or shared use paths, refer to the Iowa Statewide Urban Design Standards, Chapter 8, Section 2, Table 2.1. The Urban Design Standards are part of the Statewide Urban Design and Specifications (SUDAS) manuals.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.110
Subject:	Environmental Data Sheet Instructions	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing document, which is included on the pages immediately following this placeholder page:

- Packet, Index No. 6, Environmental Data Sheet Instructions

When I.M. 3.110 is complete, this placeholder page and the existing document referenced above should be removed and replaced with the new I.M 3.110.

ENVIRONMENTAL DATA SHEET INSTRUCTIONS

Submittal Procedures

The Environmental Data Sheet (Form 517006) is available on-line in both Microsoft Word and the Iowa DOT eForm XML formats. This form is also included in Index No. 6 of the Project Development Information Packet (Packet).

The Environmental Data Sheet submittal is part of the environmental review process shown on Chart 6D – Section 4(f) Process, located in the Flow Charts section of the Packet. This form is designed to provide additional information regarding potential environmental impacts, specifically regarding Section 4(f) involvement and threatened or endangered species. Section 4(f) is a reference to the section of the Department of Transportation Act of 1966 which requires federally funded transportation projects to avoid or limit impacts to parks, recreational areas, wildlife and water fowl refuges, and historic properties. Depending on the extent and severity of the proposed impacts, a formal 4(f) Statement may have to be prepared.

If the questions on the Environmental Data Sheet can be answered at the time of the Concept Statement (Form 517001) submittal, include this form with the Concept Statement. Otherwise, submit the Environmental Data Sheet as soon as possible, but no later than the preliminary plan submittal. For the appropriate submittal dates, refer to the Critical Path Memorandum for Project Development, located in the General Information section of the Packet.

The Environmental Data Sheet may be submitted by e-mail, provided that all of the required documents and information are attached to the e-mail. Acceptable file formats for e-mail attachments include: Microsoft Word(*.doc), Adobe Acrobat (*.pdf), Joint Photograph Experts Group (*.jpg), Graphic Interchange Format (*.gif), and Tag Image Format (*.tif). Contact the Administering Office for the appropriate e-mail address to use.

Submit the Environmental Data Sheet with a cover letter or e-mail. Use cover letter or e-mail to provide any additional information not included on the Environmental Data Sheet.

General Information

Date Submitted: Enter the date that the Environmental Data Sheet is submitted. Check the appropriate box to indicate if this is the first submittal or a revised submittal.

County / City: Enter the county and city in which the project is located. Leave the city space blank if the project is only in the county.

Project Number: Enter the project number assigned by the Iowa DOT. If a project number has not yet been assigned, request a number from the Iowa DOT. Users of the Transportation Program Management System (TPMS) may request project numbers using this system. Otherwise, contact the Administering Office to obtain a project number. Include the project number on all project-related correspondence.

Section A. Recreational Areas or Wildlife Refuges

1. Provide the following information for each property that meets the criteria outlined in question 9.f of the Concept Statement. If more space is needed, attach additional sheets.

   Description: Provide the name and location of the property. Locate the property by means of street addresses or intersections; section, township and range; or any other method that allows a person unfamiliar with the area to locate the property. Also include the name of the government agency with jurisdiction over the property (e.g., city park board, county conservation board, Iowa DNR, etc.).

   Total Property Area: Provide an estimate of the total size of the property in acres. This figure does not need to be exact.

The remaining questions in this section are designed to identify the nature of any anticipated impacts to the properties identified in question A.1. For each of the remaining questions in this section, any "Yes" answer will require a description of the anticipated impacts. If more space is needed for any of these descriptions, attach additional sheets as necessary.

The description of the anticipated impacts shall include the following:

Their physical extent: Describe in as much detail as possible the limits or portions of the property that will be impacted. Estimate the approximate area that will be impacted, either in acres or using length and width dimensions, as appropriate. Use of photographs, maps, or drawings of the areas that will be impacted is recommended.

Their severity: Describe the level or severity of the anticipated impacts to the property. For example, will the impacts be minor, such that the property's current function remains largely unaffected? Or will the impacts be major, substantially altering the property's ability to function as it currently does? Specifically describe any changes in the property's function that are likely to occur because of the project.

Avoidance: Explain what steps have been taken to avoid the property. For each of the identified properties, avoidance is always the preferred alternative. However, if there are no feasible and prudent alternatives it may not be possible to avoid the property.

An alternative is feasible if it can be designed to engineering standards while meeting the purpose and need for the project. An alternative is prudent if it does not present unique problems, have unusual factors, or that the cost, social, economic, or environmental impacts do not reach extraordinary magnitudes.

Cost alone is not sufficient to show that avoidance is not feasible or prudent. However, when combined with the other factors listed, it may be considered. If possible, attach cost estimates or other documentation to establish that avoidance would not be feasible or prudent.

Minimization and Mitigation: If there are no feasible and prudent alternatives to avoidance, minimization and / or mitigation of impacts will be required. Describe in detail the proposed efforts to minimize and / or mitigate the impacts.

2. Check the appropriate box to indicate if any part of the identified properties will be acquired as permanent right-of-way. If "Yes," describe the anticipated impacts in as much detail as possible, following the guidelines stated above.

3.a. Check the appropriate box to indicate if any part of the identified properties will be acquired as a temporary easement.

3.b. Check "Yes" if the property will suffer a permanent physical change. The change would be considered adverse if it affects the ability of the property to function as intended. For example, if a highway project uses a temporary easement to fill in part of a wetland area, after the temporary easement expires the impact on the wetland area will remain, decreasing the amount of habitat for the species present.

Check "No" if the physical impacts caused by the project are only temporary in duration. For example, access to an historic property may be temporarily limited by construction; but when construction is complete, full access is restored.

3.c. Check "Yes" if work done in the temporary easement is such that the nature and magnitude of the resulting changes to the property are major. For example, the amount of work would be considered major if it alters the historically significant aspects of an historic property.

Check "No" if the work results in changes to the property that are minor in nature or magnitude. For example, if a temporary easement is needed to do some minor grading on a park property, but the functions of the park are basically unaffected by the grading, the work would be considered minor.

3.d. Check "Yes" if the property will not be restored to a condition that is at least as good or better than its original condition, keeping in mind the intended purpose of the property. For example, if a temporary easement destroys the native vegetation of a prairie preservation area, and the easement area was reseeded with a standard highway-type grass seed mixture, this would be considered a change from its original condition.

3.e. Check "Yes" if <u>all</u> of questions A.3.b through A.3.d are checked "No," <u>and</u> the agency with jurisdiction over the property has concurred with <u>all</u> of these determinations. If the agency has concurred, attach written documentation from the agency that specifically addresses these three determinations. If the agency has not concurred, check "No" and attach written documentation that explains its concerns. Written documentation may be a letter, e-mail, or memo from the responsible agency official. If not all of questions A.3.b through A.3.d are checked "No," check "N/A."

3.f. If <u>any</u> of questions A.3.b through A.3.d. are checked "Yes," describe the anticipated impacts in as much detail as possible, following the guidelines stated above.

4. Check all the boxes that apply and describe the anticipated impacts in as much detail as possible, following the guidelines stated above.

This question addresses possible impacts that are not a direct physical impact (i.e., permanent right-of-way or temporary easement), but nonetheless may affect the property. These types of impacts occur if the project is close enough to the property that the activities, features, or attributes associated with the property are substantially impaired or diminished.

Check "Noise impacts" if the projected noise level increase attributable to the project substantially interferes with the use and enjoyment of the property. For example, if the noise levels would interfere with sleeping in a campground area, or would detract from the

enjoyment of an historic site where quiet is a feature that contributes to the site's significance, this would be considered a noise impact.

Check "Aesthetic impacts" if the project will substantially impair the visual or aesthetic features or attributes of the property, where such features or attributes are considered important contributing elements to the cultural, recreational, or environmental value of the property. For example, if a highway project will obstruct or eliminate the primary views of an architecturally significant historic property, or if it will substantially detract from the setting of a park or historic property that derives its value largely because of its setting, this would be considered an aesthetic impact.

Check "Reduced access" if the project will permanently restrict or reduce access to a park, recreation area, or historic site, thereby limiting its usefulness.

Check "Vibration" if the project will cause vibration levels substantial enough to impair the use of or enjoyment of the property. For example, a highway overpass may produce vibrations that could affect the structural integrity or usefulness of an historic building.

Check "Ecological intrusion" if the project substantially diminishes the value of wildlife habitat in an adjacent wildlife refuge, or if the project interferes with wildlife migration patterns or critical life cycle processes (e.g., movements to or from a breeding or nesting area).

5. Check "Yes" if the identified property was originally acquired or developed for conservation or outdoor recreational purposes with Federal funds supplied by the Land and Water Conservation Fund Act. If yes, this constitutes Section 6(f) involvement. Section 6(f) is a reference to the section of this Act which protects land that was acquired with Land and Water Conservation Act funds from being used for purposes other than public outdoor recreation.

   Conversion of any such properties from recreational to other purposes will require prior Federal and State approval. For assistance in obtaining the necessary approvals, refer to the contacts listed on the Iowa Department of Natural Resources' Land and Water Conservation Fund web page.

Section B. Threatened or Endangered Species

1. List, by common name and scientific name (if known), the threatened or endangered species present in proximity to the project. Describe the location of each species habitat with respect to the proposed project limits.

2. Check "Yes" if there will be any Federal or State threatened or endangered species affected by the project. If yes, describe the anticipated impacts in as much detail as possible, following the guidelines stated above. If any such species will be affected, consultation and coordination with the Iowa Department of Natural Resources (for state listed species) and the U.S. Fish and Wildlife Service (for federal listed species) will be required. A qualified biologist will also need to be retained to assist with this consultation and coordination.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.112
Subject:	FHWA Environmental Concurrence	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing documents, which are included on the pages immediately following this placeholder page:

- Packet, Index No. 6, NEPA Classification Process
- Packet, Flow Charts, Chart 6 – Environmental Process Overview
- Packet, Flow Charts, Chart 6A – Environmental Assessment / FONSI Process
- Packet, Flow Charts, Chart 6B – Environmental Impact Statement / ROD Process
- Packet, Flow Charts, Chart 6C – Section 106 Process
- Packet, Flow Charts, Chart 6D – Section 4(f) Process

When I.M. 3.112 is complete, this placeholder page and the existing documents referenced above should be removed and replaced with the new I.M 3.112.

NEPA Project Classification Process

For Local Public Agency (LPA) Federal-aid Projects

The National Environmental Policy Act of 1969 (NEPA) mandates that federal agencies consider the environmental consequences of their actions. Federal Highway Administration (FHWA) has delegated NEPA document preparation to the Iowa DOT, but the final approval of NEPA project classification and the NEPA document is the responsibility of the FHWA.

Submittal of the Concept Statement (Form 517001) marks the beginning of the NEPA classification process. There are three main NEPA project classifications as listed in 23 CFR 771.115. These classifications describe the level of documentation required to satisfy the procedural requirements of NEPA. They are described below from the simplest to the most complex level of required documentation. Note: These descriptions only provide a general framework for evaluating anticipated project impacts. Each project will be evaluated individually according to the specific types of impacts that may occur.

Categorical Exclusion (CE) Projects in this classification do not individually or cumulatively have a significant environmental impacts. There are two types of CEs.

1. Programmatic CE: This type of CE is for non-controversial projects with no potential for environmental impacts. The project fits the Programmatic CE Agreement between Iowa DOT Office of Location and Environment (OLE) and FHWA. Projects meeting the Programmatic CE criteria do not require review and concurrence by FHWA. However, FHWA does periodic audits of the Iowa DOT's Programmatic CE process to ensure it functions in accordance with the Programmatic Agreement for CEs.

   Examples of a Programmatic CE would include rehabilitation, resurfacing or restoration (3R) projects or bridge replacement projects with minor right-of-way needs.

2. Individual CE: This type of CE is for non-controversial projects containing unusual environmental circumstances (such as a 4(f) property or other environmental issues). It would also include projects that do not fit the programmatic CE agreement, but from past experience do not have potential for significant environmental impacts. An individual CE requires FHWA approval.

   Examples of an Individual CE would include: 3R projects, bridge replacement projects with minor right-of-way needs and / or minor alignment shifts, projects that involve an historic bridge, or projects that involve minor impacts to parks or recreational areas.

Environmental Assessment (EA) This classification is used for projects where it is uncertain if there will be significant environmental impacts. The purpose of the EA is to find out if there will be significant impacts to the environment. If the EA reveals that significant impacts are likely, an EIS will be required.

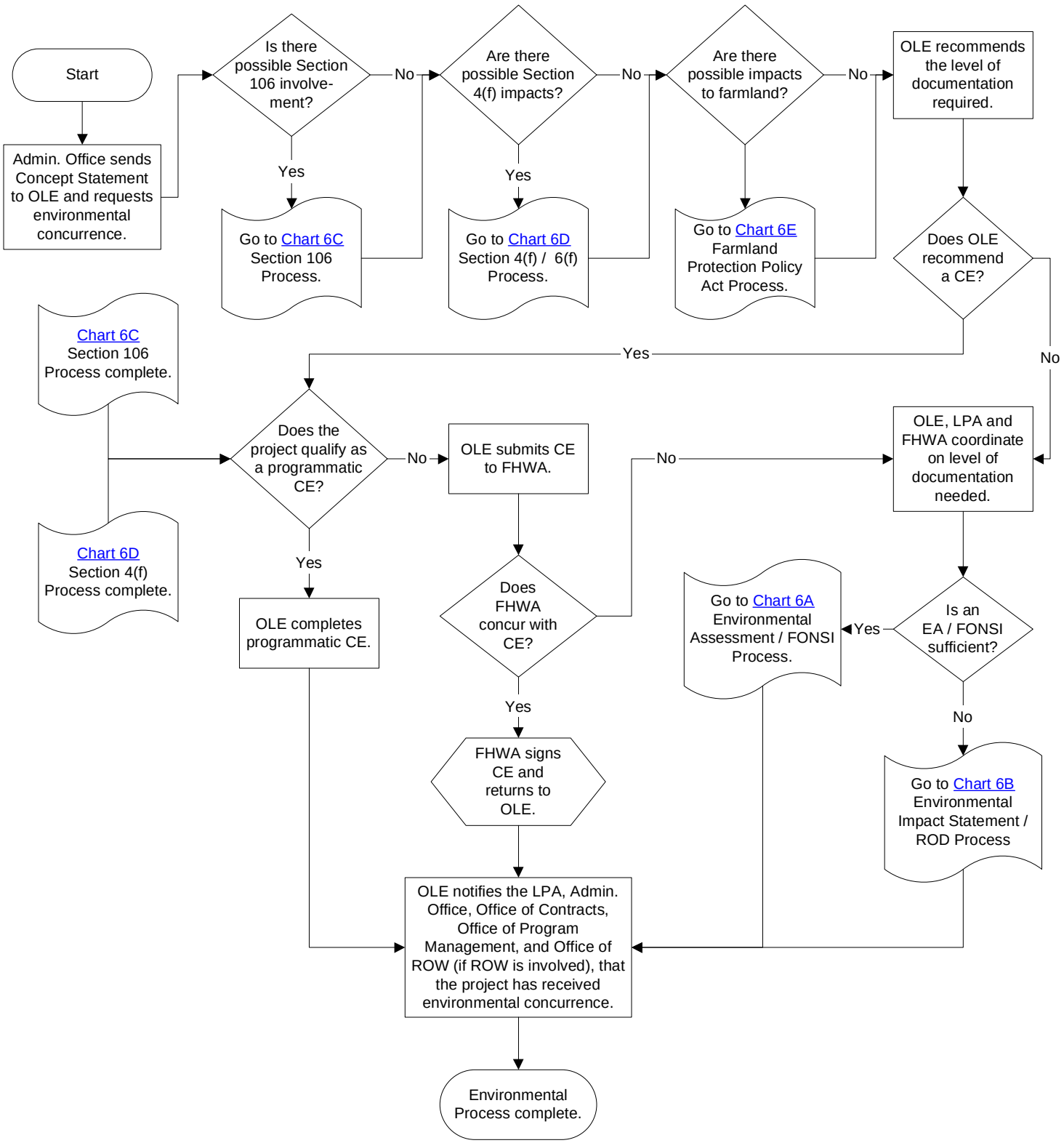
Examples of an EA might include capacity improvements with alignment shifts requiring residential relocations and / or other potential environmental impacts, such as historic properties, parks or wildlife areas.

Environmental Impact Statement (EIS) This classification is for projects that will likely result in significant environmental impacts. The purpose of an EIS is to inform the general public, the appropriate State and Federal resource agencies, and the decision-makers of reasonable alternatives to minimize harm to environmental resources. The EIS also provides a thorough public record of the project decision-making process.

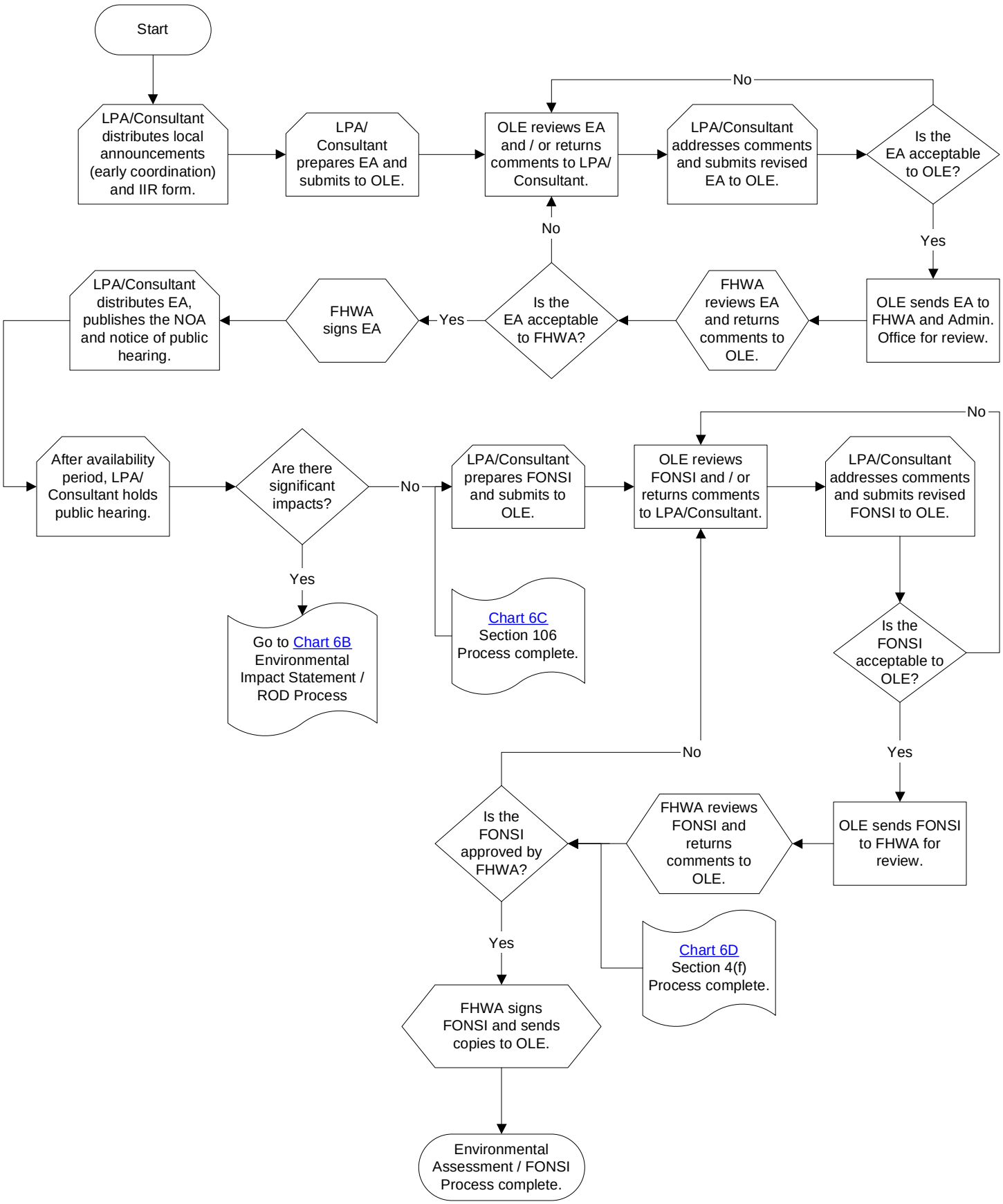
Examples of an EIS would include conversion of a two-lane highway to a four-lane highway or construction of an all new roadway on a new alignment.

The OLE submits its determination of Individual CE, EA, and EIS project classifications to FHWA for concurrence. Upon concurrence, a notification is sent to the project sponsor indicating the requirements of the classification. If the classification is for an EA or EIS project type, the project sponsor will need a project manager (typically a consultant) who is experienced in preparing environmental documents and thoroughly understands the process for developing these types of projects in accordance with FHWA procedures and standards.

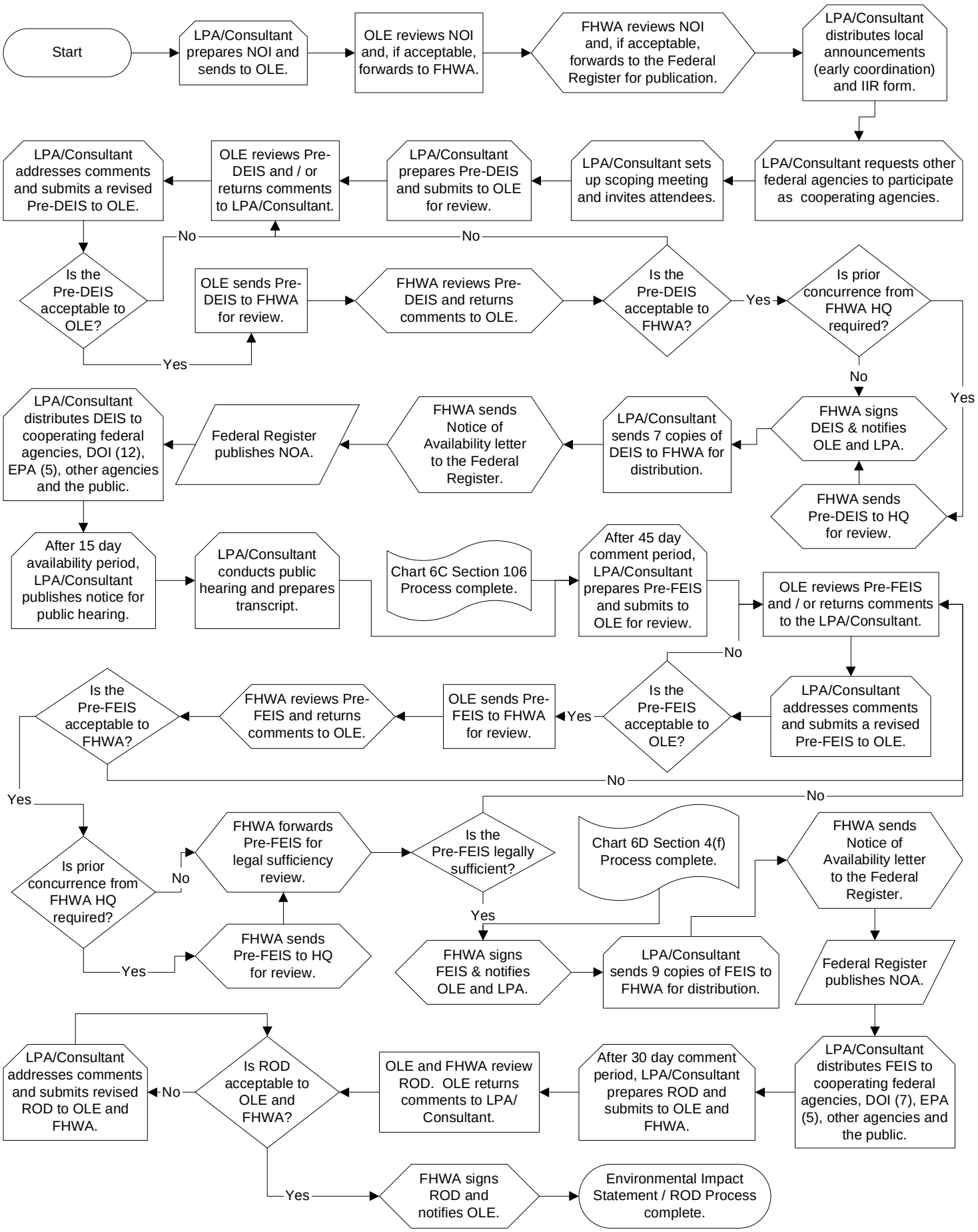
ENVIRONMENTAL PROCESS OVERVIEW



ENVIRONMENTAL ASSESSMENT / FONSI PROCESS



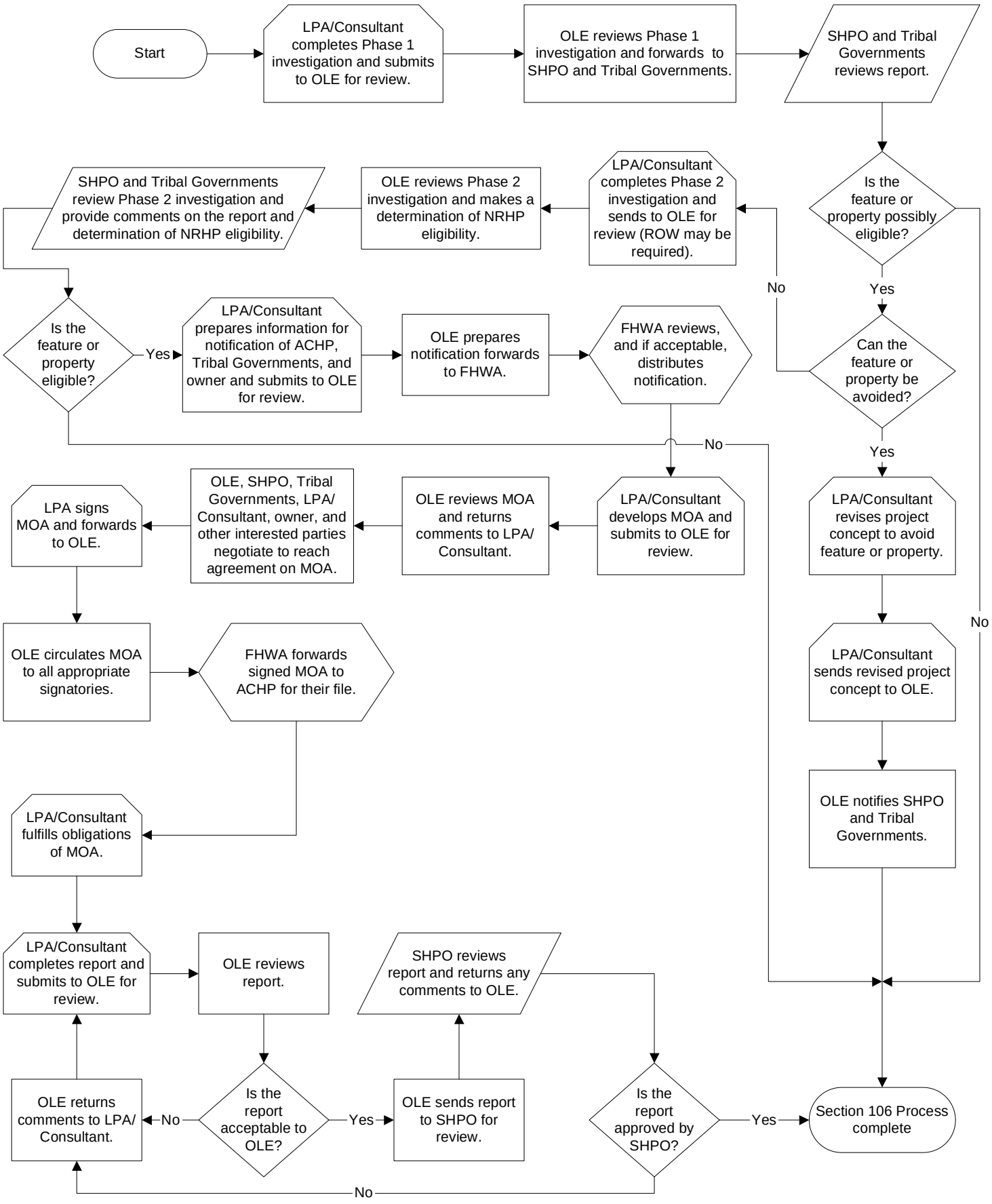
ENVIRONMENTAL IMPACT STATEMENT / ROD PROCESS



SECTION 106 PROCESS

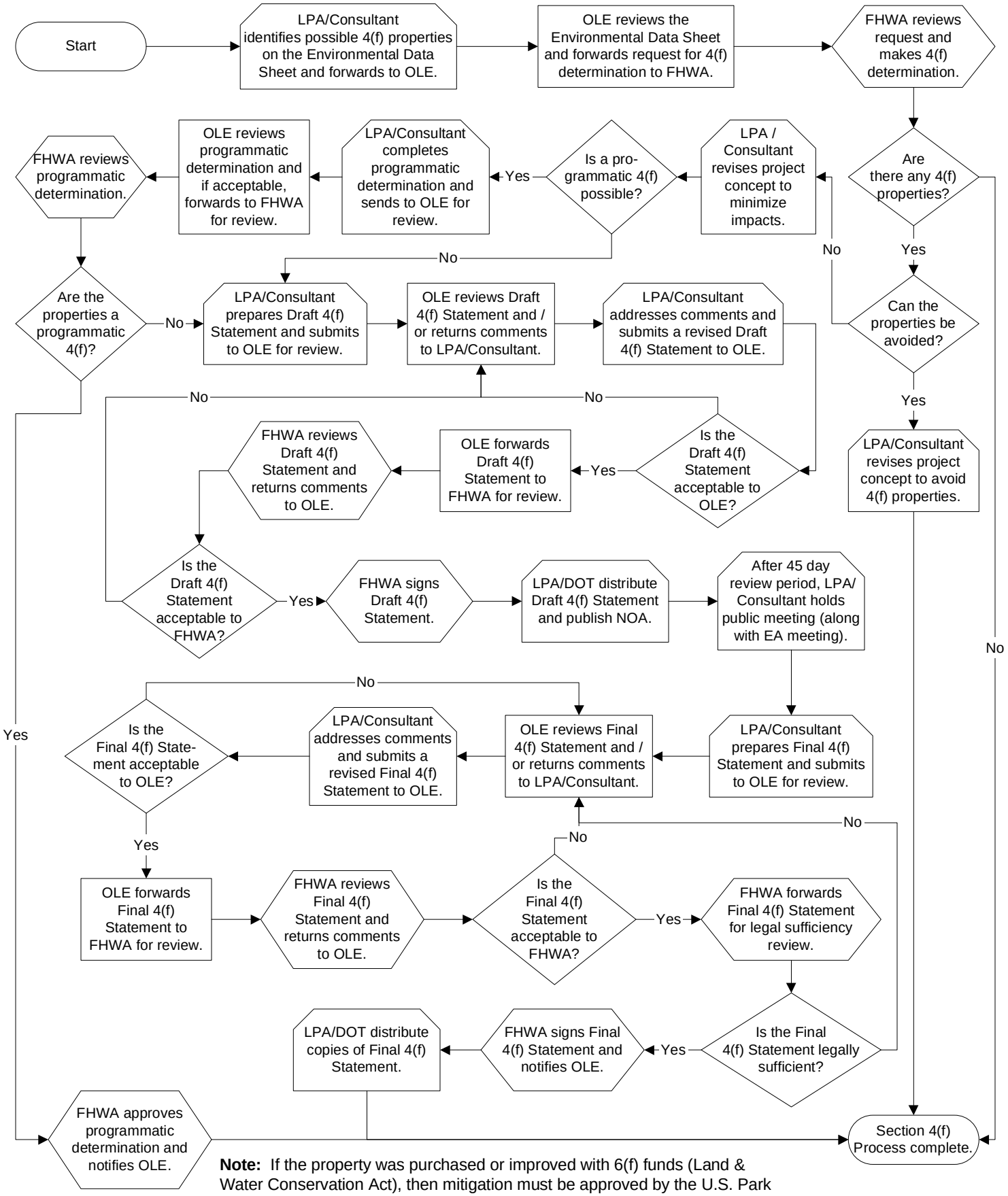
for Impacts to Historic Properties or Cultural Features

Chart No. 6C



SECTION 4(f) PROCESS

for Impacts to Parks, Recreational Areas, Historic Properties and Wildlife Refuges.



Note: If the property was purchased or improved with 6(f) funds (Land & Water Conservation Act), then mitigation must be approved by the U.S. Park Service (or their designated official).

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.114
Subject:	Cultural Resource Regulations	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing document, which is included on the pages immediately following this placeholder page:

- Packet, Index No. 6, Cultural Resource Regulations

When I.M. 3.114 is complete, this placeholder page and the existing document referenced above should be removed and replaced with the new I.M 3.114.

CULTURAL RESOURCE REGULATIONS

For Local Public Agency (LPA) Federal-aid Projects

In Iowa, there are four sets of regulations governing effects on cultural resources such as historic properties or archaeological sites by LPA construction projects. Each set of regulations and a summary of their requirements is outlined below.

Iowa Code Section 314.24 – Natural and Historic Preservation

1. Construction of streets and highways must, to the extent practicable, preserve and protect natural and historic sites or areas.
2. Destruction of such sites shall be avoided if reasonable alternatives are available at no significantly greater cost.
3. The LPA must make a diligent effort to identify and examine the comparative costs for alternatives.

Iowa Code Sections 263B.7-9 and 716.5 and Iowa Administrative Code 685-11.1 requirements governing cemeteries and burials

1. All human burials are protected from unauthorized disturbance, whether by public or private actions.
2. Prehistoric (over 150 years old) burials are under the authority of the Office of State Archaeologist (OSA).
3. If a burial site is identified before construction, the site should be avoided if possible.
4. If a burial site is discovered during construction, notify the proper authorities. If the burial is modern, contact the local sheriff.
5. If the burial is not modern, there is now a division of responsibilities under Iowa law and Federal law for contacts involving burials. Mark Kerper in the Iowa DOT Office of Location & Environment (OLE) at 515-239-1591 should be the initial contact for liaison with the OSA and the Iowa Indian Advisory Committee. The OSA can help identify the age and culture of human remains. The Cultural Resources (CR) section of OLE needs to be involved for Section 106 and FHWA responsibilities. Mark will work with Randy Faber or Judy McDonald in the CR section of OLE.

Section 4(f) of the United States DOT Act of 1966

1. Besides publicly owned parks, recreational lands, greenbelts or wildlife refuges, these regulations also apply to historic properties.
2. Archaeological sites in Iowa are usually exempted from these requirements.

Section 106 of the National Historic Preservation Act of 1966

Key Players

1. *Federal Agencies*. Federal agencies usually involved with implementing the Section 106 requirements include: the Federal Highway Administration (FHWA), the United States

Army Corps of Engineers (Corps) and the Federal Emergency Management Agency (FEMA). Final authority and responsibility for carrying out the provisions of this act rests with the various federal agencies involved. However, the federal agencies may choose to delegate these responsibilities. The OLE is officially delegated to carry out all Section 106 responsibilities for FHWA funded actions in Iowa including consultation with Indian Tribes. OLE will prepare project information, maps, correspondence, and other documentation for use in tribal contacts. The FHWA will become actively involved in tribal consultation when a project will have an adverse affect to a historic property of tribal interest.

2. *State Historic Preservation Officer (SHPO).* This position is appointed by the governor and is required by the National Historic Preservation Act of 1966, as amended. This position and the accompanying State Historic Preservation Office is funded by a combination of state and National Park Service funds. SHPO is acting for the Advisory Council on Historic Preservation and must be given an opportunity to review and comment on all federal actions in the state which have potential to affect historic properties.

3. *Advisory Council on Historic Preservation (ACHP).* This group consists of nineteen members (plus a staff of archaeologists and historians) from federal, state and local governments as well as the private sector and educational institutions. ACHP has final review and comment authority on all federal actions with potential to affect historic properties. However, the ACHP rarely becomes directly involved in consultation for individual projects unless there is a failure in the consultation process at the state level.

   It is important to note that neither SHPO nor ACHP has the authority to stop a project. However, federal agencies are required by law to consider SHPO and ACHP comments, and these comments are taken very seriously. In certain cases, ACHP comments may have to be addressed by the Washington D.C. office of FHWA. Also, individuals with an interest in historic preservation may go to court to stop or alter a roadway project that affects historic properties.

<u>Definitions</u>

Archaeological Site: The remains of people's activities. These can be classified as historic or prehistoric. Historic sites would include such things as pioneer farmsteads, cabin sites or sites like the sunken steamboat Bertrand at DeSoto Bend on the Missouri River. Prehistoric sites typically include Native American campsites, villages or tool sites.

Historic Property: Historic properties include archaeological sites as well as structures. To be considered as an historical property, houses, barns, bridges or boats usually must be at least 50 years old. While unusual, some properties less than 50 years old are classified as historic.

Historic Districts: Historic farmsteads, town squares or neighborhoods, and in some cases, even landscapes. These can sometimes encompass a large area. Historic Districts can include a cluster of archaeological sites.

Procedures

1. *Establish the area of potential effect.*

   Some projects have little or no potential effect on historic properties. A programmatic agreement with SHPO allows FHWA to authorize projects that have no potential to cause an effect on historic properties without any SHPO involvement. Projects that fall into such a category do not require any additional right-of-way, including permanent or temporary easements or borrow and will not affect any historic structures or historic districts.

   For projects with a very low potential to cause effect to historic properties with a very small amount of right-of-way, temporary or permanent easement (<2 acres), either provide information that documents that area has been previously disturbed or have an archaeologist conduct record search and an assessment of the project's affects. OLE has a contract with the OSA to provide this service. However, other archaeology firms are qualified to conduct an assessment. The archaeologist will provide the LPA a letter-report of the findings, either recommending a survey or "no survey recommended." If no survey is recommended, OLE will use this letter assessment to document to SHPO that no historic properties will be affected. If a survey is recommended, contact an archaeologist to complete the survey.

   The public involvement for a project as described above with little or no potential to cause an effect to historic properties would be minimal and limited to normal public notices of proposed LPA federal-aid projects. For projects that do have a potential effect on historic properties, see the next step.

2. *The LPA/consultant completes a Phase I survey and report.*

   A Phase I survey and report identifies any historic properties or archaeological sites which could be impacted by the project. This report must be submitted by the LPA/consultant to the Cultural Resource Section in OLE at the Iowa DOT.

   Phase I archaeology involves research of historical and previous survey records and a close inspection of the ground surface, including shovel tests and post holes in areas of poor visibility. The geomorphology in stream valleys is also inspected. Field work for Phase I archaeology usually cannot be done during the winter months. Archaeologists usually conduct background research, lab analysis and report writing during the winter months.

   Phase I historic studies include a site visit for purposes of an architectural evaluation and taking photos. Historical records are also researched. The Iowa DOT recommends historians to determine National Register eligibility during the initial review to eliminate the need for Phase II evaluations.

SHPO maintains a list of archaeological and historical consultants who meet the minimum standards set by the Secretary of the Interior. However, this is not a guarantee that the consultant's work will be adequate. Archaeologists should follow the 1999 Guidelines for Archaeological Investigations in Iowa to make sure that they have checked and documented all potential archaeological information for SHPO's review. Historians should use the Iowa Site Inventory Forms for recording structures over 50 years old.

Before conducting a Phase I survey, it is important to identify the limits of the project. Preliminary plans that show the limits of the proposed improvements and the right-of-way are desirable, but in some cases (such as bridge replacement projects), a survey can be conducted without preliminary plans.

3. *OLE sends Phase I report to SHPO and interested Indian Tribes for review and comment*.

   SHPO will review reports within 30 days of receipt or relinquish their right to comment. Because SHPO is significantly understaffed, OLE tries to assist SHPO by some pre-review and summary in the Iowa DOT determination of affect letter. If the report is adequate, SHPO usually concurs with the findings of the report and OLE's determination. They will sign the concurrence line on the Iowa DOT determination letter and return it to OLE. If the report did not identify any sites or properties that will be affected by the project, the Section 106 process is complete.

   The public involvement for projects with no historic properties affected would note the hiring of an archaeologist or historian to review the project in the published agenda of the Board meeting and the published minutes of the meeting. Instruct the archaeologist to include his/her public contacts in the report. Include the results of the cultural resource survey in the minutes of the Board meeting when it is presented to the Board. If the report did identify sites or properties with potential significance, continue to the next step.

4. *The LPA/consultant completes a Phase II archaeological evaluation and report.*

   Before beginning the Phase II survey, the LPA may want to study alternatives that would avoid impacts to the site or property. Phase II archaeology may require another season for fieldwork. Excavation of several one square meter test pits and additional lab analysis are required. The consultant should discuss Phase II methodology with SHPO before proceeding.

   A Phase I historical study is generally the identification stage while a Phase II historical study is the evaluation stage, which involves more research of historical records. Most historic structures should be sufficiently investigated at the Phase I level to determine their eligibility for the National Register. Sometimes additional research, such as a Phase II study, is needed to determine eligibility for the National Register. The LPA may consider directing the historian to complete the identification and determination of eligibility phases at the same time.

The Phase II report must be submitted by the LPA/consultant to the Cultural Resources Section of the OLE at the Iowa DOT.

5. *OLE forwards the Phase II report to SHPO and interested Indian Tribes for review and comment*.

   SHPO reviews the report and responds to the OLE's determination of effect. If the Phase II report finds that the site or property is not eligible for the National Register of Historic Places (NRHP), and SHPO and interested Indian Tribes concur with this determination, the Section 106 process is complete.

   If the site or property is eligible for the NRHP, continue to the next step.

6. *Again the LPA should consider alternatives to avoid or minimize impacts*.

   Mitigation of adverse effects will require that the LPA sign a Memorandum of Agreement (MOA) among the FHWA, SHPO, and Iowa DOT.

   For all adverse effects, whether to archaeology sites or historic structures, consultation with SHPO will be required. A notice must be sent to the ACHP along with specified documentation and a summary of actions. The ACHP is offered an opportunity to participate in consultation. Consultation often includes the interested tribes, the property owner and interested members of the public. The LPA/consultant should work with the OLE to complete this process. Several things should be considered by the LPA/consultant:

   - An archaeological site may be significant only for the information that it contains. In this case, avoidance is not mandatory, but data recovery is usually required. This will typically require an additional season for fieldwork and often is very expensive.

   - ACHP requires adequate public involvement. If the site is prehistoric, tribes will need to be consulted, which OLE will take care of, but could add time to the process. Keep in mind that sites of tribal interest are confidential, especially burials and sacred sites. For historic sites, archaeology and structures, the LPA should notify the owner(s) of properties listed on the historic register, local historical society and ask for their comments. Any newspaper articles should be clipped and sent to OLE. Any cultural resource discussions at the Board meeting should be documented in the minutes. If there is controversy due to the cultural resources, document the concern and resolution.

   - Under the Section 4(f) requirements, historic structures must be avoided if feasible and prudent. It is important to note that cost is not a consideration in this determination. Draft and final 4(f) documentation of alternative and minimization considerations are required.

- For all adverse effects to historic structures or sites, if avoidance is not possible, an MOA will be required. The MOA stipulates measures that will be employed to minimize or mitigate impacts to the historic property. The MOA must be signed by the Iowa DOT, FHWA and SHPO. The LPA will be asked to sign the MOA and other interested parties such as interested Indian tribes or local historical societies will be given an opportunity to sign. The signed MOA is then sent to ACHP for their files.

- For archaeological sites that are to be mitigated by data recovery, it is recommended that the archaeological consultant write a Research Design / Data Recovery Plan. This needs to be reviewed by SHPO, attached to the MOA, and can be used for requesting Phase III proposals.

- For impacts to historic properties that are not adverse, a Finding of No Adverse Effect must be sent to SHPO .

- Before a project can proceed to letting, the MOA must be completed and approved by all the reviewing agencies. In addition, the stipulations contained in the MOA must be completed to SHPO's satisfaction prior to letting (SHPO approval of the mitigation field work will usually allow a project to proceed).

For more information on the Section 106 process, refer to Chart 6C – Section 106 Process in the Flow Charts section of the Project Development Information Packet.

Office of Location & Environment, Iowa Indian Advisory Committee contact

Mark Kerper (515.239.1591) mark.kerper@dot.iowa.gov

Office of Location & Environment, Cultural Resource contacts

Randy Faber (515.239.1215) randall.faber@dot.iowa.gov
Judy McDonald (515.239.1795) judy.mcdonald@dot.iowa.gov
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Mailing Address:
Office of Location & Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.120
Subject:	Farmland Protection Policy Act Guidelines	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing documents, which are included on the pages immediately following this placeholder page:

- Packet, Index No. 6, Farmland Protection Policy Act Guidelines
- Packet, Flow Charts, Chart 6E – Farmland Protection Policy Act Process

When I.M. 3.120 is complete, this placeholder page and the existing documents referenced above should be removed and replaced with the new I.M 3.120.

FARMLAND PROTECTION POLICY ACT GUIDELINES

For Local Public Agency (LPA) Federal-Aid Projects

Introduction

LPA federal-aid projects that require acquisition of right-of-way must comply with the provisions of the Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to "minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland." (7 U.S.C. 4201(b)).

Applicability

The FPPA governs impacts to farmland only. Farmland, according to the FPPA, is defined as prime farmland, unique farmland, or farmland that is of state or local importance. These terms are further defined in 7 U.S.C. 4201(c)(1) and 7 CFR 658.2(a).

Land that is already in or committed to urban development or water storage does not qualify as farmland and is therefore not subject to the FPPA. As per 7 CFR 658.2(a), land that meets any one the following criteria is considered already committed to urban development or water storage:

1. Land with a density of 30 structures or more per 40 acre area.
2. Land identified as an "urbanized area" (UA) on the Census Bureau Map.
3. Land mapped as an urban area using the tint-overprint on the USGS topographical maps.
4. Land shown as "urban-built-up" on the USDA Important Farmland Maps.
5. Land that receives a combined score of 160 points or less for the Land Evaluation (Part V) and Site Assessment (Part VI) criteria on the Farmland Conversion Impact Rating form.

Farmland Conversion Impact Rating form

The Farmland Conversion Impact Rating form (Form AD-1006) has been developed by the Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), to aid local, state, and federal agencies in documenting impacts to farmland. In an effort to reduce unnecessary paper work, the Iowa Department of Transportation (DOT), the NRCS and the Federal Highway Administration (FHWA) have developed the following thresholds to determine if this form must be submitted:

1. If the project requires five acres or less of new right-of-way per mile or per site, the project does not present a significant impact to farmland and submittal of Form AD-1006 is not required.

2. If the project requires more than five acres of new right of way per mile or per site, Form AD-1006 must be completed by the LPA or their consultant. Refer to *Chart 6E – Farmland Policy Protection Act Process*, located in the Flow Charts section, for more information about the submittal and processing of Form AD-1006.

Supplemental Instructions for Completing Form AD-1006

Instructions for completing Form AD-1006 are included with the form. However, to provide local agencies with additional guidance in scoring the site assessment criteria (Part VI of the form), the following instructions have been developed. These instructions summarize those listed in 7 CFR 658.5.(b), and in addition, give interpolated point values for the ranges of percentages listed. Use the point values shown in the tables below (or a linear interpolation between these values) when determining the Part VI score for each of the site assessment criteria. Instructions for each of the twelve site criteria are listed below.

1. Area in Nonurban Use: According to the following table, assign a point value for the percentage of land in nonurban use within a radius of one (1) mile of the project:

Percentage	> 90	90	80	70	60	50	40	30	20	< 20
Point Value	15	14	12	11	9	7	5	2	1	0

2. Perimeter in Nonurban Use: According to the following table, assign a point value for the percentage of the project site perimeter that borders land in nonurban use.

Percentage	> 90	90	80	70	60	50	40	30	20	< 20
Point Value	10	9	8	7	6	5	4	3	1	0

3. Percent of Site Being Farmed: According to the following table, assign a point value for the percentage of project site that has been farmed (managed for a scheduled harvest or timber activity) for more than five (5) of the last ten (10) years.

Percentage	> 90	90	80	70	60	50	40	30	20	< 20
Point Value	20	19	16	14	11	9	6	4	1	0

4. Protection Provided by State and Local Government: If the site is subject to state, local government or private programs or policies to protect farmland, assign twenty (20) points. If not, assign zero (0) points.

5. Distance From Urban Builtup Area: This criteria does not apply for street and highway projects. Assign zero (0) points.

6. Distance to Urban Support Services: This criteria does not apply for street and highway projects. Assign zero (0) points.

7. Size of Present Farm Unit Compared to Average: According to the following table, assign a point value for the average size of the farm unit(s) containing the site (before the project) as compared with the average size farm unit in that county.

Percentage	>=100	95	90	85	80	75	70	65	60	55	50
Point Value	10	9	8	7	6	5	4	3	2	1	0

Note: The percentage above is calculated by dividing the average site farm unit(s) size by the average farm unit size in that county. Average farm sizes in each county are available from the NRCS field office.

8. Creation of Nonfarmable Farmland: According to the following table, assign a point value for the percentage of remaining farmland that will be nonfarmable if the project site is chosen.

Percentage	>25	25	20	15	10	5	<5
Point Value	25	24	18.25	12.5	6.75	1	0

Note: The percentage above is calculated by dividing the amount of remaining farmland that is nonfarmable by amount of farmland that is converted by the project. For example: If, as a result of the project, 1 acre of farmland is left nonfarmable and 5 acres are converted, the percentage is 20 % and 18.25 points are assigned.

9. Availability of Farm Support Services: Assign a point value for the availability and adequate supply of farm support services, such as farm suppliers, equipment dealers, processing and storage facilities and farmer's markets. Use the following scale:

   All required services are available = five (5) points
   Some required services are available = four (4) to one (1) points
   No required services are available = zero (0) points.

10. On-Farm Investments: Assign a point value according to the amount of substantial and well-maintained on-farm investments on the project site such as barns, other storage buildings, fruit trees and vines, field terraces, drainage, irrigation, waterways or other soil and water conservation measures. Count only the on-farm investments that are actually on the project site. Use the following scale:

    High amount of on-farm investments = twenty (20) points
    Moderate amount of on-farm investments = nineteen (19) to one (1) points
    No on-farm investments = zero (0) points.

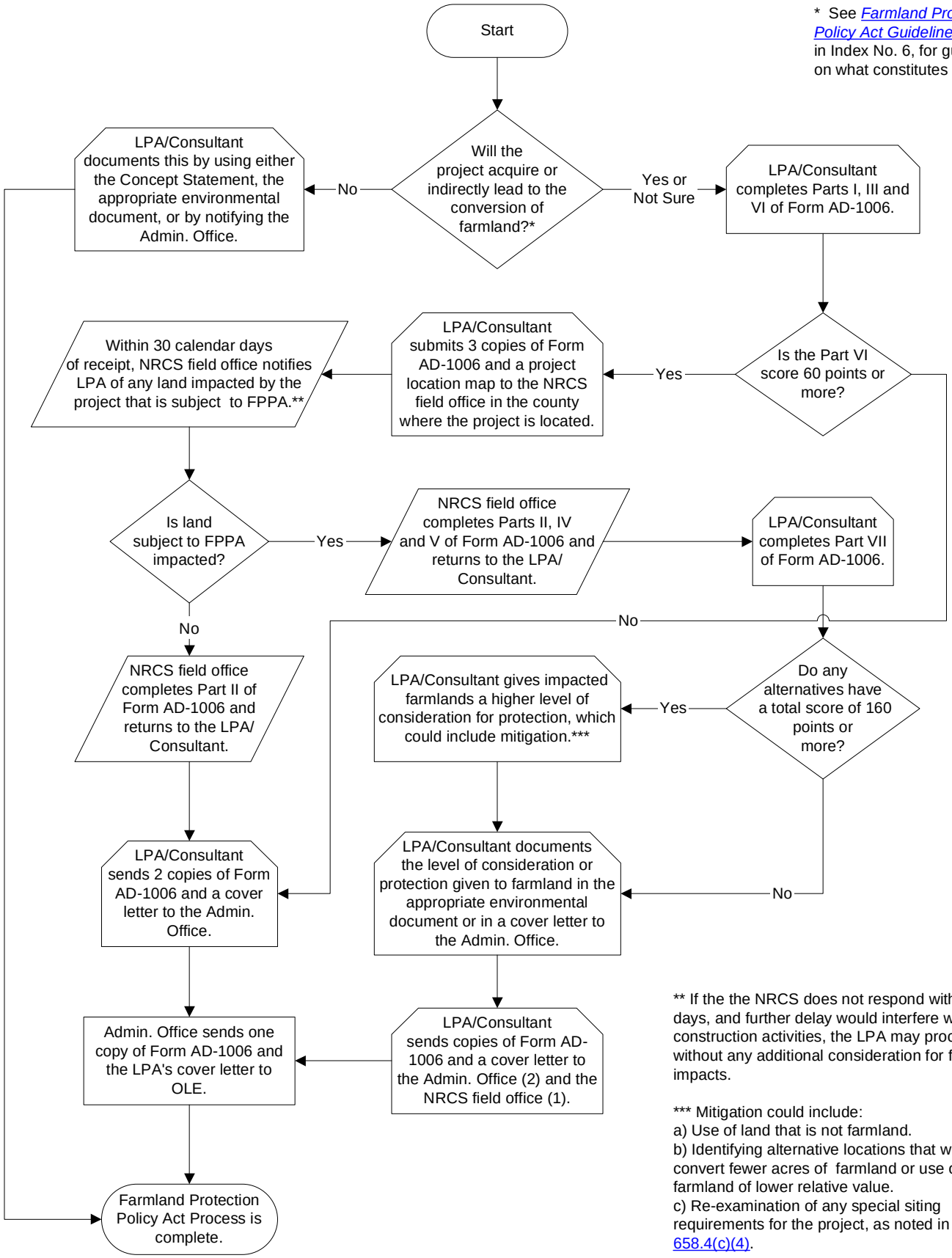
11. Effects of Conversion on Farm Support Services: Assign a point value according to the reduction in demand for farm support services that the project would create by converting farmland to nonagricultural use. Use the following scale:

    Substantial reduction = twenty-five (25) points
    Some reduction = twenty-four (24) to one (1) points
    No significant reduction = zero (0) points.

12. Compatibility with Existing Agricultural Use: Assign a point value according to the degree to which the proposed use of the project site is sufficiently incompatible with agriculture that it will likely contribute to the eventual conversion of surrounding farmland to nonagricultural use. Use the following scale:

    Incompatible with existing agricultural use of surrounding farmland = ten (10) points
    Tolerable to existing agricultural use of surrounding farmland = nine (9) to one (1) points
    Fully compatible with existing agricultural use of surrounding farmland = zero (0) points

FARMLAND PROTECTION POLICY ACT PROCESS



* See *Farmland Protection Policy Act Guidelines*, located in Index No. 6, for guidance on what constitutes farmland.

** If the the NRCS does not respond within 30 days, and further delay would interfere with construction activities, the LPA may proceed without any additional consideration for farmland impacts.

*** Mitigation could include:
a) Use of land that is not farmland.
b) Identifying alternative locations that would convert fewer acres of farmland or use other farmland of lower relative value.
c) Re-examination of any special siting requirements for the project, as noted in 7 C.F.R. 658.4(c)(4).

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: March 26, 2008
From:	Office of Local Systems	I.M. No. 3.130
Subject:	404 Permit Process	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for a Local Public Agency (LPA) to understand and comply with the requirements of Section 404 of the Clean Water Act, as it applies to transportation projects. This I.M. also includes the following attachments:

Attachment A – 404 Permit Checklist

Definitions

Discharges of Dredged or Fill Material – Generally, this includes, but is not limited to: placement of dredge or fill that is necessary for the construction of any structure or infrastructure (including formed or pre-formed cast culverts and aprons); the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, concrete, flowable mortar, or other material for its construction; causeways or road fills; dams and dikes; artificial islands; riprap, groins, weirs, spur-dikes, breakwaters, and revetments; and levees. These terms are defined more precisely under Title 33 of the Code of Federal Regulations (CFR), Part 323, Section 323.2 (33 CFR 323.2).

Waters of the United States – Generally, this includes all waters, impoundments of waters, or tributaries of waters, such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, or natural ponds. This term is defined more precisely at 33 CFR 328.3.

Wetlands – Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3(b)).

Introduction

Discharges of dredged or fill material into waters of the United States are regulated under the Clean Water Act, now codified at Title 33, United States Code, Section 1344 (33 U.S.C. 1344). This law and its associated regulations are administered by the United States Army Corps of Engineers (Corps), the United States Environmental Protection Agency (EPA), and the Iowa Department of Natural Resources (Iowa DNR).

The goal of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. While there are many different sections of this law pertaining to clean water, there are two sections that significantly affect transportation projects. Section 404 and Section 401 require the Corps and the Iowa DNR, respectively, to issue permits for certain activities that affect the waters of the United States. In Iowa, the permitting required under both Section 404 and Section 401 has been merged into one process, allowing for joint application and approval of these permits.

When is a Permit Required?

A Section 404 permit will be required before placing any dredged or fill material into waters of the United States. Therefore, projects that involve placement of dredged or fill materials in or near any waters of the United States should be reviewed to determine if a permit will be required or what type of permit will be required. Projects that should be reviewed typically involve activities such as the following:

- Grading
- Borrow areas
- Culvert extensions
- Bridge or culvert replacements
- Temporary fills or crossings
- Cofferdams and work pads
- Bank stabilization or channel realignment

A good rule of thumb is any project that requires additional property rights or involves any work in or near an aquatic resource, such as a lake, river, stream or wetland, should be reviewed for compliance with Section 404.

Wetland Considerations

Since wetlands are by definition part of the of waters of the United States and therefore protected under the Section 404 laws and regulations, it is critical to understand what wetlands are, how they are identified, and how impacts to wetlands must be addressed. Each of these topics are briefly addressed below.

What are Wetlands?

The regulatory definition of wetlands is provided in the Definitions section above. A key consideration is whether or not saturated (hydric) soils are present at some point during the growing season. Examples of wetland areas include, but are not limited to:

1. Timbered or non-timbered floodplain
2. Potholes/depressed areas
3. Grassed waterways
4. Farmed wetlands
5. Fringe wetlands (associated with streams, rivers, lakes, hillside seeps, etc.)

How are Wetlands Identified?

Trained wetland professionals should be utilized to conduct wetland investigations. Assistance may be available from Corps regulatory staff, United States Department of Agriculture Natural Resources Conservation Service (NRCS) field staff, or through environmental consultants. A list of environmental consultants that may be able to provide these services may be obtained from the Corps (see Contact Information section below). However, inclusion on this list is neither an endorsement nor a recommendation by either the Corps or the Iowa DOT.

The Corps may accept certified NRCS determinations of wetland impacts on actively-cropped land. Therefore it may be advisable to first contact the local NRCS office to determine if certified wetlands determinations have been performed. Cultivated areas termed “prior converted” by the NRCS are not usually regulated by Corps. However, cultivated areas that are called “farmed wetlands” may be regulated by Corps. If the NRCS office is unable or unavailable to help you determine if regulated wetlands are present, you may need to hire an environmental consultant to make that determination. For additional guidance in determining whether any wetlands exist within the project limits, refer to the 1987 Corps of Engineers Wetland Delineation Manual.

Note: The Corps will make the final determination of which wetlands are regulated and what type of permit is required. On occasion, the Corps could differ from the NRCS. When in doubt, contact the Corps as early as possible to avoid costly delays later on.

How Should Impacts to Wetlands be Mitigated?

Since protecting wetlands is one of the primary purposes of Section 404, mitigation of impacts to wetlands is a key consideration in the Section 404 permit process. A wetland is “impacted” if there is a temporary or permanent adverse affect by filling, flooding, excavating, or draining the wetland. If permanent wetland impacts exceed 0.1 acres, mitigation will be required. Impacts of 0.1 acres or less may or may not require mitigation.

The term “mitigation” means more than simply “compensation” in the Federal regulations and it is more specific than the dictionary definition, “to make less severe.” Rather, the Section 404 regulations require an analysis of alternatives and mitigation actions must be considered in a specific sequence of steps:

1. Avoidance: Before the Corps will issue a 404 permit, the LPA must demonstrate that every effort has been made to first avoid any impacts, both temporary and permanent, to the maximum extent practicable.

2. Minimization: If impacts are unavoidable, the LPA must demonstrate that impacts will be minimized as much as possible. Typically, impacts can be minimized by keeping channel shaping and road relocation to an absolute minimum.

3. Compensation: Finally, compensation at a minimum ratio of 1:1 (wetlands compensated to wetlands lost) may be required. The Iowa DOT recommends providing compensatory mitigation at a 1.5:1 ratio. Compensation may consist of creating, restoring, enhancing, or preserving wetlands to replace those that were lost because of the transportation project. Compensation options include on-site mitigation, off-site mitigation within the watershed, purchasing credits from a mitigation bank, or contributing funds to a separate wetland project in-lieu of mitigation. Stream mitigation may also be required.

The mitigation process should be performed in accordance with the EPA's Section 404(b)(1) Guidelines (as specified in 40 CFR 230), the Corps / EPA Memorandum of Agreement, and with input from other resource and regulatory agencies. The Corps and the Iowa DNR have the final authority to approve or disallow any proposed mitigation plan offered by the LPA.

What Type of Permit is Required?

There are three basic types of Section 404 permits that may be used. The proposed project activities and their impacts to the waters of the United States will determine which type may be used. Figure 1 illustrates a generalized process that may be used to determine which type of permit might be appropriate. Each type of permit is further described below.

Note: Figure 1 should be used as guide only. The Corps District Engineer will make the final determination regarding which type of permit is required and may require a Regional or Individual Permit on a case-by-case basis. Controversial projects, in particular, should be examined carefully. These should be submitted to the Corps regardless of the amount of impacts to waters of the United States.

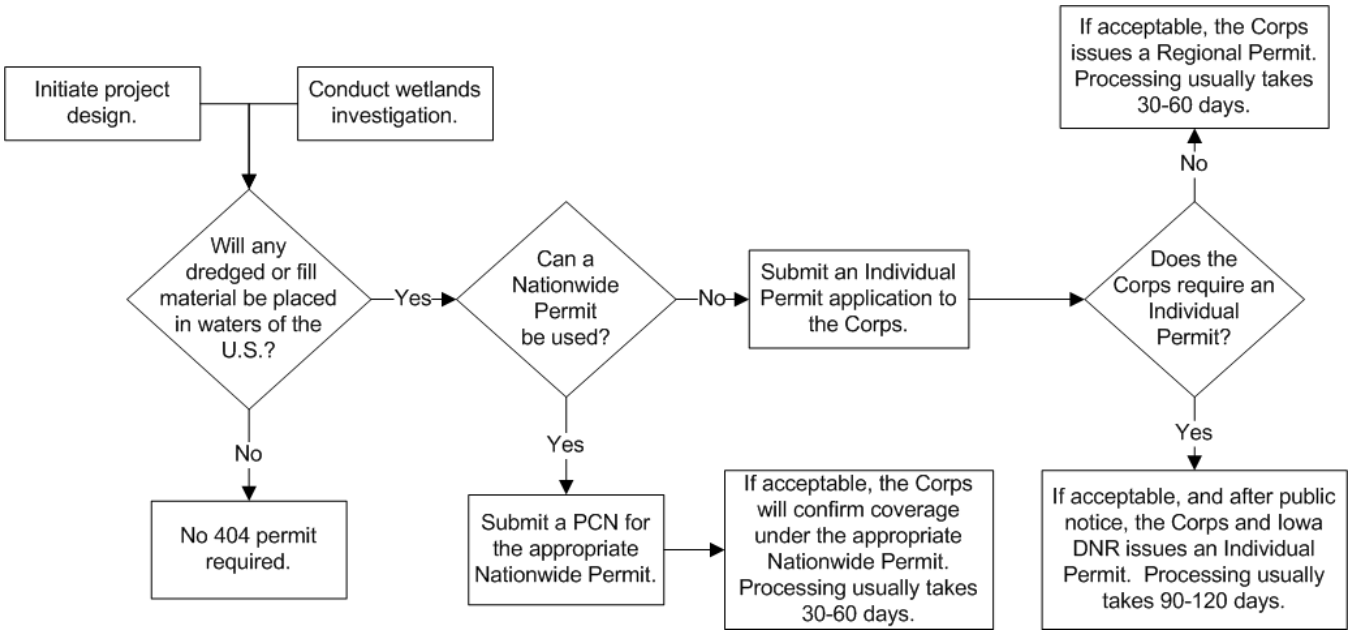


Figure 1 – 404 Permit Determination Process

Nationwide Permits

A Nationwide Permit (NWP) is a general type of permit and is intended to apply throughout the United States and its territories. There are many different types of NWPs, and each one allows a certain type of activity, subject to certain conditions and / or limits. In order to use one of the NWPs, there are also number of other regional and general conditions which may also apply. All of the applicable conditions, limitations, and permitting procedures for the NWP program in Iowa are explained in the Corps' Fact Sheet No. 6(IA). Therefore, if an NWP will be used, the LPA should thoroughly review the Fact Sheet. Finally, in addition to

the conditions and limitations specified in the Fact Sheet, the Corps also has the authority to impose case-specific conditions on any project approved under an NWP.

In general, NWPs may be used for projects with relatively minor impacts to waters of the United States. Most NWPs limit the loss waters of the United States to less than 0.5 acres.

Table 1 below summarizes the NWPs commonly used for transportation projects. This table also includes a description of the type of activity that may be approved, the applicable conditions and / or limits, and if a Pre-Construction Notice (PCN) is required.

Note: As Table 1 indicates, there are a few instances when a PCN may not be required in order to use an NWP; however, **the Iowa DOT strongly recommends sending a PCN to the Corps whenever any type of activity is proposed under an NWP**. This provides documentation of compliance with the Section 404 requirements, which is critical if questions or problems arise later on.

Table 1 – Commonly Used NWPs for Transportation Projects

NWP	Activities Allowed	Conditions and / or Limits	PCN Required?
3. Maintenance	(a) Repair, rehabilitation, or replacement of previously approved, currently serviceable structures or fills.	• Structures or fills will only be used for the purposes for which they were originally approved. • Only minor deviations for maintenance are allowed.	No
	(b) Removal of accumulated sediments and debris in the vicinity of existing structures (e.g., bridges or culverts) including intake and outfall structures and associated canals; and the placement or new or additional rip-rap to protect the structure.	• Removal is limited to 200 feet, or the minimum necessary to restore capacity of the intake or outfall structure or associated canal. • All dredged or excavated materials must be deposited and maintained in an upland area.	Yes
	(c) Temporary structures, fills, and work necessary to conduct the maintenance activities allowed by this NWP.	• Maintain normal downstream flows and minimize flooding to the maximum extent practicable. • Construct and maintain temporary fills so they will not be eroded by expected high flows. • Remove temporary fills and return to pre-construction elevations; revegetate affected areas as appropriate.	No
13. Bank Stabilization	Bank stabilization activities necessary for erosion prevention.	• Length is limited to 500 feet along the bank (unless waived by DE) • Amount of material placed must be less than 1 cubic yard per running foot (unless waived by DE)	Yes, if any of the following conditions exist: • The length will exceed 500 feet along the bank. • More than 1 cubic yard of material will be placed per running foot. • The discharge will occur in a special aquatic site.
14. Linear Transportation Crossings	Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in WUS. This includes temporary structures, fills, and work necessary to construct the linear transportation project.	• Less than 0.5 acres of WUS will be filled. • Stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. • Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable. • Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. • Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. Areas affected by temporary fills must be revegetated, as appropriate.	Yes, if greater than 0.1 acres of WUS will be filled.

NWP	Activities Allowed	Conditions and / or Limits	PCN Required?
18. Minor Discharges	Minor discharges of dredged or fill material into all WUS.	• The quantity of discharged material and the volume of area excavated do not exceed 25 cubic yards below the plane of the ordinary high water mark. • The discharge will not cause the loss of more than 1/10 acre of WUS. • The discharge is not placed for the purpose of a stream diversion.	Yes, if any of the following conditions exist: • The discharge or the volume of area excavated exceeds 10 cubic yards below the plane of the ordinary high water mark. • The discharge is in a special aquatic site.
23. Approved Categorical Exclusions	Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency where the activity has been classified as a Categorical Exclusion (CE).	• The Iowa DOT, on behalf of the FHWA, has granted a CE for the proposed project. • Applies only to those activities FHWA has classified as a CE, as specified in the Corps' Regulatory Guidance Letter (RGL) No. 05-07. • Additional information about the CE classification is provided, as listed in Attachment A - 404 Permit Checklist (see Part 1, cover letter, item 2.l).	Yes, if required by the Corps' RGL No. 05-07.
33. Temporary Construction, Access, and Dewatering	Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites. This also includes temporary structures, work, and discharges, including cofferdams, necessary for construction activities not otherwise subject to the Corps or U.S. Coast Guard permit requirements.	• The associated primary activity is approved by the Corps of Engineers or the U.S. Coast Guard.	Yes

Abbreviations / definitions: **DE** = District Engineer, Rock Island District of the Corps; **WUS** = waters of the United States; **discharge** = the placement of dredged or fill material into WUS; **special aquatic site** = are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region, as listed in 40 CFR 230, Subpart E.

Regional Permits

A Regional Permit is an intermediate type of permit between the NWPs described above and the Individual Permits described below. This type of permit is used when the conditions or limits of the NWPs are exceeded, but the level of impacts may not warrant the type of public involvement or review required for Individual Permits.

There are three different Regional Permits in Iowa. The one used for transportation projects is Regional Permit 7, Fill Associated with Bridge Construction. Typical conditions for approval under Regional Permit 7 include the following:

- Wetland impacts must be 1 acre or less.
- All wetland impacts will be mitigated at a 1.5:1 ratio.
- Stream realignment and shaping is allowed within 300 feet upstream and downstream of the centerline of the roadway (existing channel length, with a maximum distance of existing channel length impacted not to exceed 500 feet).
- Banks will be stabilized with vegetation or rock, at no steeper than a 2:1 slope.

For more detailed information about the conditions and limitations of this permit, refer to Regional Permit 7 provided by the Rock Island District of the Corps.

Note: The decision to approve a project under a Regional Permit is made at the discretion of the Corps District Engineer. LPAs seeking approval under a Regional Permit should complete an Individual Permit application and request the Corps to make this determination.

Individual Permits

An Individual Permit (IP) is typically required for major projects with significant impacts to waters of the United States. This includes all projects that cannot be approved under a NWP or a Regional Permit.

Before granting this type of permit, the Corps will publish a public notice and subject the project to a rigorous public interest review among the resource agencies, interested parties, and the public at large. The Iowa DNR must also issue a specific 401 Water Quality Certification for the project. Like the Corps, the Iowa DNR conducts a public notice and public interest review. The public notice and review process typically requires a minimum of 30 days to complete.

Projects approved under an IP often require wetland and / or stream mitigation. A detailed mitigation plan must be submitted that includes documentation of the alternatives considered to avoid and minimize the impacts to wetlands and streams, and if they cannot be avoided, the type of compensatory mitigation that will be provided.

How are Permits Obtained?

Attachment A - Section 404 Permit Checklist, provides detailed instructions for preparing and submitting a PCN or IP application. Please note the Corps' review will not commence until all the requested information is received, so it is important to review this checklist carefully before submitting the PCN or IP application.

The PCN or IP application should be submitted to the Corps as soon as possible. Processing time for a NWP or Regional Permit is typically 30 to 60 calendar days from the Corps' receipt of the PCN or IP application. Processing time for an IP is typically 90-120 from the Corps' receipt of a complete IP application.

Project activities may not begin until after notice has been received from the Corps (and for IPs, the Iowa DNR) that the proposed project has been approved under the terms and conditions on the appropriate permit. The notice will consist of a letter that identifies the permit(s) that have been granted and any special conditions which must be met.

How do 404 Permits Affect the Project Plans and Letting Process?

If a 404 permit is required, the plans shall indicate which 404 permit has been obtained. The plans shall also include the appropriate standard plans, details, specifications, and bid items to ensure the proposed construction will meet all of the terms and conditions of the applicable 404 permit, including any special conditions or restrictions specified by the Corps. For more specific information, refer to I.M. 3.505, Check and Final Plans, Attachment B – Check and Final Plans Checklist.

Projects that typically require a 404 permit will not be submitted for letting through the Iowa DOT if the appropriate permit has not been obtained, unless documentation is provided to establish that either a 404 permit is not required or a Public Interest Finding has been approved, as per I.M. 3.760, Public Interest Findings.

Additional Resources

U.S. Army Corps of Engineers - Rock Island District Regulatory Branch Links to public notices concerning nationwide permits, permit application forms and instructions, frequently asked questions (FAQs), and a posting of recent public notices for upcoming projects in Iowa.

U.S. Fish & Wildlife Service - National Wetlands Inventory Contains information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This site contains mapping information for most of the United States.

United States Geological Survey - Iowa Water Science Center Includes current and historic hydrologic data and various other reports and publications.

Iowa Department of Natural Resources Home page for the Iowa DNR.

Iowa Department of Natural Resources - Natural Resources Geographic Information System (NRGIS) Library A collection of more than 1000 geographically referenced databases that are available to local agencies through a file transfer protocol (ftp) server.

Society of Wetland Scientists A non-profit organization founded in 1980 to promote wetland science and the exchange of information related to wetlands.

Association of State Wetland Managers This nonprofit membership organization established in 1983 to promote and enhance protection and management of wetland resources, to promote application of sound science to wetland management efforts and to provide training and education for our members and the public.

U.S. Environmental Protection Agency – Wetlands, Oceans, and Watersheds Links to laws, regulations, executive orders, guidance, and scientific documents related to wetlands.

Iowa State University – Iowa's Wetlands and Riparian Areas Provides a clearinghouse of information about wetlands and riparian areas in Iowa.

Contact Information

Corps

The Rock Island District of the Corps has jurisdiction over most of the State of Iowa; however, for projects involving the Missouri River levee system or located in areas between the levees and the Missouri River, contact the Omaha District of the Corps.

U.S. Army Corps of Engineers, Rock Island District
Attn: Regulatory Branch
Clock Tower Building - PO Box 2004
Rock Island, IL 61204-2004
309-794-5370

U.S. Army Corps of Engineers, Omaha District
Wehrspann Regulatory Office
8901 South 154th Street
Omaha, NE 68138-3635
402-896-0896

Iowa DNR

For projects that will use an NWP, the Iowa DNR does not need to be contacted, unless its Section 401 Water Quality Certification conditions for the NWP program are not met, as listed on page 1 of the Corps' Fact Sheet No. 6(IA). For projects that will use an IP, the Iowa DNR should always be contacted regarding individual Section 401 Water Quality Certifications.

Iowa Department of Natural Resources
Attn: Floodplain Permits Section
Wallace State Office Building
502 E. 9th Street
Des Moines, IA 50319-0034
515-281-6615

Iowa DOT

Iowa Department of Transportation
Water Resources Section
800 Lincoln Way
Ames, IA 50010
(515) 239-1225

404 Permit Checklist

About the Checklist

This checklist is provided as a guide for submittal of a Pre-Construction Notice (PCN) for a Nationwide Permit (NWP) or an Individual Permit (IP) application, as required by Section 404 of the Clean Water Act and its associated regulations. These checklists have been developed with assistance from the Water Resources Section of the Iowa Department of Transportation (Iowa DOT), the Rock Island District of the U.S. Army Corps of Engineers (Corps), and the Iowa Department of Natural Resources (Iowa DNR). Following this checklist typically results in a complete submittal under normal circumstances. Nevertheless, actual PCN or IP applications should be developed at the applicant's discretion and coordinated directly with the Corps and other regulatory agencies as appropriate.

Instructions

The type of information required as part of the PCN or IP application depends primarily on the type of permit used and the anticipated loss of waters of the United States (WUS). Therefore, in order to simplify the submittal preparation, this checklist is divided into three parts. A "loss of WUS" includes adverse affects by filling, flooding, excavation, or drainage that is a result of the regulated activity.

Part 1: For projects with a loss of WUS less than 0.10 acres, submit a PCN to the Corps that includes the following:

- ❑ A cover letter that includes:
  1. Applicant information
     a. Agency name
     b. Name of contact person
     c. Mailing address
     d. Telephone number
     e. E-mail address
  2. Project information
     a. Project number(s)
     b. Location
        i Section(s), Township, Range
        ii Generally, describe WUS affected by project
        iii Location map
           - 8.5 x 11 County map or Quad map
           - Show beginning and end of project
           - Show any borrow areas
     c. Target letting or anticipated construction dates
     d. A description of the type and purpose of the project
     e. A description of the existing land use (agricultural lands, woodlands, etc.)
     f. If the project is located in a Federal Emergency Management Administration (FEMA) mapped floodway, include documentation that discharges comply with FEMA or FEMA approved local floodplain construction requirements.
     g. Types of project funding sources (Federal, State, or local)
     h. Identify if any threatened or endangered species are present. (For assistance, check with the County Conservation Office or Iowa DNR local wildlife and fisheries biologists.)
     i. Identify impacts, if any, to historical resources. Include copies of correspondence such as archaeological surveys and State Historic Preservation Officer (SHPO) clearances.
     j. Note any other agencies that will be reviewing the project for permits or clearances.
        i Iowa DNR (Floodplain Permits, NPDES Permits)
        ii FEMA flood insurance
     k. State if the contractor will be allowed to construct a temporary stream crossing, temporary stream access, or any other type of temporary structure or fill in WUS.

l. Note if the project will be reimbursed with Federal funds or not. For Federal-aid projects, also include the following:
   i Note if FHWA Environmental Concurrence has been obtained as a Categorical Exclusion (CE).
   ii If the project has been cleared as a CE:
      - Provide a copy of the FHWA Environmental Concurrence memo from the Iowa DOT Office of Location and Environment.
      - Indicate which work activity, as specified in the Corps' Regulatory Guidance Letter (RGL) No. 05-07, applies to the project.

- ❑ Preliminary project plans that include:
  1. Typical cross sections
  2. Main line and side roads cross-sections at stream crossings and wetlands locations only
  3. All borrow locations
  4. Bridge and culvert plans, including Type, Size and Location (TS&L) information
  5. WUS shown on the plan sheets. Include soils maps showing all soil types and highlight hydric soils. (Required only at crossing locations, not the entire project.)

Part 2: For projects with a loss of WUS between 0.10 and 0.50 acres, submit a PCN to the Corps that includes all the information noted for Part 1 above, plus the following:

- ❑ Wetland determinations and delineations that include:
  1. A description of the techniques used, a summary of the locations and impacts to WUS, including impacts related to channel work (e.g., lost channel length and how it was figured, fate of the old channel).
  2. For corridor projects impacting several locations, a table that summarizes impacts to WUS and proposed mitigation, including:
     a. Acreage for wetlands and ponds, linear feet for channels
     b. Cowardin (U. S. Fish and Wildlife classification system) and/or Hydro Geomorphic Method (HGM) classifications
     c. Project stationing to show locations
     d. Universal Transverse Mercator (UTM) coordinates for each crossing, if available

- ❑ Site-specific WUS information that includes:
  1. A depiction of the WUS impacted by the project (direct & indirect) on aerial photography at crossings and / or borrow locations.
  2. Delineation and determination forms (see examples provided in Appendix B of the 1987 Corps of Engineers Wetland Delineation Manual). Please note:
     a. Provide a description of how the boundary was identified.
     b. One form for center of wetland is not useful.
     c. Some non-wetland samples may be required to justify the boundary identified for the WUS.

- ❑ A mitigation concept that includes:
  1. Mitigation goals, including a no net loss statement (statement that project will not result in a net loss of water quality resources)
  2. A mitigation site search summary (note the cities, county conservation boards, Natural Resources Conservation Service (NRCS), or other agencies contacted).
  3. Information related to: mitigation site location; site specific objective; existing conditions relating to soils, hydrology, and vegetation; proposed manipulation of soils, hydrology, vegetation, landscape, and water control structures (preliminary design).
  4. Delineations of existing conditions (certified determination from NRCS on agricultural land)
  5. Management plans, acquisition plan, site ownership, agreements, excess, disposal
  6. Plat/Legal description for filing deed restriction (will be required when site is approved)
  7. Monitoring proposal
     a. Mitigation monitoring protocol
     b. Variations
     c. Timing, intervals
  8. Design plans of proposed mitigation sites, if available. Include mitigation area or locations of each site showing: proposed grading, seeding, and planting; expected limits of mitigation wetlands; and property lines.

Part 3: For projects with a loss of WUS greater than 0.5 acres, submit an IP application to the Corps that includes all of the information for Parts 1 and 2 above, plus the following:

- ❑ A Joint Application Form, completed as per the cover letter and instructions provided by the Corps. The Joint Application Form has been developed by the Corps and the Iowa DNR to obtain approval for both the Section 404 and Section 401 individual permits.

- ❑ Alternatives analysis and documentation, including:
  1. Descriptions of the other alignment or design alternatives considered, including the "do-nothing" alternative.
  2. Reasons why the preferred alternative was selected.

- ❑ Avoidance and minimization documentation, for both temporary and permanent impacts, including:
  1. Provide information on alternate alignments considered from files and environmental documents.
  2. Discuss special precautions related to minimization (adverse impacts to water quality, flooding, or erosion upstream and downstream from site).

Submittals

For projects that require a PCN (Parts 1 or 2), submit 1 copy of the information listed to the Corps (see Contact Information section in I.M. 3.130). For projects that require an IP (Part 3), submit copies as indicated in the Joint Application form cover letter and instructions.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: February 21, 2008
From:	Office of Local Systems	I.M. No. 3.140
Subject:	Storm Water Permits	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for a Local Public Agency (LPA) to comply with the National Pollution Discharge Elimination System (NPDES) regulations, as they apply to LPA construction projects. This I.M. also includes the following attachments:

Attachment A – Sample Pollution Prevention Plan (Microsoft Word)

Introduction

The Environmental Protection Agency (EPA), through its storm water program, issues regulations to protect the water quality of the United States. These regulations implement the requirements of the Clean Water Act (CWA) of 1972. The EPA has taken a phased approach to implementing these regulations.

Phase I of the EPA's regulations uses the National Pollution Discharge Elimination System (NPDES) to govern storm water runoff from several activities. These activities include: (1) Municipal Separate Storm Sewer Systems (MS4s) that serve populations greater than 100,000; (2) construction activities that disturb 5 acres of land or greater; and (3) ten categories of industrial activity. LPAs that serve populations less than 100,000 were exempted from the Phase I requirements.

The EPA's Phase II regulations primarily address two activities: (1) MS4s operated by governments that serve a population less than 100,000; and (2) small construction activities that disturb greater than or equal to 1 acre and less than 5 acres. The Phase II regulations also removed the Phase I exemption for LPAs that serve a population of less than 100,000.

The combination of the Phase I and Phase II regulations has potential to affect all cities and counties in Iowa. However, only the regulations that pertain to construction activities are relevant to the development of LPA transportation construction projects. Therefore, this I.M. will focus only on the necessary permits, processes, and procedures required for LPA transportation construction projects that are currently subject to EPA's storm water regulations.

Which projects will require a storm water permit?

The Phase I regulations govern construction activities that disturb greater than or equal to 5 acres, while the Phase II regulations govern construction activities that disturb 1 to 5 acres. Therefore, all construction projects that disturb greater than or equal to 1 acre of land will require a NPDES permit from the Iowa Department of Natural Resources (Iowa DNR).

Some LPA transportation projects are considered as maintenance under the NPDES regulations, and therefore do not require a permit. Maintenance of transportation facilities would include activities that maintain the original grade, slope, or hydraulic capacity. Examples would include resurfacing projects that only involve work on the roadway and / or shoulders and maintain the original roadway and / or shoulder width. In other words, the original roadway and / or shoulder footprint remains the same. Another example would be ditch cleaning that only removes accumulated sediment and returns the ditch to the original slope.

Nevertheless, appropriate erosion control measures should always be used, even if a permit is not required. If the Iowa DNR observes a problem on a project that does not require a permit, it has the authority to require a permit and suspend work until a permit is obtained.

Which permit is required?

The Iowa DNR uses NPDES General Permit No. 2 for construction activities subject to the Phase I and Phase II regulations. Most LPA transportation construction projects should be able to obtain coverage under General

Permit No. 2. However, at its discretion, the Iowa DNR may require an individual permit. The Iowa DNR will notify the LPA if an individual permit is needed.

General Permit No. 2 Requirements

What follows is a summary of the steps that the LPA should follow to comply with terms and conditions of General Permit No. 2. For all projects let by the Iowa DOT, and for all Federal-aid projects let locally, the LPA shall not make the contractor responsible for obtaining the applicable permit or filing the appropriate notices. For more detailed guidance, the LPA should carefully read the terms and conditions of Iowa DNR NPDES General Permit No. 2.

1. Prepare Project Plans

The Iowa DOT requires the following items for project plans let through the Iowa DOT:

Note: For projects that are let locally, the LPA may wish to use the following list as a guide, since the NPDES storm water regulations may apply to any construction project, regardless of funding source and regardless of how the contract is let or administered.

A. Storm Water Permit Plan Note

Include a note on the title sheet indicating the project is subject to the conditions of Iowa DNR's NPDES General Permit No. 2. If an individual permit is required, specify the individual permit number instead.

This note is required because it is important that the bidders are aware of the project requirements with respect to storm water pollution prevention. It also notifies the Iowa DOT that the LPA has obtained (or will obtain) the permit. For the required text of this note, refer to I.M. 3.505, Check and Final Plans, Attachment B.

General Permit No. 2 also requires that contractors and any applicable subcontractors sign a certification whereby they acknowledge that they understand and agree to comply with the terms and conditions of the General Permit No. 2. By signing such a certification, contractors and subcontractors become co-permittees along with the LPA. For projects let by the Iowa DOT, this certification will be included with the contract documents that are prepared by the Iowa DOT Office of Contracts. For projects that are let locally, the LPA shall include this certification to the contractor and any subcontractors with the contract documents. The contractor will return this certification to the LPA along with the other contract documents.

B. Storm Water Pollution Prevention Plan (PPP)

The project plans shall include a PPP that meets the requirements of General Permit No. 2. There are several resources that provide guidance in preparing an adequate PPP. Designers should consider the Iowa DNR's guide, titled, "A Brief Guide to Developing Pollution Prevention Plans and Best Management Practices – Summary Guidance." Also, Chapter 7 of the Iowa Statewide Urban Design Standards Manual provides an excellent guide to erosion and sediment control measures that should be considered as part of the PPP.

In addition, the Iowa DOT has developed a Sample Pollution Prevention Plan, which is included as Attachment A to this I.M. This sample PPP uses a "fill-in-the-blank" format and must be modified to fit project-specific conditions. The designer should carefully examine the needs of each project and determine if the sample PPP is adequate. The sample PPP is provided for guidance purposes only. The LPA assumes all responsibility for the accuracy and adequacy of the PPP shown on the project plans.

The Iowa DOT has also developed instructions for preparing a PPP, which are contained in Section 10D-1 of the Iowa DOT Design Manual. When referring to these instructions, keep in mind they are written for Iowa DOT staff use, and as such they reflect "in-house" procedures. Nevertheless, the instructions related to preparation of the PPP may be helpful for LPA project designers.

C. Bid Items for Erosion Control Measures

The project plans shall include the appropriate bid items needed to carry out the contractors' obligations under the PPP. For projects that will be let by the Iowa DOT, refer to Sections 2601 and 2602 of the Iowa DOT Standard Specifications for the appropriate bid items corresponding to the various erosion control measures specified by the PPP. The Iowa DOT Standard Specifications are available on-line as part of the Iowa DOT's Electronic Reference Library.

D. Plan Details

The project plans shall include tabulations, details, and plan sheets, as required by the complexity of the project, to show the erosion control measures specified by the PPP.

The amount of detail necessary will vary with each project. However, enough detail must be provided so that bidders can accurately estimate the cost of work required by the PPP. Insufficient detail in the plans can lead to inadequate control of soil erosion, disputes, claims for additional compensation, and costly project delays.

2. Give Public Notice

Before applying for a permit, give public notice of intent to seek coverage under General Permit No. 2. This public notice must be published for at least one day in at least two newspapers with the largest circulation in the project area. The Iowa DNR has developed a sample Public Notice of Storm Water Discharge that may be used as a guide in preparing the required public notice.

3. Apply for Permit

Application for General Permit No. 2 is made by submitting a Notice of Intent (NOI) form, proof of public notification, and the applicable fees to the Iowa DNR.

4. Implement the PPP

The PPP must be carried out from time construction begins until the site has been stabilized. This includes making any necessary modifications to the PPP, inspection, and maintenance of the erosion control measures.

5. Submit Notice of Discontinuation

After the project site has been stabilized, the Iowa DNR must be notified by submitting a Notice of Discontinuation (NOD) to the Iowa DNR.

Resource Information for Storm Water Regulations

- Iowa DNR, Storm Water Program Home Page. A directory of the Iowa DNR's on-line information relating to storm water regulations. Contains links to general information about storm water permits in Iowa, forms, permits, and guidance documents.
- EPA Storm Water Program Home Page. Gives an overview of the types of activities that are regulated by EPA's Storm Water Program as implemented by the NPDES permitting system. Contains links to more information on the Phase I and Phase II regulations.
- EPA Storm Water Phase II Final Rule Fact Sheet Series Index. The fact sheets give helpful summaries of all aspects of the Phase II regulations. Refer to Fact Sheet 1.0 for an overview of the Phase II regulations as a whole. Refer to Fact Sheet 3.0 for information specific to construction activities.

Sample Pollution Prevention Plan

[Note: bracketed text indicates areas that should be modified for project-specific conditions]

All contractors/subcontractors shall conduct their operations in a manner that minimizes erosion and prevents sediments from leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the Pollution Prevention Plan (PPP) for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

1. SITE DESCRIPTION

This Pollution Prevention Plan (PPP) is for the construction of [enter project description here].

This PPP covers approximately [total project area] acres with an estimated [disturbed project area] acres being disturbed. The portion of the PPP covered by this contract has [disturbed project area under contract] acres disturbed.

The PPP is located in an area of [number of soil associations] soil association(s) ([list names of soil associations]). The estimated average NRCS runoff curve number for this PPP after completion will be [estimated NRCS number].

Refer to the project plans for locations of typical slopes, ditch grades, and major structural and non-structural controls. A copy of this plan will be on file at the project engineer's office. Runoff from this work will flow into [list receiving waters here].

POTENTIAL SOURCES OF POLLUTION:
Site sources of pollution generated as a result of this work relate to silts and sediment which may be transported as a result of a storm event. However, this PPP provides conveyance for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this PPP. Potentially this runoff can contain various pollutants related to site-specific land uses. Examples are:

Rural Agricultural Activities:
Runoff from agricultural land use can potentially contain chemicals including herbicides, pesticides, fungicides and fertilizers.

Commercial and Industrial Activities:
Runoff from commercial and industrial land use may contain constituents associated with the specific operation. Such operations are subject to potential leaks and spills which could be commingled with run-off from the facility. Pollutants associated with commercial and industrial activities are not readily available since they are typically proprietary.

2. CONTROLS

At locations where runoff can move offsite, silt fence shall be placed along the perimeter of the areas to be disturbed prior to beginning grading, excavation or clearing and grubbing operations. Vegetation in areas not needed for construction shall be preserved. As areas reach their final grade, additional silt fences, silt basins, intercepting ditches, sod flumes, letdowns, bridge end drains, and earth dikes shall be installed as specified in the plans and/or as required by the project engineer. This will include using silt fence as ditch checks and to protect intakes. Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. Other stabilizing methods shall be used outside the seeding time period.

This work shall be done in accordance with Section 2602 of the Standard Specifications. If the work involved is not applicable to any contract items, the work shall be paid for according to Article 1109.03 paragraph B.

As the work progresses, additional erosion control items may be required as determined by the engineer after field investigation. These may be items such as [list additional control measures that may be needed here] and other appropriate measures shall be installed by contractor, as directed by the engineer. The contractor will complete the construction with the establishment of permanent perennial vegetation of all disturbed areas.

3. OTHER CONTROLS

Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

APPROVED STATE OR LOCAL PLANS:
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

4. MAINTENANCE

The contractor is required to maintain all temporary erosion control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. Cleaning of silt control devices shall begin when the features have lost 50% of their capacity.

5. INSPECTIONS

Inspections shall be made jointly by the contractor and the contracting authority every seven calendar days and after each rain event that is one half inch or greater. The contractor shall immediately begin corrective action on all deficiencies found. The findings of this inspection shall be recorded in the project diary. This PPP may be revised based on the findings of the inspection. The contractor shall implement all revisions. All corrective actions shall be completed within 3 calendar days of the inspection.

6. NON-STORM DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains), slope drains and bridge end drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone or erosion stone.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: December 3, 2007
From:	Office of Local Systems	I.M. No. 3.150
Subject:	Highway Improvements in the Vicinity of Airports or Heliports	

Contents: This Instructional Memorandum (I.M.) provides guidance for a Local Public Agency (LPA) to comply with the notification requirements associated with improvements or alterations conducted in the vicinity of a public airport or heliport. This information is provided as a guide only. The Iowa Department of Transportation (Iowa DOT) does not oversee or monitor these requirements.

Introduction

To protect navigable airspace from encroachment by either construction operations or alterations, the Federal Aviation Administration (FAA) promulgated 14 CFR 77. This regulation defines the airspace next to a public airport or heliport that requires a Notice of Proposed Construction or Alteration.

All public airports in Iowa are shown on the Iowa Aeronautical Chart, published by the Iowa DOT. Copies of this chart may be obtained free of charge at any public airport, or by contacting the Iowa DOT Office of Aviation at 515-239-1691, or by ordering on-line using the Office of Aviation's Publications Order form.

Notification Criteria

The FAA does not need to be notified if the highway construction or alteration is taking place more than 20,000 feet from any public airport or heliport. For construction or alteration activities within 20,000 feet of a public airport or heliport, the FAA must be notified under the following conditions:

1. If the affected public airport has a runway greater than 3,200 feet in length:

   The FAA must be notified if a point taken 15 feet above the highest point of the roadway, or any proposed construction or alteration, including construction equipment or utility poles, penetrates an imaginary surface that extends outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway. See Figure 1 below.

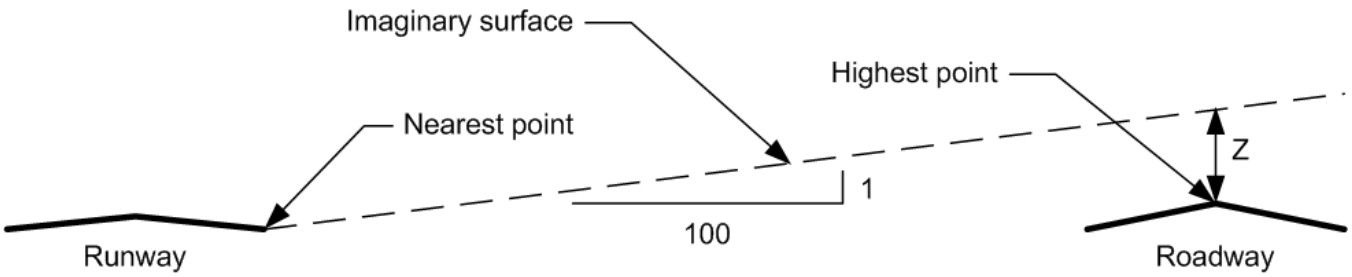


Figure 1 – Runways > 3,200 feet
If "Z" is less than 15 feet, then Form 7460-1 must be completed and submitted to the FAA.

2. If the affected public airport has a runway less than or equal to 3,200 feet in length:

   The FAA must be notified if a point taken 15 feet above the highest point of the roadway, or any proposed construction or alteration, including construction equipment or utility poles, penetrates an imaginary surface that extends outward and upward at a slope of 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway. See Figure 2 below.

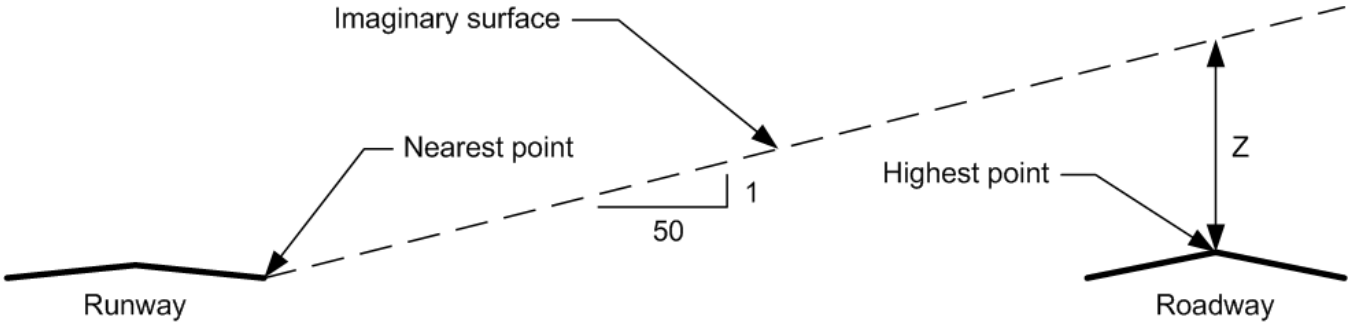


Figure 2 – Runways < 3,200 feet
If "Z" is less than 15 feet, then Form 7460-1 must be completed and submitted to the FAA.

3. For heliports:

   The FAA must be notified if a point taken 15 feet above the highest point of the roadway, or any proposed construction or alteration, including construction equipment or utility poles, penetrates an imaginary surface that extends outward and upward at a slope of 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area. See Figure 3 below.

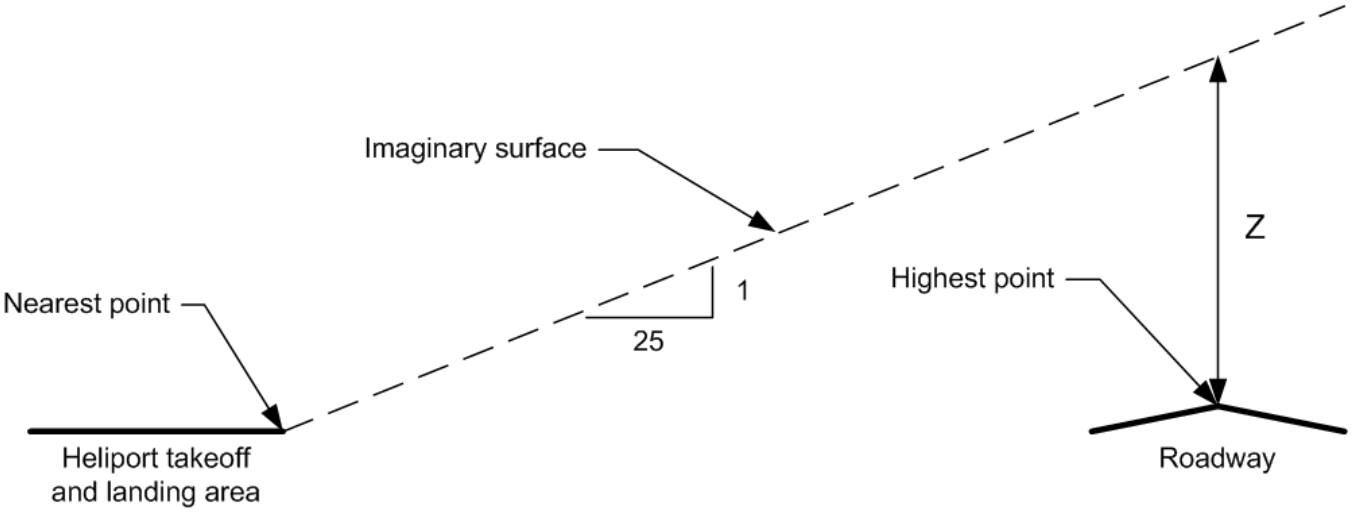


Figure 3 - Heliports
If "Z" is less than 15 feet, then Form 7460-1 must be completed and submitted to the FAA.

Note: Each of the situations shown above assumes the roadway is a not an Interstate Highway. If the roadway is an Interstate Highway, use 17 feet for the "Z" dimension shown in the diagrams above.

Notification Procedures

Notification is made using FAA Form 7460-1, Notice of Proposed Construction or Alteration. The LPA shall submit this form to the FAA either electronically or by mail. To obtain a copy of the form and / or to submit it electronically, refer to the FAA's Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) web site. Completed paper forms should be mailed to the address shown on this web site.

Construction should not begin until the LPA receives an acknowledgment from the FAA, which will include a determination of the impact of the proposed construction. In some cases, the FAA may require additional study or may require the LPA to file a supplemental notice at least 48 hours before the start of the proposed construction. Therefore, the Form 7460-1 should be submitted at least 60 days, but in no case less than 30 days, prior to beginning construction.

Other Restrictions

Any highway project financed with Federal highway funds shall comply with Section 318 of Title 23 U.S.C., Highway Relocation Due to Airport. This code section does not allow Federal participation in highways which serve an airport, or which must be relocated or reconstructed to accommodate airport improvements, unless such participation has been found to be in the public interest, as determined by the Iowa DOT and the Federal Highway Administration (FHWA).

During activities on, or in proximity to, an airport, including maintenance or construction, the LPA shall contact the airport manager and comply with FAA Advisory Circular No. 150/5370-2E, “Operational Safety on Airports During Construction”, and FAA Advisory Circular No. 150/5210-5C, “Painting, Marking, and Lighting of Vehicles Used on An Airport.”

Any highway construction that may create a potential wildlife attractant within 5,000 feet of an airport serving piston powered aircraft, or 10,000 feet of an airport serving turbine powered aircraft, should also comply with the FAA Advisory Circular No. 150/5200-33B, “Hazardous Wildlife Attractants on or Near Airports.”

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: April 12, 2007
From:	Office of Local Systems	I.M. No. 3.160
Subject:	Asbestos Inspection, Removal, and Notification Requirements	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures to assist a Local Public Agency (LPA) in complying with the various State and Federal asbestos laws and regulations when demolishing a building structure or an entire bridge. This I.M. also includes the following attachments:

Attachment A - Notification of Demolition form (also available in Word format)

Note: The procedures in this I.M. are required for all LPA projects let through the Iowa Department of Transportation (Iowa DOT) and are designed to comply with the Environmental Protection Agency (EPA) and Iowa Department of Natural Resources (Iowa DNR) laws and regulations. The EPA and Iowa DNR laws and regulations must be followed, regardless of which agency conducts the project letting. Therefore, the Iowa DOT strongly recommends the procedures outlined in this I.M. also be used for projects that are let locally.

Definitions

Bridge - any structure including supports, erected over a depression or an obstruction, as water, a highway, or railway. A bridge has a track or passageway for carrying traffic or other moving loads and has an opening measured along the center of the roadway of more than 20 feet. The measurement shall be between the inside faces of abutments, the inside faces of the exterior walls of multiple box culverts, the spring lines of arches, and the horizontal measurement of circular or elliptical structures.

Contacts

To locate a licensed asbestos inspector or contractor, contact the Iowa Division of Labor at 515-281-6175 or visit their Asbestos Licensees and Permittees web page.

For questions concerning the asbestos laws, regulations, or procedures, contact the Iowa Department of Natural Resources, attn. Mr. Marion Burnside (515-281-8443 or marion.burnside@dnr.state.ia.us).

Bridges

Inspection

If the bridge is constructed entirely of a standard Portland cement concrete (PCC) mixture or is constructed entirely of wood, it is very unlikely that suspect asbestos containing material is present and a thorough asbestos inspection will not be necessary.

If there is a possibility of asbestos being present in or on the bridge to be removed, the LPA must have a thorough asbestos inspection by a person knowledgeable in asbestos materials, sampling techniques, and familiar with all asbestos regulations. Suspect asbestos containing materials on bridges include, but are not limited to, utility conduits, rocker pads, paint on metal, waterproofing membrane between PCC and HMA overlay, expansion joint material, reclaimed hot mix asphalt (HMA) that may have incorporated reclaimed shingles in the mix, and PCC that may have used asbestos fibers in the mix.

A thorough inspection means all suspect asbestos containing materials, or material assumed to contain asbestos, will be sampled and submitted for laboratory analysis, and all such materials will be handled in accordance with the applicable State and Federal regulations. If a city or county is hiring an inspector, the person must be a licensed asbestos inspector. To locate a licensed asbestos inspectors, see “Contacts” above. A three day asbestos inspector training class is available from the Iowa Division of Labor for $20 per individual.

As an alternative to collecting samples and submitting them for laboratory analysis, the LPA may presume the material to contain asbestos. However, all such presumed asbestos containing materials would have to be properly removed and disposed of by a licensed asbestos contractor.

Removal

If asbestos is present, a licensed asbestos contractor will be required to remove it prior to the commencement of demolition, or in rare situations in coordination with the bridge contractor's project. The only reason asbestos should still be present at the time bridge demolition begins is if it has been incorporated in the bridge and it can not be removed without part of the bridge being removed. Any bridge debris that is contaminated with asbestos must be disposed of in accordance with the regulations.

To locate a licensed asbestos contractor, see "Contacts" above. The asbestos contractor must complete the Notification of Demolition and Renovation form as detailed in Title 40, Section 61.145 of the code of Federal Regulations (40 CFR 61.145).

Contract Documents

If these procedures are used on LPA let projects, the language of Article 2401.02, Notification for Complete Removal of Bridge, in the Iowa DOT Standard Specifications should be included in the contract documents.

LPA projects let through the Iowa DOT that involve demolition of an existing bridge shall use Bid Item 2401-6745625, Removal of Existing Bridge. Do not use Bid Item 2401-6745650, Removal of Existing Structure, if only a bridge is being demolished. If there are structures to be removed, other than the bridge, Bid Item 2401-6745650, Removal of Existing Structures, must also appear on the plans. The use of Bid Item 2401-6745625, Removal of Existing Bridge, is required to automatically generate the "Notification of Demolition" form (see Attachment A) that the Office of Contracts will send to the contractor.

A plan note should be added to the plans, whether the project is let through the Iowa DOT or LPA, to notify the contractor on the rare occasion that asbestos will still be present at the time bridge demolition begins. This note should notify the contractor whether the LPA will contract with a licensed asbestos contractor and the prime contractor will be required to coordinate with them; or if they will be required to sublet to a licensed asbestos contractor to remove any remaining asbestos during the bridge's demolition. The costs associated with the latter should be included in Bid Item 2401-6745625, Removal of Existing Bridge.

Notification

All bridge demolitions require submission of a "Notification of Demolition" form to the Iowa DNR, even if no asbestos existed.

On Iowa DOT let projects, the Office of Contracts will supply a partially completed "Notification of Demolition" form with the other contract documents after the letting.

On LPA let projects, the LPA should partially complete the "Notification of Demolition" form and send it to the successful bidder with the contract. Use only this form for notification as it meets the EPA and DNR's requirements. The LPA should complete the following parts of the form:

2. Facility info; Owner: the name of the city or county that owns the bridge.
   Engineer: the name, address, and phone number of the city or county engineer responsible for the bridge.
   Prime Contractor: the name, address, and phone number of the contractor being awarded the contract.
4. Is asbestos present?: check if asbestos will be present or not at the time demolition begins.
5. Facility description:
   (new) FHWA No.: the FHWA Structure number that is assigned to the bridge as part of the reconstruction.
   Rte: on Farm to Market projects, use the route number; for all others use the name of the street.
   Cnty: the name of the county.
   Location: directions on how to drive to the bridge if unfamiliar with the area.
   Size: the number of square feet of bridge deck.
   Age: the number of years since the bridge was built.
6. Procedure, including analytical method, if appropriate, used to detect the presence of asbestos material: PLM, Polarized Light Microscopy, is the standard and least expensive analytical method used by a lab to detect the presence of asbestos. If the bridge is inspected by a competent person, change the mark.

Box Area:

Attention: enter the prime contractor's company name.

Complete the remainder of the blanks in the boxed area with the line number for the Bid Item 2401-6745625, Removal of Existing Bridge, on this contract; the name of the county of the contract; and the project number.

The contractor shall complete the remaining portions of the form and submit it according to Article 2401.02, Notification for Complete Removal of Bridge, in the Standard Specifications. According to 40 CFR 61.145 "Delivery of the notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable." The Iowa DNR will not accept Fax or e-mail because the postmark or delivery notice date is used to meet the Iowa DNR's notification requirement.

Once the contractor sends the notification to the Iowa DNR, they may proceed as planned unless contacted by the Iowa DNR.

Lack of notification will allow the Iowa DNR to assess penalties up to $10,000 on the LPA, the contractor, or both.

Building Structures

If a building structure is to be demolished, the procedures are similar to those described for bridges above. However, there are some important differences, and it is beyond the scope of this I.M. to adequately describe the process for buildings. Therefore, the Iowa DOT strongly recommends the LPA contact a licensed asbestos inspector for additional guidance and assistance.

The asbestos inspection and removal must be completed prior to demolition. For projects let through the Iowa DOT, this work should ordinarily be completed before the project is submitted for letting.

N O T I F I C A T I O N O F D E M O L I T I O N

1. Type of notification: {_} ORIGINAL {_} REVISED

2. Facility info; Owner: _____
   Engineer: _____
   _____
   _____ ph: _____

   Prime Contractor: _____
   _____
   _____ ph: _____

   Removal Contractor if not the Prime: _____

   Address: _____

2a. Contact Person: _____ ph: _____

3. Type of operation: DEMOLITION / REMOVAL OF EXISITNG BRIDGE

4. Is asbestos present?: {_} NO {_} YES

5. Facility description: (existing bridge data from plans or Engineer)
   (new) FHWA No.: _____
   Rte/Cnty/St: _____ / _____ / IOWA
   Location: _____
   _____
   Present/Prior Use: Vehicular bridge / Vehicular bridge
   Size: _____ sq.ft. No. of Floors: 1 Age: _____ Yrs

6. Procedure, including analytical method, if appropriate, used to detect the presence of asbestos material: {X} PLM {_} Inspected by competent person.

7. Scheduled removal dates: Start ____/____/20____ Complete ____/____/20____

8. Procedures to be followed in the event that unexpected asbestos is found or previously non-friable asbestos material becomes crumbled, pulverized, or reduced to powder: STOP WORK. CALL A CERTIFIED ASBESTOS CONTRACTOR.

9. I certify that the above information is correct to the best of my knowledge.

_____ _____
(Signature of Prime Contractor Representative) (Date)

Attention _____
This form is specific to Contract Line No. ____ for _____ County project _____

- o Verify or correct response to item 6.
- o Complete items 1, 2, 2a, 7, and 9.
- o Send a copy to the Engineer shown in item 2.
- o Send the original to the DNR at the following address:

Air Quality Bureau
Attn: Mr. Marion Burnside
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Des Moines, IA 50322 FAX: 515/242-5094

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.205
Subject:	Urban Design Guidelines	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing documents, which are included on the pages immediately following this placeholder page:

- Packet, Index No. 5, Urban Design Aids
- Packet, Index No. 5, Alternative Design Guides
- Packet, Index No. 5, Design Exception Process for City Federal-aid Projects

When I.M. 3.205 is complete, this placeholder page and the existing documents referenced above should be removed and replaced with the new I.M 3.205.

URBAN DESIGN AIDS

These aids are presented to help in the design of new or completely reconstructed non-primary city streets when federal-aid funds are utilized. The values in this table are based primarily on AASHTO's "A Policy on Geometric Design of Highways and Streets," 2001 Edition, commonly known as "the Green Book."

Designers should select values that yield the highest level of design that is practicable and economically justified. Proposed design values between this table and the "Alternative Urban Design Guides" do not constitute a design exception. However, if the proposed design values do not meet the criteria set forth in this table, the designer must provide reasons to the appropriate Iowa DOT District Local Systems Engineer.

This table is applicable for design of two or four lane urban streets with a curbed section. For non-curbed sections, or for roadways in undeveloped areas within the city limits, refer to Instructional Memorandum (I.M.) 3.210, located in Appendix A. For guidance on design elements not shown in this table or in I.M. 3.210, refer to the AASHTO Green Book.

DESIGN ELEMENT	ARTERIAL[1]				COLLECTOR[1]				LOCAL[1]			
	Commercial or Industrial		Fringe or Residential		Commercial or Industrial		Fringe or Residential		Commercial or Industrial		Fringe or Residential	
Traffic Lanes (number)[2]	4	2	4	2	4	2	4	2	4	2	4	2
Design Speed (mph)[3]	40	40	50	40	40	40	40	40	30	30	30	30
Stopping Sight Distance (ft.)	305	305	425	305	305	305	305	305	200	200	200	200
Horizontal Curve Radius (ft.)[4]	565	565	930	565	565	565	565	565	300	300	300	300
Maximum Gradient (percent)[5]	5	5	7	8	5	5	9	9	5	5	9	11
Travel Lane Width (ft.)	12	12	12	12	12	12	12	12	12	12	11	11
Parking Lane Width (ft.)[6]	12	12	11	11	11	11	8	8	10	10	8	8
Curb & Gutter Width (ft.)[7]	2.5	3.5	2.5	3.5	2.5	3.5	2.5	2.5	2.5	2.5	2.5	2.5
Raised Median Width (ft.)[8]	6	NA	6	NA	4	NA	4	NA	4	NA	4	NA
Raised Median with Lt. Turn Lane Width (ft)[9]	18	NA	18	NA	16	NA	16	NA	14	NA	14	NA
Two Way Left Turn Lane Width (ft.)	14	NA	14	NA	14	NA	14	NA	12	NA	12	NA
Border Area Width (ft.)[10]	12	12	12	12	11	11	11	11	10	10	10	10
Vertical Clearance (ft.)	16.5	16.5	16.5	16.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
Horizontal Clearance (ft.)[11]	10	10	10	10	10	10	10	10	10	10	10	10
New Bridge Roadway Width (ft.)[12]	56	32	56	32	56	32	56	32	56	32	52	30
Existing Bridge Roadway Width, (ft.)[13]	52	30	52	30	52	30	52	28	52	28	48	26

[1] Use the roadway classification corresponding to the existing Federal Functional Classification.
[2] The actual number of lanes should be based on highway capacity. For more than four lanes, refer to the Green Book.
[3] Design speed should be posted speed plus 5 mph, if practicable.
[4] Values for arterials and collectors are based on high speed urban criteria with a superelevation rate of 4 percent. Values for local streets are based on low speed urban criteria and with a negative 2 percent superelevation. Superelevation of more than 4% is not recommended for urban streets. For minimum radii corresponding to other superelevation rates, refer to the Green Book.
[5] Maximum gradient may be increased by 2 percent for short distances (< 500') and on one-way down grades.
[6] Gutter width may be included as part of the parking lane width.
[7] Curbs should be mountable when the posted speed is 45 mph or more, if practicable. Widths shown in this table are from the edge of the traveled way to the back of curb and assume approximately 6 inches from the face to back of the curb.
[8] Median width is measured from the edges of traveled ways for opposing traffic lanes.
[9] Measured from the opposing lane edge of traveled way to the outside edge of the left turn lane.
[10] Border area is the area between the roadway and the right-of-way line. Usually includes sidewalk at least 4' in width.
[11] Horizontal clearance is measured from the face of curb, except when a continuous-use parking lane is provided. In this case, measure from the edge of traveled way of the through traffic lane immediately adjacent to the parking lane. In all cases, at least 1.5 feet of set back should be provided from the face of curb to avoid interference with car doors.
[12] Values shown are based on the traveled way width plus 4 feet on both sides and do not include parking, medians or sidewalks. One sidewalk should be extended across structure. Guardrail should be installed when posted speed is over 35 mph. Design Loading should be HS-20.
[13] Values shown are based on the face-of-curb to face-of-curb width and do not include parking, medians or sidewalks. Design loading should be at least HS-15, except local may be H-15. Guardrail and bridge rails which are structurally deficient and functionally obsolete should be reviewed for possible upgrading.

ALTERNATIVE URBAN DESIGN GUIDES

These guides are presented as alternative design criteria for design of new or completely reconstructed non-primary city streets when federal-aid funds are utilized. The values in this table are based primarily on AASHTO's "A Policy on Geometric Design of Highways and Streets," 2001 Edition, commonly known as "the Green Book."

For federal-aid projects, proposed design values below this table will require a design exception. Design exceptions will be considered on a project-by-project basis and must have concurrence by the appropriate Iowa DOT District Local Systems Engineer.

This table is applicable for design of two or four lane urban streets with a curbed section. For non-curbed sections, or for roadways in undeveloped areas within the city limits, refer to Instructional Memorandum (I.M.) 3.210, located in Appendix A. For guidance on design elements not shown in this table or in I.M. 3.210, refer to the AASHTO Green Book.

DESIGN ELEMENT	ARTERIAL[1]				COLLECTOR[1]				LOCAL[1]			
	Commercial or Industrial		Fringe or Residential		Commercial or Industrial		Fringe or Residential		Commercial or Industrial		Fringe or Residential	
Traffic Lanes (number)[2]	4	2	4	2	4	2	4	2	4	2	4	2
Design Speed (mph)[3]	30	30	40	30	30	30	30	30	20	20	20	20
Stopping Sight Distance (ft.)	200	200	305	200	200	200	200	200	115	115	115	115
Horizontal Curve Radius (ft.)[4]	230	230	490	230	230	230	230	230	100	100	100	100
Maximum Gradient (percent)[5]	8	8	8	9	8	8	10	11	8	8	11	12
Travel Lane Width (ft.)	11	11	11	11	11	11	10	10	11	11	10	10
Parking Lane Width (ft.)[6]	10	10	8	8	8	8	7	7	8	8	7	7
Curb & Gutter Width (ft.)[7]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Raised Median Width (ft.)[8]	4	NA	4	NA	2	NA	2	NA	2	NA	2	NA
Raised Median with Lt. Turn Lane Width (ft)[9]	12	NA	12	NA	10	NA	10	NA	10	NA	10	NA
Two Way Left Turn Lane Width (ft.)	14	NA	14	NA	12	NA	12	NA	10	NA	10	NA
Border Area Width (ft.)[10]	8	8	8	8	8	8	8	8	5	5	5	5
Vertical Clearance (ft.)	14	14	14	14	14	14	14	14	14	14	14	14
Horizontal Clearance (ft.)[11]	3	3	3	3	2	2	2	2	1.5	1.5	1.5	1.5
New Bridge Roadway Width (ft.)[12]	46	24	46	24	46	24	42	22	46	24	42	22
Existing Bridge Roadway Width, (ft.)[13]	44	22	44	22	44	22	40	20	44	22	40	20

[1] Use the roadway classification corresponding to the existing Federal Functional Classification.
[2] The actual number of lanes should be based on highway capacity. For more than four lanes, refer to the Green Book.
[3] Design speed should be equal or greater than the posted speed.
[4] Values for arterials and collectors are based on low speed urban criteria with a superelevation rate of 4%. Values for local streets are based on low speed urban criteria with a normal crown section (assumes negative 2% superelevation). Superelevation of more than 4% is not recommended for urban streets. For minimum radii corresponding to other superelevation rates, refer to the Green Book. Design speeds of 30 mph or less may warrant elimination of superelevation.
[5] Maximum gradient may be increased by 2 percent for short distances (< 500 ft.) and on one-way down grades.
[6] Gutter width may be included as part of the parking lane width.
[7] Curbs should be mountable when the posted speed is 50 mph or more. Widths shown in this table are from the edge of the traveled way to the back of curb and assume approximately 6 inches from the face to back of the curb.
[8] Median width is measured from the edges of traveled ways for opposing traffic lanes.
[9] Measured from the opposing lane edge of traveled way to the outside edge of the left turn lane.
[10] Border area is the area between the roadway and the right-of-way line. Usually includes sidewalk at least 4' in width.
[11] Horizontal clearance is measured from the face of curb, except when a continuous-use parking lane is provided. In this case, no additional horizontal clearance is required. In all cases, at least 1.5 feet of set back should be provided from the face of curb to avoid interference with car doors. Newly installed or relocated fixed objects (such utility poles, traffic signal supports, etc.) should be placed at the right of way line or with a horizontal clearance of 10 feet from the face of curb.
[12] Values shown are based on the face-of-curb to face-of-curb width and do not include parking, medians or sidewalks. One sidewalk should be extended across structure. Guardrail should be installed when posted speed is over 35 mph. Design Loading should be HS-20.
[13] Values shown are based on the traveled way width and do not include parking, medians or sidewalks. Design loading should be at least HS-15, except local may be H-15. Guardrail and bridge rails which are structurally deficient and functionally obsolete should be reviewed for possible upgrading.

DESIGN EXCEPTION PROCESS

For City Federal-Aid Projects

INTRODUCTION

Design criteria for city federal-aid projects is organized into three tables; *Urban Design Aids* (Aids), *Alternative Urban Design Guides* (Guides), and *Urban 3R Guidelines* (3R). These tables are to assist designers of non-primary city federal-aid street or bridge projects. They should not be considered as hard and fast standards. Each design element should reflect the highest value practicable in order to satisfy the demands for service in the safest and most economical manner. Refer to *Application of Design Criteria*, also located in this index, for more information on design criteria tables.

FACTORS TO CONSIDER

City officials consider either directly or indirectly many factors when deciding the type or extent of improvement needed on a street or bridge. Some of these factors are:

1. Pavement Condition - The type of pavement improvements needed and the existing street conditions dictate what improvements are practical. Upgrading geometrics may be appropriate if the total pavement improvement is substantial. When pavement improvements are relatively minor, it may not be economical to make major changes.

2. Physical Characteristics - The physical characteristics of a street and its location often determine what improvements are desirable, practical, or cost effective. Topography, adjacent development, existing alignment, and cross-section should be considered when determining the scope of geometric or safety improvements.

3. Traffic Volumes - Traffic data (volume, truck percentage) are important considerations in the determination of the appropriate level of improvement (reconstruct vs. 3R), and in the selection of the geometrics (4-lane, street width, etc.).

4. Functional Classification - Drivers associate and may expect certain geometrics and levels of design with each functional class.

5. Traffic Control and Regulations - Traffic regulations, positive guidance techniques (signs, markings), and traffic operational improvements can postpone costly reconstruction. These techniques can reduce or eliminate adverse safety and operational features of existing streets.

6. Safety Enhancement - Safety is an essential consideration for all proposed federal-aid projects. 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. This evaluation is an integral part of project development.

8. Economics - The economics of a project is a major factor in determining the priority and scope of work. This is especially true of 3R projects which prolong and preserve the service life of existing streets. 3R projects should protect the investment in and derive the maximum economic benefit from the existing street. They should also enhance safety where feasible.

9. Potential 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 may be especially true on 3R projects where existing right of way is narrow and there is adjacent development. Context-sensitive design is a method whereby flexibility can be introduced to the design.

10. Other Factors - Maximum benefit for the dollar invested, compatibility with adjacent sections of unimproved streets, and the probable time before reconstruction are other factors which could be considered.

After considering various factors, the city officials may find themselves in a position where a proposed improvement doesn't meet one or more of the design elements in the tables.

A project involving new construction or complete reconstruction where the design elements will not meet or exceed the *Urban Design Aids* values will need to be reviewed with the Iowa DOT. The reasons for the lower values and the project characteristics need to be provided to the Iowa DOT. The District Local Systems Engineer (DLSE) will review the reasons as to their appropriateness. The DLSE may determine that other alternatives or countermeasures should be considered.

If the design elements don't meet or exceed the values in the *Alternative Urban Design Guides* table, or for 3R work the *Urban 3R Guidelines* table, a design exception must be requested. The design exception must be justified through the design exception process.

DESIGN EXCEPTION PROCESS

Any request to consider a design exception should include what the exception is and why it is requested. An analysis of the crash history and a review of the economics, needs to be included. Also, any proposed mitigation that is in the design should be noted in the request. The steps involved in the development of the design exception request are outlined on the following pages.

Step 1 - List the Design Exception(s).

All design elements of the proposed project need to be compared to the *Alternative Urban Design Guides* table for new or complete reconstruction projects, and to the *Urban 3R Guidelines* table for 3R projects. Individual design values, considered to be lower than the values in these tables, will need to be listed as design exceptions.

Step 2 - Analyze the Crashes.

A printout listing the crashes that have occurred within the project termini can be obtained by using the Access-ALAS (Accident Location Analysis System) software. The Access-ALAS software is available from the Iowa DOT Office of Traffic and Safety at (515) 239-1557 or on the internet at http://www.dot.state.ia.us/crashanalysis/. The crash review should be for five (5) years. A three (3) year review is acceptable when the street has high traffic volumes (3,000+ vpd), a large number of crashes, or if a traffic operational change has taken place. The city may also supplement the Access-ALAS data with their own crash data.

Crashes should be reviewed with respect to the location, rate, severity, type, contributing circumstances, time period, and environmental conditions. Crashes with roadway or environmental contributing circumstances should receive special attention. But, crashes with driver or vehicle contributing circumstances should not be ignored. Even if an crash is the driver's fault (drunk, speeding, ran stop sign, etc.), a look at roadway changes (utility pole relocations, etc.) to lessen crash severity is desirable.

Obtaining copies of crash reports will provide additional information; especially reports with fatalities, major injuries, or numerous injuries would be useful. The reports could be reviewed with local law enforcement personnel to get their perspective. Locations with severe crashes, above average number of crashes, or above average crash rates should be field checked.

Step 3 - Prepare a Cost Estimate.

A cost estimate to bring the deficiency or deficiencies up to current *Urban Design Aids* values needs to be prepared. This estimate does not need to be precise. A complete redesign with exact quantities isn't needed. It can be based on the "average" conditions as in the average right of way needed, the average cost per block to move utility poles, etc. This estimate should be based on upgrading the deficiency to the current *Urban Design Aids* values, not to just the minimum level needed to develop this project.

Step 4 - Perform an Economic Analysis.

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. A simplistic Benefit/Cost (B/C) Ratio will be presented under this step. This B/C Ratio is the ratio of expected benefits accrued from an crash/severity reduction, to the cost (construction, right of way, engineering, etc.) of the improvement. Included in this report are two forms which may be utilized to determine this B/C Ratio. Figure #1 with million entering vehicles (MEV) should be utilized for the majority of urban projects. Figure #2 can be used when the termini are over one-half mile apart; the crash rates are determined per 100 million vehicle miles (HMVM).

The information required to fill out the forms is as follows:

1. **CRASH DATA** The crash data on the ALAS printout should be transferred to the appropriate blanks on the form. The number of fatalities or injuries may not be the same number as these types of crashes (two personal injury crashes could involve five injuries). The actual property damage of all crashes should be totaled and entered in the appropriate blank. The value of $2,500 per crash, if no property damage is recorded, should be used. All crashes within the project termini or at the spot location should be initially included.

2. **IMPROVEMENT BEING CONSIDERED** The improvement described and the cost estimate should only be for the work for which the B/C Ratio is being determined. In other words, the cost to bring the deficiency up to the design criteria under the *Urban Design Aids* table, not the total project costs.

3. **SERVICE LIFE AND CRASH/SEVERITY REDUCTION FACTORS** Tables are included listing estimated values for these items for both city streets (Table 1) and rural roadway sections within urban areas (Table 2). Unless otherwise noted, the crash/severity reduction percentage is based on all crashes.

   Crash/Severity reduction factors are usually provided for a single countermeasure. However, where multiple countermeasures are being proposed, the reduction factor will be a combination of the individual factors. Since it is not feasible to reduce crashes by more than 100 percent, the following formula is used. It develops an overall crash/severity reduction factor for multiple improvements at a location or along a route.

$$AR_M = AR_1 + (1-AR_1)\,AR_2 + (1-AR_1)(1-AR_2)\,AR_3 + \ldots\ldots + (1-AR_1)(1-AR_{i-1})\,AR_i$$

where: AR_M = overall crash/severity reduction factor for multiple improvements.

AR_i = crash/severity reduction factor for specific improvement or countermeasure.

i = number of improvements.

Example:

An example of the use of the multiple improvement formula is shown for three improvements at a single location with individual reduction factors of :

$$AR_1 = 0.45;\ AR_2 = 0.30;\ \text{and } AR_3 = 0.15;$$

The overall crash/severity reduction factor is:

$$\begin{aligned} AR_M &= AR_1 + (1-AR_1)\,AR_2 + (1-AR_1)\,(1-AR_2)\,AR_3 \\ &= 0.450 + (1-0.45)(0.30) + (1-0.45)(1-0.30)(0.15) \\ &= 0.450 + 0.165 + 0.058 \\ &= 0.673 = 0.67 \end{aligned}$$

Most studies indicate that a B/C Ratio over 1.0 is considered beneficial and under 1.0 is not. However, when estimated values are being utilized, we consider an improvement with a B/C Ratio over 1.20 probably cost effective. Under 0.80, it is probably not cost-effective to do the improvement. A more in-depth review is in order for ratios from 0.80 to 1.20, inclusive. This review should include the following items:

1. The crash rate determined in the forms should be compared to similar facilities within the city or around the state.

2. The type of crashes should be reviewed against the type of improvement. Will the improvement being considered affect the type of or majority of crashes which occurred within the project limits?

3. The severity of the crashes should be reviewed with respect to location. If most of the crashes along the route were 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. The cost of the improvement being considered should be compared with the project cost without the improvement. If the cost to upgrade a deficiency is minor compared to the total project cost, then it may be wise to include the additional improvement. If the cost to upgrade would be a major expense such as doubling the cost of the project, it may be desirable to program the additional improvement at some future time.

5. The environmental or social effects of the improvement should always be considered. Relocation of families, adverse effects on wetlands or parks, and disturbance of historical or archaeological areas are just a few examples.

6. Other alternatives that could result in a similar benefit should also be investigated.

If the B/C Ratio is over 1.20, then a design exception may not be granted unless there are extenuating circumstances. One example of an extenuating circumstance may be that the severe crashes occurred at a certain location(s). The city officials propose an improvement(s) at this location(s) and without these crashes, the B/C Ratio is below 0.80. Another circumstance may be that the work will be accomplished the following year.

Step 5 - Provide Reason(s) or Justification(s) and Mitigation(s).

The cover letter requesting the exception should include the City's reason(s) or justification(s) for the design exception(s). In many cases some form of mitigation can be accomplished to lessen any adverse impacts that may result from the lower design criteria. The mitigation should also be outlined in the cover letter. Some examples of reasons and mitigations are as follows:

Example #1. - Although the maximum gradient is two percent more than the value in the Design Guides, it isn't possible to flatten the grade without disturbing the historical church.

We propose installing Hill signs (MUTCD #W7-1) to alert the trucks going to the industrial park. Also, the church driveway will be relocated to obtain the maximum sight distance.

Example #2. - The location of the railroad underpass and homes makes it impractical to reconstruct the horizontal curve. Since the most severe crash at the curve involved a utility pole, we plan to relocate the pole to the inside of the curve.

It is important for the city officials to list their reasons or justifications and any mitigation they may propose. These should be included in the cover letter even if there is a favorable B/C Ratio. The B/C Ratio is a tool in deciding whether an improvement is economically feasible. It should not be the city's only basis for asking for a design exception.

SUMMARY:

Any request to consider a design exception should include the following:

1. State the exception(s).
2. Analyze the crash history.
3. Determine the B/C Ratio.
4. State the City's reason(s) or justification(s).
5. State the City's proposed mitigation(s).
6. Submit all documentation (ALAS printout, B/C determination form and cover letter.

The request should be sent to the appropriate DLSE who will review the design exception request. The DLSE will approve or disapprove the request and notify the City. Refer to *Chart 4 – Design Exception Process*, located in the Flow Charts sections, for more information on the design exception process.

Figure #1
BENEFIT/COST DETERMINATION CITY _____
(City Street)

Project No._____ Date_____

Location_____ Prepared by_____

Length_____ miles Current ADT _____

CRASH DATA: From _____ to _____, Total # _____years
(date) (date)

Fatal Crashes _____ # Fatalities _____ x $1,000,000 = $_____

Injury Crashes _____ # Major Injuries _____ x $150,000 = $_____

Minor Injuries _____ x $ 10,000 = $_____

Possible Injuries _____ x $ 2,500 = $_____

PDO Crashes _____ Actual Prop. Dam. (Total) = $_____
(Use $2,500/crash if none given)

(1) Total # Crashes _____ **(2)** Total Loss = $ _____

(3) Cost/Crash = $\frac{\textbf{(2)}}{\textbf{(1)}}$ = Total Loss / Total # Crashes = $ _____/crash

(4) Crash Rate = $\frac{\text{Total \# Crashes x 1,000,000}}{\text{ADT x years x 365}}$ = _____ Crashes / MEV

DESIGN EXCEPTION BEING CONSIDERED:
Description of Improvement:
(not project description)

(5) Estimated Cost Imp. $_____ (Thousand)

(5A) Estimated Service Life (E.S.L.) ____years

(5B) Estimated Overall Crash/Severity Reduction Factor _____ percent
See #3 Page 4

B/C ANALYSIS:

(6) Estimated Traffic Volume = $\text{ADT x } \frac{1 + (1.02)^{\textbf{(5A)}}}{2}$ x **(5A)** x .000365 = _____ MEV

(7) Total Crash Loss = **(3)** x **(4)** x **(6)** =
Cost/Crash x Crash Rate x Est. Traf. Vol. = _____ (thousand)

(8) Total Crash Benefit = **(7)** x **(5B)** =
Total Crash Loss x Est. % Crash Reduction = _____ (thousand)

Benefit/Cost Ratio = $\frac{\textbf{(8)}}{\textbf{(5)}}$ = $\frac{\text{Tot. Crash Benefit}}{\text{Est. Cost Imp.}}$ = _____

Figure #2
BENEFIT/COST DETERMINATION CITY _____
(Over 0.5 mile in length)

Project No._____ Date_____

Location_____ Prepared by_____

Length(miles)_____ Current ADT_____

CRASH DATA: From _____ to _____, Total # _____years
(date) (date)

Fatal Crashes _____ # Fatalities _____ x $1,000,000 = $_____

Injury Crashes _____ # Major Injuries _____ x $150,000 = $_____

Minor Injuries _____ x $ 10,000 = $_____

Possible Injuries _____ x $ 2,500 = $_____

PDO Crashes _____ Actual Prop. Dam. (Total) = $_____
(Use $2,500/crash if none given)

(1) Total # Crashes _____ **(2)** Total Loss = $ _____

(3) Cost/Crash = $\frac{\textbf{(2)}}{\textbf{(1)}}$ = Total Loss/Total # Crashes = $ _____/crash

(4) Crash Rate = $\frac{\text{Total \# Crashes x 100,000,000}}{\text{ADT x Length x years x 365}}$ = _____ Crash/HMVM

DESIGN EXCEPTION BEING CONSIDERED:
Description of Improvement:
(not project description)

(5) Estimated Cost Imp. $_____ (Thousand)

(5A) Estimated Service Life (E.S.L.) ____years

(5B) Estimated Overall Crash/Severity Reduction Factor _____ percent
See #3 page 4

B/C ANALYSIS:

(6) Estimated Traffic Volume =

$$\text{ADT} \times \frac{1 + (1.02)^{\textbf{(5A)}}}{2} \times \textbf{(5A)} \times \text{Length} \times 0.00000365 = _____ \text{ HMVM}$$

(7) Total Crash Loss = **(3)** x **(4)** x **(6)** =
Cost/Crash x Crash Rate x Est. Traf. Vol. = _____ (thousand)

(8) Total Crash Benefit = **(7)** x **(5B)** =
Tot. Crash Loss x Est. % Crash Reduction = _____ (thousand)

Benefit/Cost Ratio = $\frac{\textbf{(8)}}{\textbf{(5)}}$ = $\frac{\text{Tot. Crash Benefit}}{\text{Est. Cost Imp.}}$ = _____

Table 1
IMPROVEMENTS FOR
CITY STREETS

	Estimated Service Life (Years)	Estimated Crash/ Severity Reduction Factor (%)
Intersections:		
Channelize /Add Turning Lanes	15	20
Improve Sight Distance	15	30
Upgrade Signs/Markings	6/2	30
New Signs/Markings	6/2	50
Illuminate	15	25
Reconstruct	20	40
Increase Turning Radii	15	15
Signalization new/upgrade	15/10	20
Improve Signal Timing/Phasing	5	10
Curves:		
Vertical Realignment	20	30
Horizontal Realignment	20	20
Horizontal/Vertical Realignment	20	50
Structures:		
Widen (lengthen culverts)	20	40
Guardrail (speed limit > 35mph)	15	20
Impact Attenuator (speed > 35mph)	15	15
Replace	50	40
Eliminate	50	75
Upgrade Bridge Rail (speed > 35mph)	15	10

Table 1
(continued)
IMPROVEMENTS FOR
CITY STREETS

	Estimated Service Life (Years)	Estimated Crash/ Severity Reduction Factor (%)
Railroad Crossing: (1)		
Signalize (without gates)	10	65
Signalize (with gates)	10	75
RR Pavement Markings	2	10
Replace with Grade Separation	50	40
Other:		
New Median Barrier	20	15
Delineate	6	10
Flatten Foreslopes	20	25
Relocate Utility Poles: (2)		
4' offset to 7'	10	42
4' offset to 10'	10	60
4' offset to 15'	10	73
7' offset to 10'	10	31
7' offset to 15'	10	54
10' offset to 15'	10	33

Notes:
(1) Train crashes only
(2) Utility pole crashes only

Table 2
IMPROVEMENTS FOR
RURAL ROADWAY SECTIONS
WITHIN URBAN AREAS

	Estimated Service Life (Years)	Estimated Crash/ Severity Reduction Factor (%)
Add Lane(s)	20	05
Widen Pavement	20	20
Widen Shoulder	20	10
Widen Pavement/Shoulder	20	30
Flatten Foreslopes	20	15
Widen Shoulder/Flatten Foreslopes	20	25
Friction Improvement		
Overlay	10	25
P. C. Grooving	10	10
Signing	6	05
Edgeline Markings	2	05
Horizontal Realignment	20	20
Vertical Realignment	20	30
Horizontal/Vertical Realignment/ Correct Superelevation	20	50
Roadway Lighting	15	25
Relocate Driveways	20	10
Flatten Entrance Slopes	20	05
Right of Way	100	--

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties	Date: March 26, 2008
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 only with Farm-to-Market or local funds. 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 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 plates, 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 American Association of State Highway and Transportation Officials (AASHTO) publications: *A Policy on Geometric Design of Highways and Streets* (2004), commonly referred to as the "Green Book", and the *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤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. 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 lower range of 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**			
Design Volume (ADT)	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)	1205	760	965	760	965	500	965	500	760	465
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 HS-20.

(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 H-15.
d. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved. For more information, refer to I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement.

(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 "Guides" are a composite of the recommendations from Chapter 6 of the AASHTO Green Book (2004). 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 is approved by the Iowa DOT Administering Office, as per I.M. 3.218, Design Exception Process.

Design Elements	**All Collector Roads**							
Design Volume (ADT)	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)	1205	760	760	465	760	465	465	250
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 HS-20

(6) a. For bridges less than 100 feet in length. Bridges over 100 feet will be analyzed individually.
b. Design Loading should be H-15.
c. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved. For more information, refer to I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement.

(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**									
Design Volume (ADT)	Over 1500		1500 – 400		400 – 250		250 – 50		Under 50	
Terrain (1)	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling	Level	Rolling
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)	965	760	965	500	760	500	760	465	465	350
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)	30	30	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. For Design Volumes over 2000 ADT, use approach roadway width.
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 1500 ADT or greater).
c. Bridges should have a design loading of HS-20.

(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 H-15. H-10 acceptable under 50 ADT.
d. Existing Bridge Roadway Width should be greater than or equal to the Traveled Way width, unless a design exception has been approved. For more information, refer to I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement.

(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 "Guides" are a composite of the AASHTO recommendations from Chapter 5 of the Green Book (2004) 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 is approved by the Iowa DOT Administering Office, as per I.M. 3.218, Design Exception Process.

Design Elements	**All Local Roads**									
Design Volume (ADT)	Over 2000		2000 – 1500		1500 – 400		Under 400		Under 400 Agricultural Access (9)	
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)	760	465	760	465	760	465	465	250	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 HS-20.

(6) a. For bridges less than 100 feet in length. Bridges over 100 feet will be analyzed individually.
b. Design loading should be H-15. H-10 acceptable under 50 ADT.
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. For more information, refer to I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement.

(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.

Form 740001WD
4-96

Iowa Department of Transportation

INSTRUCTIONAL MEMORANDUMS
To County Engineers

To	Date
County Engineers	November 2001
From	**IM No.**
Office of Local Systems	3.213
Subject	
Traffic Barriers (Guardrail and Bridge Rail)	

The purpose of this I.M. is to provide guidelines for determining the need for traffic barriers at roadway bridges and culverts. A traffic barrier is a device used to shield a roadside obstacle that is located on the right-of-way within an established minimum width clear zone (see I.M. 3.215 for clear zone instruction).

Roadside obstacles are classified as non-traversable objects (such as large culverts) and as fixed objects (such as unprotected ends of bridge rails). These roadside obstacles should first be reviewed for possible removal or relocation outside the Clear Zone. If this is not practical, then a traffic barrier may be necessary. A traffic barrier itself poses some risk to an errant motorist and should be installed only if it is clear that the barrier reduces the severity of potential crashes.

GUARDRAIL (Approach Guardrail):

In general, guardrail should be installed at:

1. All four bridge corners on newly constructed bridges on the Farm-to-Market system, except bridges located within an established speed zone of 35 mph or less.

2. On the approach bridge corners (right side) on new federally funded bridges constructed on the area service system, except bridges within a 35 mph or less speed zone. Consideration should be given to shielding the opposite corner if it is located on the outside edge of a curve. The FHWA will participate in guardrail at all four corners if desired by the county.

3. All four bridge corners on existing bridges within the termini of a 3R project on the Farm-to-Market System. Existing w-beam installations that are flared and anchored at both ends may be used as constructed without upgrading to current standards.

4. Culverts with spans greater than six feet (circular pipe culverts greater than 72" in diameter), if it is impractical to extend beyond the clear zone and grates are not utilized.

Design exceptions (see I.M. 3.218 for design exception instructions) to not utilize guardrail at bridges or culverts will be considered if the following conditions exist:

1. Current ADT at structure is less than 200 vehicles per day.

2. Structure width is 24' or greater.

3. Structure is on tangent alignment.

4. Benefit/cost Ratio is less than 0.80.

Other obstructions, within the right-of-way and clear zone, should be reviewed for removal, relocation, installation of a traffic barrier or the "do nothing" option based on a cost-effectiveness approach.

BRIDGE RAILS (Barrier Rail):

Bridge rails on newly constructed bridges should be constructed to the latest available standards (includes SL-1 type rail on structures with less than 1000 vpd). On bridge rehabilitation projects involving federal-aid, any substandard bridge rail should be reviewed for retrofitting.

Bridge rails which are both structurally deficient and functionally obsolete should be reviewed for upgrading as part of the 3R projects. Included with this I.M. is a "Bridge Rail Rating System" developed to assist in determining if a bridge rail should be upgraded with the 3R project and to what extent it should be upgraded. Any bridge which is programmed in the near future for replacement or rehabilitation may not require upgrading as part of the 3R project.

The rating system assigns points to five factors (Crashes, ADT, Width, Length and Type of bridge rail); the sum of these factors will indicate the degree or amount of upgrading required, if any. The crash factor involves crashes (property damage only, personal injury and fatality) in the last five years (Access ALAS). The types of bridge rail are from various county bridge standards. If the existing rail is not an old standard, then determine which type it is similar to and assign the corresponding points.

Consideration should be given to extending the guardrail through the bridge on short bridges or bridges which have no end posts. This may be less costly than attaching the guardrail as per standard RE-27B or constructing an end post.

BRIDGE RAIL RATING SYSTEM

5 FACTOR SYSTEM

POINTS	**0**	**5**	**10**	**15**	**20**
Crashes (in the last 5 years)	None	1 PDO	1 PI	1 F or 2 PDO's or 1 PI and 1 PDO	2 or more F's/PI's or 3 or more PDO's
ADT (current year)	< 200	200 - 299	300 - 399	400 - 750	> 750
Bridge Width (feet)	≥ 30	28	24	22	≤ 20
Bridge Length (feet)	< 50	50 - 99	100 - 149	150 - 200	> 200
Bridge Rail (type)	Aluminum Rail (1967 Standard)	Steel Box Rail (1964 Standard)	Formed Steel Beam Rail (1951 and 1957 Standards)	Steel Rail (1941 Standard) Concrete Rail (1928 Standard)	Angle Handrail (1928 Standard)

Abbreviations:
PDO = Property Damage Only crash
PI = Personal Injury crash
F = Fatality crash

UPGRADING NEEDED

under 25 Points	No Upgrading at this time
25 - 50 Points	Delineation according to Standard RE-48A
51 - 75 Points	Block out with Thrie Beam to curb edge (If existing approach guardrail is W-Beam, W-Beam may be used)
Over 75 Points	Retrofit

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: March 26, 2008
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.

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.

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.

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 must have prior approval as per I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement. 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. 3.220. 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: If the project is located on a rural roadway with an above average fatal and major injury crash rate or crash density, as indicated on the High Risk Rural Roads (HRRR) Eligibility Corridors map, a clear zone review shall be conducted as follows. If the project is not located on an HRRR eligible road, simply note this and the following review is not required.

   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.

   Note: The cost of safety improvements resulting from this review are eligible for funding under the HRRR program. For more information, refer to the High Risk Rural Roads Program web page.

   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 is approved by the Iowa DOT Administering Office, as per I.M. 3.218, Design Exception Process.

Design Elements	**Resurfacing**			**Restoration**			**Rehabilitation**		
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. For more information, refer to I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement.

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. For more information, refer to I.M. 3.220, Design Exception Information for Bridges Narrower than Approach Pavement.
b. Design loading should be at least HS-15.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: March 26, 2008
From:	Office of Local Systems	I.M. No. 3.215
Subject:	Clear Zone Guidelines	

Contents: This Instructional Memorandum (I.M.) provides guidelines for providing a clear zone on Local Public Agency (LPA) road or bridge improvement projects. It includes definitions of key terms, application of the clear zone concept, and a summary of the American Association of State and Highway Transportation Officials (AASHTO) recommendations. 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 improvement projects.
2. The LPA, at its option, may use these guidelines for non-Federal-aid projects; however, for such projects, the Iowa DOT will not provide any review of the proposed design values, unless specifically requested by the LPA.
3. These guidelines are not applicable for projects on Primary or Interstate highways. For such projects, refer to the Iowa DOT Road Design Manual.

Definitions

Clear Zone – The total roadside border area, starting at the edge of the traveled way, available for safe recovery of errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and / or a clear run-out area.

Recommended Clear Zone Distance – The total distance, measured from the edge of the traveled way, that a typical vehicle will require to stop or regain control after leaving the traveled way.

Recoverable Slope – A foreslope on which a motorist may, to a greater or lesser extent, retain or regain control of a vehicle by slowing or stopping. Slopes 4:1 and flatter are generally considered recoverable. Recoverable slopes may count toward the recommended clear zone distance.

Non-recoverable Slope – A foreslope which is considered traversable but on which an errant vehicle will continue to the bottom. Foreslopes from 3:1 up to 4:1 may be considered traversable but not recoverable. Non-recoverable slopes may occur within the clear zone, but do not count toward the recommended clear zone distance.

Clear Run-out Area – An area at the toe of a non-recoverable slope which is available for safe recovery by errant vehicles. The clear run-out area may count toward the recommended clear zone distance.

Critical Slope – A foreslope which may be too steep to be safely traversed by errant vehicles. Slopes steeper than 3:1 are generally considered to be in this category. Critical slopes may neither be considered part of the clear zone nor counted toward the recommended clear zone distance. Depending on the speed and angle of encroachment, vehicles encountering a critical slope could overturn. Critical slopes occurring within the recommended clear zone distance may warrant shielding with a barrier.

Obstacle – A critical slope or any fixed object which is not safely traversable or may pose a hazard to errant vehicles.

Application of the Clear Zone Concept

The clear zone concept has been developed based on several decades of highway design experience and research. The purpose of providing a clear zone is to reduce the likelihood and severity of crashes that may result when a vehicle leaves the traveled way. This is often referred to as the “forgiving roadside concept”.

Roadside obstacles should be reviewed during the design of any highway or bridge project. Where practical, obstacles should not be located within the recommended clear zone distance. Any obstacles that are located within the recommended clear zone distance should be reviewed, in order of preference, according to the following design options:

1. Remove the obstacle.
2. Redesign the obstacle so that it can be safely traversed.
3. Relocate the obstacle to a point where it is less likely to be struck.
4. Reduce the impact severity by using an appropriate breakaway device.
5. Shield the obstacle with a longitudinal traffic barrier designed for redirection or use a crash cushion.
6. Delineate the obstacle if the above alternatives are not appropriate.

New Construction or Complete Reconstruction Projects

The clear zone concept is most applicable to new construction or complete reconstruction projects. These projects often involve significant changes to horizontal or vertical alignment, and therefore offer the greatest opportunity to address roadside safety in an economical manner.

3R Projects

Clear zone should also be reviewed for Resurfacing, Restoration, or Rehabilitation (3R) projects. However, because the scope of a 3R project is generally focused on the roadway itself, and because funds are usually limited, the clear zone review should be focused on those areas within the project that have identifiable safety problems associated with clear zone widths. For additional guidance, refer to I.M. 3.214, 3R Guidelines.

Curbed Roadways

Curbs are often provided on urban roadways. Curbs may serve many functions, but research has demonstrated they have limited ability to redirect vehicles that leave the roadway, especially at higher speeds. Therefore, consideration should be given to providing a clear zone for curbed urban roadways as well. However, in contrast to rural roadsides, urban roadsides are typically much more restricted by the presence of existing buildings, utility poles or appurtenances, walkways, trees, etc. These constraints often make it impractical to provide the recommended clear zone distance throughout the entire length of the project. Nevertheless, designers should review those locations that have identifiable safety problems associated with clear zone widths, and where it is practical, provide the recommended clear zone distance behind the curb.

Apart from clear zone considerations, designers should in all cases provide a minimum object setback (sometimes referred to as an operational clearance) from the face of curb to any obstructions. A minimum object setback of 1.5 feet from the face of curb is recommended by the AASHTO Roadside Design Guide (RDG) and AASHTO's Policy on Geometric Design of Highways and Streets, commonly referred to as the "Green Book". *The object setback is not a clear zone*. The clear zone is intended to accommodate vehicles that *leave the roadway*. In contrast, the purpose of the object setback is to provide a roadside environment that is not likely to adversely affect the speed or position or vehicles *on the roadway*. It also serves other practical purposes, such as providing adequate room for snow storage or opening car doors on roadways that allow parking.

Traffic barriers on roadways with curbs may be appropriate in some cases. However, care should be exercised when using curbs in combination with roadside barriers. For more information, refer to the RDG, Section 3.4.1.

AASHTO Recommendations

The recommended clear zone distance is a function of several variables: traffic speed, traffic volume, horizontal curvature, and roadside geometry. The RDG provides several tables and charts that may be used to obtain the recommended clear zone distance based on these variables. It is important to understand the recommended clear zone distances are neither absolute nor precise. In some instances, it may be acceptable to leave an obstacle within the clear zone distance; in other cases, obstacles outside of the recommended clear zone distance may warrant removal or shielding. As with all design guidelines, use of good engineering judgment is critical.

For Federal-aid new construction or complete reconstruction projects, if the following recommended clear zone distances will not be provided, a design exception shall be requested, as per I.M. 3.218, Design Exception Process.

Very Low Volume Local Roads (ADT ≤ 400 vpd)

The AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400 vpd) indicates a clear zone of 6 feet or more in width may be considered when it can be provided at low cost and with minimum social or environmental impacts. Where constraints of cost, terrain, or potential social or environmental impacts make provision of a 6 foot clear zone impractical; clear zones less than 6 feet, including designs with 0 feet may be used. These guidelines are applicable to both new construction, complete reconstruction, and 3R projects. These guidelines may also be used for collectors with less than or equal to 400 ADT, provided they carry mostly local traffic.

Other Roads (ADT > 400 vpd)

For roads other than very low volume local roads, the recommended clear zone should be provided in accordance with the following tables and figures. These tables and figures have been developed based on the guidance provided in the 2006 Edition of the RDG.

Table 1 – Recommended Clear Zone Distances, Recoverable Slopes
In feet from the edge of traveled way
(RDG, Table 3.1)

Design Speed (mph)	**Design Traffic** (ADT)	**Foreslopes**		**Backslopes**		
		6:1 or flatter	5:1 to 4:1	3:1	4:1 to 5:1	6:1 or flatter
≤ 40	Under 750	7-10	7-10	7-10	7-10	7-10
	750-1500	10-12	12-14	10-12	10-12	10-12
	1500-6000	12-14	14-16	12-14	12-14	12-14
	Over 6000	14-16	16-18	14-16	14-16	14-16
45-50	Under 750	10-12	12-14	8-10	8-10	10-12
	750-1500	14-16	16-20	10-12	12-14	14-16
	1500-6000	16-18	20-26	12-14	14-16	16-18
	Over 6000	20-22	24-28	14-16	18-20	20-22
55	Under 750	12-14	14-18	8-10	10-12	10-12
	750-1500	16-18	20-24	10-12	14-16	16-18
	1500-6000	20-22	24-30	14-16	16-18	20-22
	Over 6000	22-24	26-32*	16-18	20-22	22-24
60	Under 750	16-18	20-24	10-12	12-14	14-16
	750-1500	20-24	26-32*	12-14	16-18	20-22
	1500-6000	26-30	32-40*	14-18	18-22	24-26
	Over 6000	30-32*	36-44*	20-22	24-26	26-28
65-70	Under 750	18-20	20-26	10-12	14-16	14-16
	750-1500	24-26	28-36*	12-16	18-20	20-22
	1500-6000	28-32*	34-42*	16-20	22-24	26-28
	Over 6000	30-34*	38-46*	22-24	26-30	28-30

* Where a site specific investigation indicates a high probability of continuing crashes, or such occurrences are indicated by crash history, the designer may provide clear zone distances greater than 30 feet as indicated. Clear zones may be limited to 30 feet for practicality and to provide a consistent roadway template if previous experience with similar projects or designs indicates satisfactory performance.

The recommended clear zone distance obtained from Table 1 may need to be adjusted on the outside of a horizontal curve at selected locations. This adjustment should be considered when the crash history suggests the need for additional clear zone distance or when all of the following criteria are met:

1. The radius of the curve is less than 2860 feet.
2. The curve occurs on a high-speed roadway (design speed of 55 mph or greater).
3. The curve occurs on a normally tangent alignment (one where the curve is preceded by a tangent of more than one mile in length).

If an adjustment of the clear zone distance is determined to be appropriate, calculate the adjusted recommended clear zone distance by multiplying the recommended clear zone distance obtained from Table 1 by the appropriate Horizontal Curve Adjustment factor, as obtained from Table 2 below:

Table 2 – Horizontal Curve Adjustment Factors
(RDG, Table 3.2)

Radius (ft)	**Design Speed** (mph)						
	40	45	50	55	60	65	70
2860	1.1	1.1	1.1	1.2	1.2	1.2	1.3
2290	1.1	1.1	1.2	1.2	1.2	1.3	1.3
1910	1.1	1.2	1.2	1.2	1.3	1.3	1.4
1640	1.1	1.2	1.2	1.3	1.3	1.4	1.5
1430	1.2	1.2	1.3	1.3	1.4	1.4	--
1270	1.2	1.2	1.3	1.3	1.4	1.5	--
1150	1.2	1.2	1.3	1.4	1.5	--	--
950	1.2	1.3	1.4	1.5	1.5	--	--
820	1.3	1.3	1.4	1.5	--	--	--
720	1.3	1.4	1.5	--	--	--	--
640	1.3	1.4	1.5	--	--	--	--
570	1.4	1.5	--	--	--	--	--
380	1.5	--	--	--	--	--	--

Clear Zones and Non-recoverable Slopes

Vehicles that encroach upon a non-recoverable slope at high speeds are not likely to recover until they reach the toe of the non-recoverable slope. Therefore, if a non-recoverable slope occurs within the recommended clear zone distance, fixed objects should not be present on the non-recoverable slope or in the vicinity of the toe of the non-recoverable slope. Determination of the width of the clear run-out area at the toe of slope should take into consideration right of way availability, environmental concerns, economic factors, safety needs, and crash histories. Also, the distance between the edge of the travel lane and the beginning of the non-recoverable slope should influence the clear run-out area provided at the toe of the non-recoverable slope. While the application may be limited by several factors, the fill slope parameters which may enter into determining clear run-out area are illustrated in Figure 1 below.

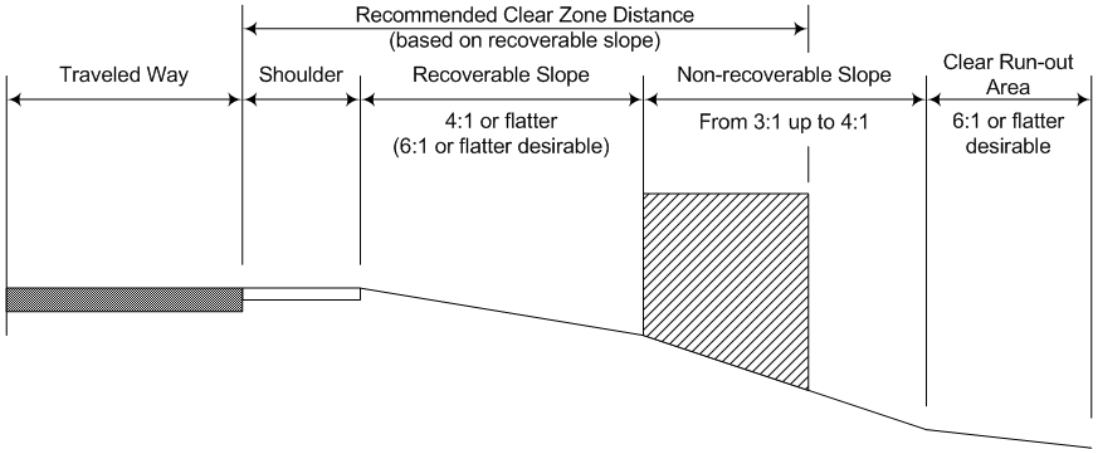


Figure 1 – Variables Affecting the Clear Run-out Area
(RDG, Figure 3.2)

As Figure 1 shows, when a non-recoverable foreslope is within the recommended clear zone distance, an additional clear run-out area should be provided at the toe of the non-recoverable foreslope. The width of the additional clear run-out area should be greater than or equal to the portion of the recommended clear zone distance that falls on the non-recoverable slope (see cross-hatched area in Figure 1 above).

For many rural roadways, no recoverable slope exists between the shoulder and the beginning of the non-recoverable slope. In such cases, the recommended clear run-out area distance can be determined as follows: Using Table 1 (and if appropriate, Table 2), determine the recommended clear zone distance based on a 6:1 or flatter foreslope. Deduct the shoulder width from this recommended clear zone distance to obtain the recommended clear run-out area distance. The results of this calculation for certain design speeds, traffic volumes, and common shoulder widths are shown in Table 3 below. Clear run-out distances for other shoulder widths may be calculated in a similar manner.

Table 3 – Clear Run-out Area Distance (6:1 or flatter)
In feet from the toe of a non-recoverable slope which begins at the edge of shoulder

Design Speed (mph)	**Design Traffic** (ADT)	**Shoulder Width** (ft)				
		2	4	6	8	10
≤ 40	Under 750	5-8	3-6	1-4	0-2	0
	750-1500	8-10	6-8	4-6	2-4	0-2
	1500-6000	10-12	8-10	6-8	4-6	2-4
	Over 6000	12-14	10-12	8-10	6-8	4-6
45-50	Under 750	8-10	6-8	4-6	2-4	0-2
	750-1500	12-14	10-12	8-10	6-8	4-6
	1500-6000	14-16	12-14	10-12	8-10	6-8
	Over 6000	18-20	16-18	14-16	12-14	10-12
55	Under 750	10-12	8-10	6-8	4-6	2-4
	750-1500	14-16	12-14	10-12	8-10	6-8
	1500-6000	18-20	16-18	14-16	12-14	10-12
	Over 6000	20-22	18-20	16-18	14-16	12-14
60	Under 750	14-16	12-14	10-12	8-10	6-8
	750-1500	18-22	16-20	14-18	12-16	10-14
	1500-6000	24-28	22-26	20-24	18-22	16-20
	Over 6000	28-30*	26-28*	24-26*	22-24	20-22
65-70	Under 750	16-18	14-16	12-14	10-12	8-10
	750-1500	22-24	20-22	18-20	16-18	14-16
	1500-6000	26-30*	24-28*	22-26*	20-24*	18-22*
	Over 6000	28-32*	26-30*	24-28*	22-26*	20-24*

* See note for Table 1.

Clear Zones and Critical Slopes

If a critical slope occurs within the recommended clear zone distance, as per Table 1, the crash history and site conditions should be reviewed to determine if a traffic barrier may be warranted. The RDG provides a generalized recommendation for barrier warrants, as shown in Figure 2 below. This figure is based on studies of relative severity of encroachments on embankments versus impacts with roadside barriers. However, it should be noted that Figure 2 does not account for the probability of encroachment upon the critical slope (i.e., traffic volume) or the cost-effectiveness of installing a barrier (i.e., the potential reduction in crash severity vs. the cost of providing a barrier).

Therefore, even if Figure 2 indicates a barrier may be warranted, if the critical slope is part of a uniform roadway cross section and the crash history of the roadway does not indicate a problem, installation of a traffic barrier may not be warranted. In summary, decisions regarding the use of a critical slope within the recommended clear zone distance should be based on the crash history, site conditions, and good engineering judgment.

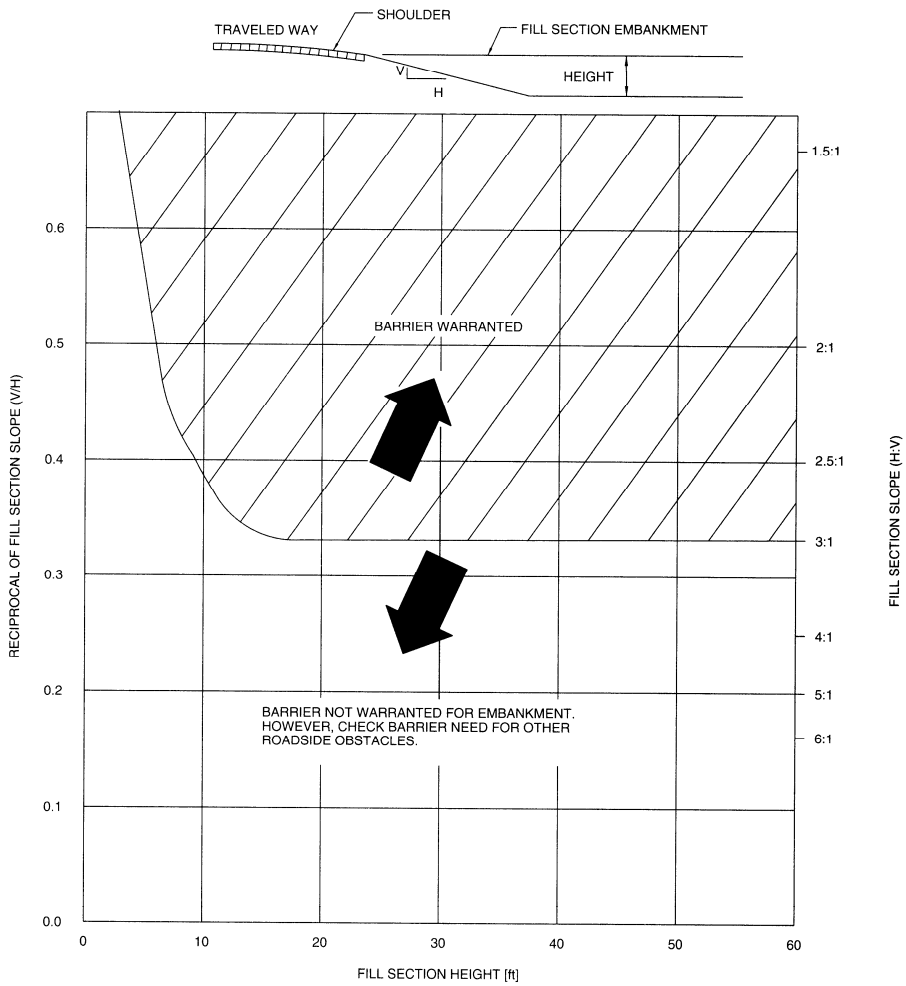
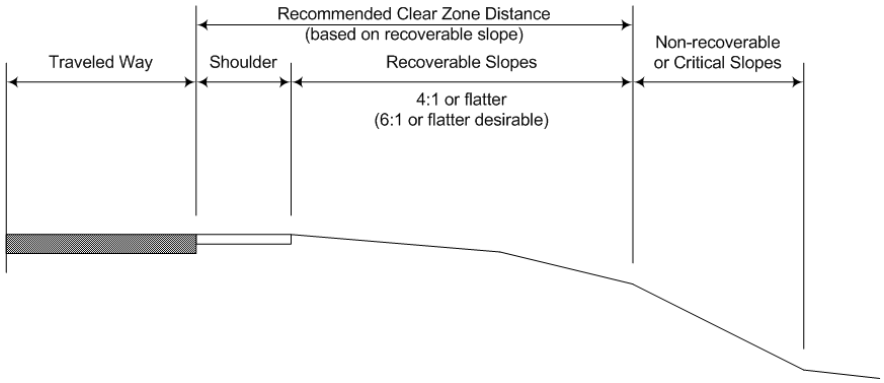


Figure 2 – Comparative Risk Warrants for Embankments
(RDG, Figure 5.1b)

Use of "Barn Roof" Designs

When right-of-way or environmental impacts make provision of the recommended clear zone difficult, consideration should be given to using a "barn roof" type of roadway section, as shown in Figure 3 below. This type of section uses a relatively flat foreslope, followed by a steeper foreslope which begins outside the recommended clear zone distance. Since the recommended clear zone distance is less for flatter foreslopes, it may be possible to provide the recommended clear zone distance with less right-of-way or environmental impacts than other roadway sections would require.

Figure 3 – Typical Barn Roof Section



Form 740001WD
4-96

Iowa Department of Transportation

INSTRUCTIONAL MEMORANDUMS
To County Engineers

To	Date
County Engineers	October 2001
From	**IM No.**
Office of Local Systems	3.216
Subject	
Economic Analysis (Benefit-to-Cost-Ratio)	

The purpose of this I.M. is to provide a mechanism 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, Benefit-to-Cost Ratio, for your consideration.

The Benefit/Cost Ratio is the ratio of the expected benefits, (accrued from a crash/severity reduction based on an improvement), to the costs of the improvement (construction, right of way, engineering, etc.). Included are two forms, which may be utilized to determine the Benefit/Cost Ratio for a particular improvement that is being considered. One form will obtain the Benefit-to-Cost Ratio as it relates to the project length (Rural Roadway Section). The other form is for spot locations, such as intersections, bridges, or curves within the project limits. The only difference in the forms is that the roadway section is based on 100 million vehicle miles (HMVM) of travel whereas the spot location is based on million entering vehicles (MEV).

The information required to fill out the forms is as follows:

1. CRASH DATA: This information can be obtained through Access ALAS Computer Software that is available through Iowa Department of Transportation (Iowa DOT) Office of Traffic and Safety. For most county roads, with no major improvements within the time frame, the data should go back five years. ALAS data should be requested for whole years (no partial years) only. The crash data on the Access ALAS printout should be transferred to the appropriate blanks on the form, 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. Use the value of $2,500 per crash, if no damage is recorded. All crashes within the project termini or at the spot location should be included, regardless of type. The crash severity reduction percentage is based on all crashes.

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

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. SERVICE LIFE AND CRASH/SEVERITY REDUCTION FACTORS: Tables are included listing estimated values for these items for both roadway sections and spot locations. Crash/Severity reduction factors are usually provided for a single countermeasure. However, where multiple countermeasures are being proposed, the crash/severity reduction factor will be a combination of the individual crash/severity reduction factors. Since it is not feasible to reduce crashes by more than 100 percent, the following formula is used to develop an overall crash/severity reduction factor for multiple improvements at a location or along a route.

$AR_M = AR_1 + (1-AR_1)\ AR_2 + (1-AR_1)(1-AR_2)\ AR3 + \ldots + (1-AR_1)(1-AR_{i-1})\ AR_i$ where:

AR_M = overall crash/severity reduction factor for multiple improvements.

AR_i = crash/severity reduction factor for specific improvement or countermeasure.

i = number of improvements.

<u>Example</u>

An example of the use of the multiple improvement formula is shown for three improvements at a single location with individual crash/severity reduction factors of:

$AR_1 = 0.45$
$AR_2 = 0.30$
$AR_3 = 0.15$

The overall crash/severity reduction factor is:
$AR_M = AR_1 + (1-AR_1)\ AR_2 + (1-AR_1)\ (1-AR_2)\ AR_3$

$= 0.450 + (1-0.45)(0.30) + (1-0.45)(1-0.30)(0.15)$
$= 0.450 + 0.165 + 0.058$
$= 0.673 = 0.67$

Most studies indicate that an improvement with a Benefit/Cost Ratio over 1.0 is considered beneficial and under 1.0 is not. However, when considering that estimated values are being utilized, a more in-depth review is in order for ratios from 0.80 to 1.20, inclusive. This review might include items listed on the Review Sheet (Page #4), in this I.M., as:

1. The crash rate determined in the forms should be reviewed against the statewide average for all secondary roads. The five year average rate per 100 million vehicle miles in 1995 - 1999 was 237.

2. 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.

3. 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. 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. 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. The Context-Sensitive Design process may be appropriate.

6. 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. 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 mitigate the situation.

These forms can be utilized as a tool in deciding whether an improvement is economically feasible. The completed Benefit/Cost Ratio sheet(s) should be attached, with copies of the ALAS printout, to the justification letter outlining the reasons for the county's request for any design exceptions. The Benefit/Cost Ratio should not be your only basis; other reasons that were considered in the decision-making process should be detailed in the county's justification letter. See I.M. 3.218.

BENEFIT/COST RATIO REVIEW SHEET

1. **B/C Ratio under 0.80:** Improvement probably not cost-effective at this time.

2. **B/C Ratio = 0.80 to 1.20:** Improvement may be cost effective, should also consider:

    1. Crash rate compared to statewide average.
    2. Type of crashes vs. type of improvement.
    3. Severity of Crashes.
    4. Cost of improvement vs. project cost without improvement.
    5. Environment and social effects of improvement.
    6. Other alternatives to the improvement (i.e. signing, pavement markings, etc.).

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

Note: The following B/C determination sheets are available in Microsoft Excel 2000® spreadsheet format. These spreadsheets are available from the Iowa DOT Office of Traffic and Safety (515-239-1557) and are also located on the Office of Local Systems web site at: http://www.dot.state.ia.us/local_systems/publications/publications.htm.

BENEFIT/COST DETERMINATION
(Rural Roadway Section)

COUNTY _____

Project No. _____ Date _____

Location _____ Prepared by _____

Length (miles) _____ Current ADT _____

CRASH DATA: From _____ to _____, Total # _____Years
(date) (date)

# Fatal Crashes	_____	# Fatalities	_____	x $1,000,000	= $_____
# Injury Crashes	_____	# Major Injuries	_____	x $150,000	= $_____
		# Minor Injuries	_____	x $10,000	= $_____
		# Possible Injuries	_____	x $2,500	= $_____
#PDO Crashes	_____			Actual Prop. Dam. (Total)	= $_____

(Use $2,500/Crash if no actual $ property loss is shown)

(1) Total # Crash _____ **(2)** Total Loss = $_____

(3) Cost/Crash = (2)/(1) =Total Loss/Total # Crash = $_____/crash

(4) Crash Rate $= \frac{\text{Total \# Crash x 100,000,000}}{\text{ADT x Length x years x 365}}$ = _____ Crash/HMVM

DESIGN EXCEPTION BEING CONSIDERED:
Description of Improvement:
(not project description)
(5) Estimated Cost Imp. $ _____ (Thousand)
(5A) Estimated Service Life (E.S.L.) _____ years
(5B) Estimated Overall Crash/Severity Reduction Factor _____ percent
(See #3, Page 2)

B/C ANALYSIS:

(6) Estimated Traffic Volume =
ADT x $\frac{1+(1.02)^{(5A)}}{2}$ x 5A x Length x 0.00000365 = _____HMVM

(7) Total Crash Loss = (3) x (4) x (6)
Cost/ Crash x Crash Rate x Est. Traf. Vol. = _____ (Thousand)

(8) Total Crash Benefit = (7) x (5B) =
Tot. Crash Loss x Est. % Crash Reduction = _____ (Thousand)

Benefit/Cost Ratio = $\frac{(8)}{(5)}$ = $\frac{\text{Tot. Crash Benefit}}{\text{Est. Cost Imp.}}$ = _____

IMPROVEMENTS FOR RURAL ROADWAY SECTIONS

	Estimated Service Life (Years)	Estimated Crash/ Severity Reduction Factor (%)
Add Lane(s)	20	05
Widen Pavement	20	22
Widen Shoulder	20	08
Widen Pavement/Shoulder	20	28
Flatten Foreslopes	20	08
Widen Shoulder/Flatten Foreslopes	20	15
Friction Improvement:		
Overlay	10	27
P. C. Grooving	10	14
Signing	6	05
Edgeline Markings	2	04
Horizontal Realignment	20	25
Vertical Realignment	20	30
Horizontal/Vertical Realignment/ Correct Superelevation	20	45
Roadway Lighting	15	06
Relocate Driveways	20	05
Flatten Entrance Slopes	20	05
Right of Way	100	--

BENEFIT/COST DETERMINATION
(Spot Location)

COUNTY _____

Project No. _____ Date _____

Location _____ Prepared by _____

Length (miles) _____ Current ADT _____

CRASH DATA: From _____ to _____, Total # _____Years
(date) (date)

# Fatal Crashes	_____	# Fatalities	_____	x $1,000,000	= $_____
# Injury Crashes	_____	# Major Injuries	_____	x $150,000	= $_____
		# Minor Injuries	_____	x $10,000	= $_____
		# Possible Injuries	_____	x $2,500	= $_____
#PDO Crashes	_____			Actual Prop. Dam. (Total)	= $_____

(Use $2,500/Crash if no actual $ property loss is shown)

(1) Total # Crash _____ **(2)** Total Loss = $_____

(3) Cost/Crash = (2)/(1) =Total Loss/Total # Crash = $_____/crash

(4) Crash Rate = $\frac{\text{Total \# Crash x 1,000,000}}{\text{ADT x years x 365}}$ = _____Crash/MEV

DESIGN EXCEPTION BEING CONSIDERED:
Description of Improvement:
(not project description)
(5) Estimated Cost Imp. $_____(Thousand)
(5A) Estimated Service Life (E.S.L.) _____ years
(5B) Estimated Overall Crash/Severity Reduction Factor _____ percent
(See #3, page 2)

B/C ANALYSIS:

(6) Estimated Traffic = ADT x $\frac{1+(1.02)^{(5A)}}{2}$ x (5A) x 0.000365 = _____ MEV
Volume

(7) Total Crash Loss = (3) x (4) x (6)
Cost/ Crash x Crash Rate x Est. Traf. Vol. = _____ (Thousand)

(8) Total Crash Benefit = (7) x (5B) =
Tot. Crash Loss x Est. % Crash Reduction = _____ (Thousand)

Benefit/Cost Ratio = $\frac{(8)}{(5)}$ = $\frac{\text{Tot. Crash Benefit}}{\text{Est. Cost Imp.}}$ = _____

IMPROVEMENTS FOR SPOT LOCATIONS

	Estimated Service Life (Years)	Estimated Crash/ Severity Reduction Factor (%)
Intersections:		
Channelize/Add Turning Lanes	15	25
Improve Sight Distance	15	35
Upgrade Signs/Markings	6/2	36
Illuminate (not destination lighting)	15	20
Add Accel/Decel lane	20	25
Rumble Strips (Applies only to crashes involving stop condition)	5 A.C. 10 P.C.	44 44
Reconstruct Approach Angle	20	35
Add Beacons	10	25
Curves:		
Vertical Realignment	20	57
Horizontal Realignment	20	38
Horizontal/Vertical Realignment/ Correct Superelevation	20	73
Pavement Markings/Delineate	2/6	15
Bridges:		
Widen	20	48
Guardrail	15	24
Impact Attenuator	10	35
Replace	50	50
Eliminate	50	75

IMPROVEMENTS FOR
SPOT LOCATIONS
(continued)

	Estimated Service Life (Years)	Estimated Crash/ Severity Reduction Factor (%)
Culverts:		
Lengthen	20	48
Guardrail or Grate	15	24
Remove Headwall & Delineate	20	35
Railroad Crossing:		
Signalize	10	50
Upgrade Warning Devices	10	27
Illuminate	15	62
Replace with Grade Separation	50	39
Eliminate	50	75
High Fills:		
Guardrail	10	16
Delineate	6	10
Flatten Foreslopes	20	25

Form 740001WD
4-96

Iowa Department of Transportation

INSTRUCTIONAL MEMORANDUMS
To County Engineers

To	Date
County Engineers	December 2002
From	**IM No.**
Office of Local Systems	3.218
Subject	
Design Exception Process	

The purpose of this I.M. is to define the design exception process for use by the counties. After considering various factors for the type of roadway improvement, the proposed improvement may not meet one or more of the current design guides. If the County determines that a design exception is necessary, the County must submit proper justification on federally funded projects for approval to the Iowa Department of Transportation (Iowa DOT).

Step 1. DETERMINE TYPE OF IMPROVEMENT

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

A. **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.

B. **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.

C. **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.

D. **FUNCTIONAL CLASSIFICATION** Drivers associate and expect certain geometric features and levels of design with each functional class.

E. **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.

F. **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.

G. **CRASH RECORDS** Evaluation of crash records may reveal problems requiring special attention and is an integral part of the project development process.

H. **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.

I. **POTENTIAL 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.

J. **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 PROPOSED IMPROVEMENT MEETS CURRENT DESIGN GUIDES.

If the proposed improvement does not meet the design guides and the County wishes a design exception, continue to STEP 3.

STEP 3. ANALYZE THE CRASH DATA

Crash data can be analyzed using the Access-ALAS (Accident Location and Analysis System) software, which is available from the Iowa DOT Office of Traffic and Safety (515) 239-1557. Access-ALAS is also available on the internet at http://www.dot.state.ia.us/crashanalysis/. The crash data for at least the past five years should be reviewed. Review the crashes using the Access-ALAS software 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 drivers fault (drunk, speeding, ran stop sign, etc.) you should look at possibly how the roadway environment (i.e. 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 the County sheriff to get his/her 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 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. It is suggested that this estimate be based on upgrading the deficiency to the current design aids; not to just the minimum to get by with this project.

STEP 5. CALCULATE BENEFIT TO COST RATIO ACCORDING TO I.M. 3.216

1. If the B/C is less than 0.80, then the B/C worksheet, ALAS printout, a letter stating the County's reasons for the exception including a statement of whether there are any high crash locations and the County's proposed mitigation is all that is needed.

2. If the B/C is from 0.80 to 1.20, then the six additional items listed on the review sheet 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 County 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 County 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 COVER LETTER TO THE IOWA DOT REQUESTING THE EXCEPTION

Include the County's justification (reasons) and any proposed mitigation. The County may want to address some of the following items, where appropriate:

1. **Justification Portion:**

   A. **Pavement Condition**
   Example--The County 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.

   B. **Physical Characteristics (extent of deficiency)**
   Example--Although the foreslopes are 2:1, the ditch depths are less than 6' except for two locations. One of these locations will be guardrailed and the other is a short distance with no hazards located on the slope or in the ditch area.

   C. **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 County will conduct a speed study in this area.

   D. **Functional Classification**
   Example--This route carries, for the most part, local traffic between two communities and is not a through route in the county.

   E. **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.

   F. **Safety Enhancement (Seven Items in I.M. 3.214)**
   Example--The bridge has had guardrail installed and the bridge rail according to the factor system in I.M. 3.213 will be delineated. 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 guardrailed 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.

G. **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.

H. **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 do plan to reconstruct the curve at the time the bridge is replaced in five to ten years. Until then, curve sign with advisory speed plates and chevrons, will be installed along with the painting of edgelines.

I. **Potential Impact**
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" will be painted according to the MUTCD.

2. **Mitigation:** Examples of typical mitigation measures for various substandard design elements are shown below.

A. **Horizontal Curves**
- Curve signs or Turn signs
- Advisory speed plates
- Chevrons
- Edgelines

B. **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

C. **Shoulders**
- Edgelines

D. **Slopes**
- Edgelines
- Flatten slopes with ditch depths over 6' or a traffic barrier (w-beam or cable guardrail)
- Flatten driveway slopes

E. **Grades**
- Hill signs (W7-1), if needed, as determined by percent of grade and length

F. **Narrow Bridges**
- Guardrail
- Bridge rail upgrading
- Narrow bridge signs (W5-2)
- Delineation
- Edgelines
- Object markers

G. **Clear Zone**
- Remove hazards
- Traffic barriers
- Relocate utilities as close to right of way line as possible

H. **Combinations**
- Speed study if a high crash rate
- Traffic barriers
- Spot reconstruction

STEP 7. DOCUMENT DESIGN EXCEPTION IN THE PROJECT FILE. FOR FEDERAL AID PROJECTS, SEND 2 COPIES OF THE FOLLOWING TO THE IOWA DOT DISTRICT OFFICE:

1. Cover letter stating the exception(s)
2. Analysis of the crash history with Access-ALAS printout
3. B/C ratio
4. County's reason(s) for the exception(s)
5. County's proposed mitigation(s)
6. Copies of all documentation (Access-ALAS printout, B/C worksheet, Bridge rail sheet, etc.)

STEP 8. APPROVAL/DISAPPROVAL BY THE IOWA DOT

The District Local Systems Engineer will review the design exception request and notify the County of his/her approval or disapproval of the request.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.220
Subject:	Design Exception Information for Bridges Narrower than Approach Pavement	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing document, which is included on the pages immediately following this placeholder page:

- County Engineers I.M. 3.132, Design Exception Process for Bridges Narrower than Approach Pavement

When I.M. 3.220 is complete, this placeholder page and the existing document referenced above should be removed and replaced with the new I.M. 3.220.

Form 740001WD
4-96

Iowa Department of Transportation

INSTRUCTIONAL MEMORANDUMS
To County Engineers

To	Date
County Engineers	February 2002
From	**IM No.**
Office of Local Systems	3.132

Subject
Design Exception Process for Bridges Narrower than Approach Pavement

The purpose of this I.M. is to provide guidelines to prepare a design exception request for a narrow bridge on a federal-aid project. We recommend that counties follow a similar process to document similar actions on farm-to-market and locally funded projects. The information should be placed in the project record.

The AASHTO Guidelines Tables in I.M. 3.210 list minimum clear roadway widths and design loadings for existing bridges to remain in place on new or completely reconstructed projects. The 3R Table in I.M. 3.214 lists minimum clear roadway widths for existing bridges to remain in place on 3R projects. Any bridge, having a width less than the values shown in the tables, is considered a narrow bridge. Federal-aid projects will require a design exception request as outlined in I.M. 3.218 and 3.216. The design exception request should be included with the Concept Statement submittal to the Iowa DOT's appropriate District Local Systems Engineer.

Two copies of the following information must be included in any design exception request for a narrow bridge on a federal-aid project.

1. **A cover letter stating the exception(s) and**
   - A ¼ inch scale map showing the location of the bridge.
   - A copy of the current SI&A report.
   - Photos of the existing bridge showing general condition, waterway, approach roadway, railings, etc.

2. **Analysis of the crash history and the ALAS printout**
   - Summarize any crashes which have occurred on or near the bridge.
   - Review the crashes with respect to location, rate, severity, type, contributing circumstances, time period and environmental conditions.

3. **Benefit/Cost (B/C) ratio**
   - Prepare a cost estimate to widen or replace the bridge to the current "Aids" Table value.
   - Assume a design loading of HS-20 will need to be obtained.
   - Determine the Benefit-Cost (B/C) ratio.

4. **County's reasons for the exception(s)**
   - Summarize all points considered in the county's decision to not widen or replace the existing bridge.
   - State whether the bridge has any historical significance.

- Discuss any unusual engineering problems involved.
- Include the total estimated cost of the project including right-of-way, grade, pave, etc.
- Exceptions will have a better chance of approval if the bridge width is not more than two feet narrower than the traveled way or pavement width, especially when the ADT is over 50 vehicles per day.

5. County's proposed mitigations

- Describe the mitigation measures the county intends to employ. The MUTCD states "A Narrow Bridge sign (W5-2, W5-2a) is intended for use in advance of a bridge or culvert having a clear two-way roadway width of 16 to 18 feet or any bridge or culvert having a roadway clearance less than the width of the approach pavement."
- For narrow bridges having a roadway clearance less than the width of the approach pavement, warning signs, roadside delineators, object markers and edge line pavement markings (on hard surfaced roads) should be installed. Edge line pavement markings should extend 300 feet from all four corners of the bridge.
- Refer to I.M. 3.213 to determine if guardrail should be installed or if existing guardrail and / or existing bridge rail should be improved.
- Address the need for any load limitation signing.

6. Copies of all documentation

Please make sure your submittal includes copies of all documentation mentioned above. Failure to do so will delay the processing of the request.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: August 29, 2006
From:	Office of Local Systems	I.M. No. 3.305
Subject:	Federal-aid Participation in Consultant Costs	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for a Local Public Agency (LPA) to select a consultant; request Iowa Department of Transportation (Iowa DOT) approval and Federal Highway Administration (FHWA) authorization for Federal participation in consultant costs; and prepare a consultant contract, including acceptable payment methods and a sample contract. This I.M. also includes the following attachments:

Attachment A – Federal-aid Consultant Checklist
Attachment B – Guidelines for Federal-aid Consultant Contracts
Attachment C – Payment Methods
Attachment D – Sample Consultant Contract (also available in Microsoft Word format)

Introduction

All consultant contracts which will be reimbursed with Federal funds shall comply with the Title 23 of the Code of Federal Regulations, Part 172 (23 CFR 172). Among other things, these regulations require consultant services to be acquired through a qualifications-based selection process. When using a qualifications-based process, price may not be considered when determining which consultant is most qualified. Price is negotiated only after the most qualified consultant has been identified.

Estimate of Consultant Costs

Prior to beginning the consultant selection process, the LPA shall prepare its own estimate of consultant costs. This estimate should include all phases of work that the consultant will be expected to perform, even if the initial agreement will not encompass all phases of work. In other words, the estimate should reflect the total anticipated cost of all services that will eventually be provided by the consultant.

The LPA should prepare a detailed estimate based on the estimated number of hours and hourly rates for each type of employee, direct expenses, and typical overhead and profit margins. However, if the LPA is unable to prepare a detailed estimate, the LPA may prepare a simplified estimate based on typical consultant fees as a percentage of the total construction costs. Typical design costs for road, bridge, and trail construction range from 8 to 10 percent of the total construction cost. Typical construction inspection services for road, bridge, and trail construction range from 12 to 15 percent of the total construction cost.

However the cost estimate is prepared, the primary responsibility for determining the reasonableness of the proposed consultant costs rests with the LPA. The purpose of the LPA's estimate is to assist in negotiating a consultant contract at a fair and reasonable cost. For estimating very complex or unusual consultant services, the Iowa DOT will provide assistance to the LPA upon request.

Consultant Selection

Attachment A – Federal-aid Consultant Checklist, outlines the steps for selecting a consultant, requesting FHWA authorization, and requesting reimbursement of consultant costs. The LPA should be careful to follow the steps outlined in this Attachment. If the selection process used does not comply with these procedures, the consultant costs may not be eligible for Federal reimbursement. In addition, the cost of any consultant work done prior to FHWA authorization will not be eligible for Federal reimbursement. Attachment A contains two different procedures for consultant selection, an abbreviated process and a full process.

Abbreviated Process:

The abbreviated process may be used if the cost of all phases of the proposed consultant work is estimated to be less than or equal to $100,000. The abbreviated process does not require use of a selection committee, distribution of a Request for Proposal (RFP), or use of written evaluation criteria and a scoring matrix. However,

the LPA must consider at least 3 firms, all of which must be on the Iowa DOT pre-qualified list, and document their selection process.

Full Process:

If the cost of all phases of the proposed consultant work is estimated to be greater than $100,000, the full selection process shall be used. In summary, the full process includes forming a selection committee, preparation and distribution of an RFP, and evaluation of proposals received based on established criteria. When using the full selection process, consultants do not have to be prequalified with the Iowa DOT in order to be considered.

A key aspect of the full selection process is preparing a well written RFP. The Iowa DOT does not require a standard format, however, the RFP prepared by the LPA shall contain the following as a minimum:

1. A scope of services for the proposed work.
2. The evaluation criteria used and the relative weight for each factor.
   - The criteria shall **not** include a factor for DBE involvement or estimated contract cost.
   - Geographic location may be included in the evaluation criteria, unless application of this criterion would result in less than 3 qualified firms.
3. The preferred method of payment (see Attachment C – Payment Methods for acceptable methods).
4. The proposed DBE goal. If no DBE goal is proposed for contracts estimated to be greater than $100,000, the LPA must document the reasons why no DBE goal is proposed. For guidance in setting DBE goals, refer to I.M. 3.710, DBE Guidelines.
5. The deadline date for receiving proposals.

If inexperienced in preparing RFPs, the LPA may wish to review the Iowa DOT current list of RFPs for examples of typical format and content. These are available on the Iowa DOT Consultant Utilization web site, as shown on the Open Requests for Proposals page. (Note: most of the Iowa DOT consultant contracts are not Federally funded, so they do not typically include a statement about a DBE goal.)

For additional guidance in conducting the full selection process using qualifications-based procedures, refer to the Qualifications-Based Selection: A Guide for Selecting an Architect or Engineer for Public Owners, published by the American Council of Engineering Companies of Iowa.

Contract Negotiation

After receiving Iowa DOT approval, the LPA shall initiate negotiations with the consultant deemed to be the most qualified. The LPA shall provide the consultant with necessary information and request the consultant to submit its proposal with supporting cost and pricing data. Negotiations are intended to lead to the development of a contract mutually satisfactory to the LPA and the selected consultant. The goals of the negotiation process are to:

- Make certain that the consultant has a clear understanding of the scope of services.
- Determine that the consultant will make available the necessary personnel and facilities to accomplish the scope of services within the required time.
- Reach agreement with the consultant on the provisions of the contract, including equitable compensation for the required services and the most suitable and appropriate method of payment. This should include review of an itemized estimate of consulting fees, including tasks, estimated hours, hourly rates, and expenses (both direct and indirect, such as overhead).
- Determine, where applicable, whether the consultant can provide a design that will permit construction within established project costs.
- Verify that the project manager and the project team are the same as those in the proposal submitted to the selection committee (applicable only if the full process was used).

If a mutually satisfactory contract cannot be negotiated upon receiving a best and final offer in writing, the LPA shall formally terminate the negotiations and notify the consultant in writing. Termination of negotiations shall be made without prejudice. The substance of terminated negotiations is confidential. The LPA shall then initiate negotiations with the consultant given second preference, and this procedure shall be continued until a mutually satisfactory contract has been negotiated.

Contract Preparation

Attachment B – Guidelines for Federal-aid Consultant Contracts, provides guidance for preparing a consultant contract. The Iowa DOT requires that certain provisions be included in all contracts which will be reimbursed with Federal funds. The Iowa DOT also recommends that certain other contract provisions be included for the mutual benefit of both the LPA and the consultant. This Attachment identifies both the required and recommended contract provisions.

Attachment C – Payment Methods, outlines several types of payment options that are acceptable for consultant contracts with Federal-aid participation. Regardless of which form of agreement is used, the method of payment it employs shall conform to one of the options described in this Attachment.

Attachment D – Sample Consultant Contract, provides a model contract for the LPA and its consultant to use. This Attachment is also available in Microsoft Word format.

The Sample Consultant Contract indicates the areas that are intended for modification by using yellow highlighting. If additional modifications to the text of the Sample Consultant Contract are made, the LPA shall advise the Iowa DOT Administering Office when the draft contract is submitted for review and specifically identify those parts of the Sample Consultant Contract that have been modified. If the draft contract is prepared using Microsoft Word, use of the "Track Changes" formatting, or something similar, is strongly encouraged.

Note: The Iowa DOT strongly recommends use of the Sample Consultant Contract because it will ensure compliance with the Federal regulations and considerably reduce the time required for review by the Iowa DOT. If the Sample Consultant Contract is not used, the LPA and its consultant should review Attachment B carefully before submitting a draft contract to the Iowa DOT for review to ensure that all of the required provisions are included.

Pre-audit Procedures

If the estimated total consultant cost (including any planned supplemental agreements) is greater than $100,000, the Administering Office will forward 1 copy of the draft contract(s) to the Office of Finance, External Audits, and request a pre-audit. If the estimated cost is less than $100,000, a pre-audit is usually not required, unless:

- there is insufficient knowledge of the consultant's accounting system;
- there is previous unfavorable experience regarding the reliability of the consultant's accounting system;
- the contract involves procurement of new equipment or supplies for which cost experience is lacking; or
- the Iowa DOT Administering Office has concerns about any item in the proposed cost estimate.

External Audits may waive the need for a pre-audit based on its knowledge of the consultant and its past audit history. A pre-audit typically includes:

- an analysis of the consultant's cost proposal and financial records for the method of accounting in place to assure that the consultant has the ability to adequately segregate and accumulate reasonable and allowable costs to be charged against the contract; and
- an analysis of the consultant's proposed direct costing rates and indirect overhead factors to assure their propriety and eligibility for Federal reimbursement.

If there are any questions about the pre-audit procedures, the LPA or Administering Office may contact External Audits for assistance.

Contract Administration

Contract officials and monitoring by the Iowa DOT:

The LPA shall appoint one of its officials to act as the Contract Officer and be responsible for administration of the consultant contract. The Contract Officer shall not be employed by the selected consultant. An Iowa DOT Administering Office staff person shall serve as the Contract Monitor. The Contract Officer's approval and the Contract Monitor's concurrence are required on all matters regarding contract administration, including any adjustments to the contract price, approval of extra work, or execution of supplemental contracts.

Final Design Activities and the NEPA process:

The National Environmental Policy Act (NEPA) and its implementing regulations require that certain procedures be followed in the process of selecting the location of Federal-aid project. Until this process has been completed and accepted by the Iowa DOT and the FHWA, final design activities may not begin, as required by 23 CFR 771.113.

Environmental and related engineering studies, agency coordination, public involvement activities, and preliminary engineering work are not considered final design. Therefore, if FHWA authorization for these costs has been obtained, these activities may proceed prior to completing the NEPA process. However, work directly associated with preparation of construction documents is considered final design. For Federal-aid projects let at the Iowa DOT, work associated with preparation, review, or submittal of Check Plans or Final Plans is considered final design.

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 these documents, referred to respectively as a Finding of No Significant Impact (FONSI) and Record of Decision (ROD). For more information concerning the types of NEPA documentation, refer to I.M. 3.112, FHWA Environmental Concurrence Process.

Reimbursements:

The LPA may request reimbursement for approved and authorized consultant costs anytime after payments have been made to the consultant. Each request for reimbursement shall include:

- 1 cover letter that identifies the project number, the type of services for which reimbursement is being requested, and the total amount claimed for reimbursement;
- 1 copy each of the prime consultant and any applicable subconsultant invoices; and
- 1 copy of the canceled check or warrant to verify that the LPA has made payment to the consultant.

Use of the sample invoice format is recommended, as shown in Attachment D - Sample Consultant Contract.

Contract Close-out

After all the consultant's work is completed, the LPA shall submit a request for final reimbursement to the Iowa DOT Administering Office. Because the final audit process can require a significant amount of time, and the final audit will need to be complete before the project as a whole can receive final Federal-aid reimbursement, the LPA should submit their request for final reimbursement of consultant work as soon as possible.

Upon receipt of a request for final reimbursement of consultant costs, the Administering Office will forward a request for a final audit or final review to the Iowa DOT Office of Finance, External Audits. Lump sum agreements do not need a final audit, but may have a final review. External Audits may waive final audit requirements on agreements less than $100,000. Final reimbursement for lump sum agreements or hourly rate agreements under $100,000 can be made prior to the final audit or review (reimbursement set by agreement).

If a final audit is conducted, External Audits will review all invoiced charges to assure that the charges are adequately supported and are eligible for reimbursement. After the final audit is complete, External Audits will return the audit report to the Administering Office, which in turn will pass the report on to the LPA and the consultant.

- If the audit report finds that a balance is due to the consultant, the consultant may invoice the LPA for the balance due and the LPA may request reimbursement for the additional payment. Upon receipt of such a request, the Iowa DOT will reimburse the LPA for the appropriate Federal share.
- If the audit report finds that the consultant has been overpaid, the Iowa DOT will invoice the LPA for the appropriate Federal share or deduct this amount from the balance of reimbursement that is due to the LPA for other project costs. Likewise, the LPA may request reimbursement from the consultant for the amount of overpayment.

Federal-aid Consultant Checklist

The following checklist describes the procedures and sequence of steps that a local public agency (LPA) must follow to receive Federal-aid reimbursement for consulting services. Items with an asterisk (*) are the responsibility of the LPA. The LPA is encouraged to include this checklist in their project file and use it to ensure that all the necessary steps are completed.

☐* 1. The LPA prepares a scope of work and cost estimate that reflects the consultant services to be requested. If the cost estimate for consultant work is less than or equal to $100,000 go to Step 2; if over $100,000, go to Step 6. See the "Estimate of Consultant Costs" section of I.M. 3.305 for additional guidance in preparing a cost estimate.

☐* 2. The LPA obtains a list of consultants which are prequalified with the Iowa Department of Transportation (Iowa DOT) in the categories of work required. This list is available on the Iowa DOT Consultant Utilization website.

☐* 3. The LPA identifies at least 3 firms from the Iowa DOT prequalified list to be considered for the desired services. If the LPA is interested in a firm not on the list, go to Step 6. The LPA also decides if a Disadvantaged Business Enterprise (DBE) goal will be set, and if so, what percentage will be targeted. For guidance in setting DBE goals, refer to I.M. 3.710, DBE Guidelines.

☐* 4. The LPA may hold discussions with an adequate number of prequalified firms as necessary to evaluate their ability to perform the work. Such discussions should include items such as: any changes in qualified staff, workload, willingness to meet time requirements, ability to meet the established DBE goal (if any), past performance, accounting methods, and approach to the project.

☐* 5. If after discussions, the LPA feels they can negotiate an agreement with a prequalified consultant at a cost less than or equal to $100,000, the LPA submits a request to begin negotiations to the Administering Office and proceeds to Step 21. This request shall include the following:
   a) The proposed scope of work and estimate of consultant costs.
   b) The names of all the pre-qualified firms considered.
   c) The reasons why the selected consultant is considered most qualified.
   d) An indication if the LPA has set a DBE goal, and if so, the targeted percentage of DBE participation.

☐* 6. The LPA appoints a selection committee. The selection committee should have 3 to 5 members which may include LPA staff, elected officials, and at least one member with technical expertise (i.e., a licensed professional engineer or architect). The selection committee can add non-voting members to act as resources if it deems necessary.

☐* 7. The LPA submits the selection committee membership and method of appointment to the Administering Office. The LPA requests authority to proceed with the consultant selection process.

☐ 8. If acceptable, the Administering Office approves the LPA's request to proceed with the selection process.

☐* 9. The LPA prepares and submits a draft Request for Proposal (RFP), estimate of costs, and the proposed DBE goal, if any, to the Administering Office. For guidance in preparing the draft RFP, refer to the "Consultant Selection" section of I.M. 3.305.

☐ 10. The Administering Office reviews the draft RFP, estimated consultant costs, and proposed DBE goal, if any. If these are acceptable, the Administering Office concurs and notifies the LPA. If not, the Administering Office works with the LPA to resolve any concerns.

☐* 11. The LPA sends qualifications-based RFPs to three or more consultants. The LPA also sends RFPs to all Certified DBE consultants claiming experience in the categories of work to be included in the contract, as listed in the Iowa Directory of Certified Disadvantaged Business Enterprises, published by the Iowa DOT Office of Contracts.

Note: The LPA may not direct the consultant to include an estimate of cost with their proposal, even if the estimated cost is to be submitted in a separate, sealed envelope. If the LPA receives a proposal that includes cost information, that proposal should not be considered.

☐ 12. Consultants prepare and submit proposals in response to the RFP. If a DBE goal has been set by the LPA, consultants must document their good faith efforts to meet the goal. This documentation should include: a list of DBE firms contacted, a list of the DBE firms that responded with a subcontract proposal, and, if the consultant does not propose to use a DBE firm that submitted a subcontract proposal, an explanation why such a DBE firm will not be used.

☐* 13. The LPA selection committee evaluates proposals utilizing the evaluation criteria. When evaluating the proposals, the selection committee **shall not** consider whether a consultant's proposal does or does not meet the DBE goal, if any. DBE goals should only be considered after the consultants have been ranked according to the selection criteria.

☐* 14. If appropriate, the LPA selection committee conducts interviews (usually with no more than the top three firms). The LPA then applies the evaluation criteria, and finalizes the ranking in order of preference. The selection committee also documents its decision-making process.

☐* 15. If a DBE goal was set for the contract, the LPA reviews the documentation provided with the consultant's proposal to verify the consultant's good faith effort to meet the DBE goal. If, in the opinion of the LPA, the consultant made a good faith effort, or if no DBE goal was set for the contract, proceed to Step 20. For guidance in evaluating good faith efforts, refer to I.M. 3.710, DBE Guidelines.

☐* 16. If, in the opinion of the LPA, the consultant **did not** make a good faith effort to achieve the DBE goal, the LPA notifies the consultant that a contract cannot be awarded due to the consultant's lack of a good faith effort.

The consultant may appeal the LPA's decision by submitting a written request for an administrative reconsideration. If an appeal is made, proceed to the next step. If no appeal is sought, the LPA goes back to Step 15 and evaluates the good faith effort of the next highest ranked firm. For the guidance concerning the administrative reconsideration procedures, refer to I.M. 3.710, DBE Guidelines.

☐ 17. The consultant prepares and sends a written request for an administrative reconsideration to the Administering Office. This request should include 2 copies of the following: the RFP (if used), the consultant's proposal, and any additional justification or documentation that may support the consultant's good faith efforts to meet the DBE goal.

☐ 18. Upon receipt of the written request for an administrative reconsideration, the Administering Office forwards this request to the Office of Contracts, along with one copy of the documentation provided by the LPA and / or consultant.

☐ 19. The Office of Contracts reviews the administrative reconsideration request. If the Office of Contracts concurs with the LPA's determination, the Office of Contracts so notifies the Administering Office and provides copies to both the LPA and the consultant. The LPA goes back to Step 15 and evaluates the good faith effort of the next highest ranked firm.

If, on the other hand, the consultant's good faith effort is judged sufficient, the Office of Contracts notifies the Administering Office and provides copies to the LPA and the consultant.

☐* 20. The LPA submits the consultant rankings to Administering Office and requests approval to initiate negotiations with the consultant ranked highest by the selection process.

☐ 21. The Administering Office reviews the LPA's request to begin negotiations with the selected consultant and the proposed DBE goal, if not already reviewed. If acceptable, the Administering Office concurs and notifies the LPA.

☐* 22. The LPA informs those consultants that submitted proposals of the results of the selection process.

☐* 23. The LPA begins negotiations with the selected consultant. For additional guidance on negotiation procedures, refer to the "Contract Negotiation" section of I.M. 3.305. Negotiations continue until agreement is reached on these items. If agreement cannot be reached on these items, the LPA goes back to Step 3 (for contracts estimated less than $100,000) and begins discussions with the next firm; or goes back to Step 15 (for contracts estimated at $100,000 or more) and evaluates the good faith effort of the next highest ranking firm. This process continues until negotiations are successful.

☐* 24. The LPA submits a request for FHWA authorization to the Administering Office. This request shall include the following information:
   a) 2 copies of a draft agreement prepared by the consultant, including any subconsultant agreements, if available.
   b) An estimate (even if only a very rough one) of the costs of all future phases of consultant contract work that are anticipated for the project. This should include costs for any additional design work and any construction inspection services that are not covered by the draft agreement.
   c) 2 completed copies of the DBE Commitment Information (Form 517010). If submitted electronically, hard copies are not required. This form is required, even if no DBE goal was set or no DBE commitment has been made. For more information, refer to the instructions included with the form.
   d) If a DBE goal was set, and the consultant's DBE commitment is less than the goal, include documentation that supports the consultant's good faith efforts to meet the DBE goal established for the contract. This should include the justification for the consultant's proposed DBE involvement that was submitted as part of their proposal. It also should include any additional considerations weighed by the LPA when reviewing the consultant's good faith efforts.

☐ 25. The Administering Office reviews the draft agreements in accordance with Attachment B to I.M. 3.305 and verifies that Form 517010 was completed correctly. If a DBE goal was set for the contract, and the consultant's proposed DBE commitment is less than the goal, the Administering Office reviews the documentation provided by the LPA concerning the consultant's good faith effort to meet the DBE goal.

☐ 26. If appropriate, the Administering Office shall forward 1 copy of the draft agreement(s) to the Office of Finance (External Audits) and request a pre-audit. For more information on pre-audits, refer to the "Pre-audit Procedures" section of I.M. 3.305.

☐ 27. External Audits conducts a pre-audit (if requested) of the draft agreement(s) and forwards 3 copies of the pre-audit report to the Administering Office.

☐ 28. The Administering Office forwards 1 copy of the pre-audit report (if conducted) and the Administering Office's comments on the draft agreement(s) to the LPA and the consultant.

☐ 29. The Administering Office verifies that adequate federal funds are shown in the current fiscal year of the Statewide Transportation Improvement Program (STIP). If funds are inadequate, or if they are incorrectly programmed, the Administering Office contacts the LPA and requests them to work with the appropriate Metropolitan Planning Organization (MPO) or Regional Planning Affiliation (RPA) to revise the programming of the project's funds.

☐ 30. If adequate funds are available, and they are correctly programmed, the Administering Office prepares a request for FHWA authorization.

☐ 31. The Iowa DOT submits the authorization request to FHWA. FHWA reviews the authorization request, and if acceptable, electronically signs the request.

☐* 32. The consultant and LPA modify the agreement(s) to address the Administering Office's comments and the pre-audit recommendations, if any. The LPA submits the agreement(s) to the City Council, County Board of Supervisors, County Conservation Board, or other appropriate contracting authority for approval.

☐* 33. The consultant and LPA execute and forward 3 originals of the prime agreement and any subconsultant agreements to the Administering Office.

☐ 34. The Administering Office verifies that all comments have been addressed. If not, the Administering Office works with the LPA to resolve any remaining issues.

☐ 35. The Administering Office verifies that FHWA authorization has been obtained. If so, the Administering Office signs and dates the original prime agreements, notifies the LPA that FHWA authorization has been obtained, and provides a copy of the notification to the appropriate RPA or MPO. The Administering Office's notification shall contain a reminder that the consultant's final design activities shall not proceed until the NEPA process is complete. For additional information concerning this requirement, refer to the "Contract Administration" section of I.M. 3.305.

☐* 36. The LPA issues notice to proceed to the consultant and requests copies of executed subconsultant agreements (if not previously obtained) and forwards them to the Administering Office. The LPA shall remind the consultant that final design activities may not proceed until the NEPA process is complete.

☐ 37. The Administering Office sends 1 signed original authorized agreement to both the LPA and consultant; and provides 1 copy each to the Office of Finance (Project Accounting & Payables) and External Audits. The Administering Office retains one original prime agreement for their file.

☐* 38. After a payment has been made to the consultant, the LPA may submit a request for reimbursement to the Administering Office. For more information on reimbursement requests, refer to the "Contract Administration" section of I.M. 3.305.

☐ 39. The Administering Office processes the billings received from the LPA for reimbursement.

☐* 40. After all work covered by the consultant agreement is complete, including any approved supplemental agreements, the LPA requests final reimbursement for the consulting services. Along with the request for final reimbursement of consulting services, the LPA shall also complete and include 2 copies of the DBE Payment Information (Form 517011). If submitted electronically, hard copies are not required. This form is required, even if no DBE goal was set or no DBE commitment has been made. For more information, refer to the instructions included with the form.

☐ 41. The Administering Office reviews Form 517011. If complete, the Administering Office forwards 1 copy of this form to the Office of Contracts.

☐ 42. Upon receipt of the LPA's request for final reimbursement for consulting services, the Administering Office requests a final audit or a final review from External Audits. For more information on final audit or final review procedures, refer to the "Contract Close-out" section of I.M. 3.305.

☐ 43. After the final review or audit is completed, the Administering Office processes the final reimbursement for the LPA's consultant costs.

Guidelines for Federal-aid Consultant Contracts

This attachment lists both the required and recommended contract provisions for prime consultant contracts that will be reimbursed with Federal funds. For each provision, cross-references to the corresponding sections of the Sample Consultant Contract, as shown in Attachment D to I.M. 3.305, are shown in parenthesis. If the Sample Consultant Contract is not used, the required contract provisions should be copied from cross-referenced sections and inserted in the proposed contract.

A few of the required provisions for prime contracts are also required for subconsultant contracts. Such provisions are specifically identified below. However, the Iowa DOT recommends that all of the required and recommended provisions for prime consultants also be included in any subconsultant contracts.

Required Contract Provisions

The following provisions are requirements and must be included in all Federal-aid consultant contracts between a Local Public Agency (LPA) and its consultant. The proposed contract shall:

1. Clearly define the parties to the contract. (See 1.3)

2. Include a provision that prohibits beginning final design activities until after FHWA Environmental Concurrence has been obtained. For more information on this requirement, see the "Contract Administration" section of I.M. 3.305. (See 1.4.3)

3. Include the name of the project for which services are being provided (See p. 1)

4. Include a general description of the services to be performed. (See 2.1.1)

5. Contain a scope of services section that specifically details each individual task to be performed and describes what each task is to accomplish. (See 2.1.1 and Attachment A – Scope of Services)

6. Clearly define the specifications for the consultant contract work, such as the quantity and format of the project deliverables. Project deliverables may include hard copies of plans, specifications, and electronic files. (See 2.1.2 and Attachment B – Specifications)

7. Include provisions that require approval of both the Owner and the Iowa DOT before the prime consultant may use cost underruns associated with subcontracts. (See 3.2)

8. Set forth the terms under which the consultants may be compensated for extra work. Extra work for which reimbursement will be requested shall be concurred in by the Owner and the Iowa DOT prior to the work beginning. (See 4.3 and Attachment C – Fees and Payments)

9. Include provisions that apply in the event that the contract is terminated or suspended. These provisions shall also be included as part of any subconsultant contracts. (See 4.6)

10. Include arbitration provisions for settling disputes regarding the contract. These provisions shall also be included as part of any subconsultant contracts. (See 4.8 and 4.9)

11. Include a clause stating that the consultant shall defend, indemnify and hold harmless the Local Public Agency (LPA), the Iowa Department of Transportation (Iowa DOT), the Federal Highway Administration (FHWA), its agencies, agents, employees and assignees from all claims and liabilities due to negligent acts, errors, or omissions of the consultant, its members, agents, stockholders or employees in connection with performance of the contract. (See 4.10)

12. Include a non-raiding clause stating that the consultant shall not engage the services of any person or persons, in the employ of the LPA, Iowa DOT, or FHWA for work covered by the contract without the written consent of the employers of such persons. (See 4.11)

13. Include a statement that the consultant agrees to comply with all federal, state and local laws and ordinances applicable to the work. (See 4.12)

14. Include provisions prohibiting subletting, assigning or transferring any portion of the contract without the written approval of the LPA and the Iowa DOT. (See 4.13)

15. Include provisions stating that the consultant warrants that he/she has not employed or retained any company or person, other than a bona fide employee working for the consultant, to solicit or secure the contract and that he/she has not paid or agreed to pay any company or person, other than a bona fide employee, any fee, commission, percentage, brokerage fee, gift or any other consideration, contingent upon or resulting from the award or making of the contract. For breach or violation of this warranty, the LPA shall have the right to annul the contract without liability, or, in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or counterpart fee. (See 4.14)

16. Include provisions that require a licensed engineer or architect in the State of Iowa to certify the plans and specifications. (See 4.15)

17. Contain provisions ensuring compliance with the nondiscrimination and Disadvantaged Business Enterprise requirements contained in Title 49 of the Code of Federal Regulations. These provisions shall also be included as part of any subconsultant contracts. (See 4.16)

18. Include provisions that provide for access to the consultant's records and sets forth the time of record retention as three years from the date of final payment under the Contract. These provisions shall also be included as part of any subconsultant contracts. (See 4.17)

19. Include provisions acknowledging that the consultant's work is subject to the review and approval of the Iowa DOT and FHWA (when applicable), and that both have the right to participate in conferences between the owner and the consultant. (See 4.18)

20. Include a page for signature by the contracting agency and the consultant. This page shall also include the following signature block for the Iowa DOT: (See p. 11)

    Iowa Department of Transportation
    Accepted for FHWA Authorization*

    By _____ Date _____, _____
    [name of person signing for DOT]
    [title of person signing for DOT]
    [name of Iowa DOT Office]

    * The Iowa DOT is not a party to this agreement. However, by signing this agreement, the Iowa DOT is indicating the work proposed under this Agreement is acceptable for FHWA authorization of Federal funds.

21. Contain a section covering fees and payments to the consultant. This section shall identify the method(s) of payment (lump sum, cost plus a fixed fee, cost per unit of work, or specific rates of compensation). (See Attachment C – Fees and Payments)

22. Include a clause stating that the consultant agrees to reimburse the Owner for any overpayment determined by final audit. (See Attachment C – Fees and Payments)

23. Contain a section whereby the consultant agrees to comply with the cost principles specified by the Federal Acquisition Regulations found in 48 CFR 31. (See Attachment C – Fees and Payments)

24. If the contract uses a Cost Plus Fixed Fee or Fixed Overhead Rate method of compensation, attach a detailed itemized cost estimate that includes a summary of staff hours, fees, indirect costs and any subcontract costs. Any costs not eligible for Federal-aid participation should be clearly identified. (See Attachment C – Fees and Payments, Cost Plus Fixed Fee and Fixed Overhead Rate options)

25. If the contract uses a Specific Rate of Compensation or Unit Price method of compensation, attach a fee schedule that specifies the rates or unit prices that will be used. (See Attachment C – Fees and Payments, Specific Rate of Compensation and Unit Price options)

26. Include the following certifications, which are included as attachments to the Sample Consultant Contract, which is included as Attachment D to I.M. 3.305. These attachments shall also be included as part of any subconsultant contracts:

    a) Attachment D - Certification Regarding Debarment, Suspension and Other Responsibility Matters - Primary Covered Transactions
    b) Attachment E - Certification of Consultant*
    c) Attachment F - Certification of Owner*

    * These documents certify that no firm, organization or person was retained to secure the consultant contract.

Recommended Contract Provisions

The following provisions are recommended, but not required. The proposed contract should:

1. Contain a definition section that identifies terms/pronouns that may be substituted for other terms/nouns. (See p. 1)

2. Contain a section that outlines general contract provisions and responsibilities. (See p. 1)

3. Set forth the time of beginning and completion of work under the contract. (See 1.4)

4. Include clauses that define what constitutes the entire contract. (See 2.1)

5. Include provisions for the ownership of documents produced. (See 4.1)

6. Include provisions for inspection and acceptance of the consultant's work by the Owner. (See 4.2.1, 4.4, and 4.5)

7. Include a clause requiring the consultant to perform such additional work as may be necessary to correct errors in the work required under the contract. The consultant should complete the additional work without undue delays and without additional cost to the owner. In addition, the consultant should be held responsible for additional costs in subsequent related construction work, resulting from errors or omissions which are a result of gross negligence or carelessness on the part of the consultant. (See 4.2.2)

8. Include provisions for time extensions. (See 4.7)

9. Include a severability clause that specifies how the validity of the contract is affected if any part(s) of the contract is ruled invalid. (See 4.19)

Payment Methods

Types of Payment Methods

Several types of payment methods are available for use in Federal-aid consultant contracts. All payment methods must be based on supportable and reasonable costs within the consultant's accounting system. A reasonable cost is one that does not exceed that which would be incurred by a prudent person in the conduct of a competitive business.

The Sample Consultant Contract, included as Attachment D to I.M. 3.305, contains a different "Attachment C – Fees and Payments" for each type of payment method described below. If the Sample Consultant Contract is not used, the language from these attachments should be used as a guide.

1. Cost Plus Fixed Fee

Using this method, the consultant is reimbursed for actual documented costs incurred and, in addition, receives a predetermined fixed fee. This method of payment is appropriate when the scope, complexity, character and duration is indeterminable at the time of negotiations, or where the work is of a nature that the contracting authority does not have experience or knowledge to permit an evaluation of the consultant's proposal on any other basis.

This method requires, as a prerequisite to equitable negotiations, that the contracting authority and consultant define as fully and completely as possible, and agree upon, the scope of services.

By definition, cost plus fixed fee includes payment of:

a. Direct costs incurred, including:
   - Direct labor.
   - Direct non-salary costs incurred, such as the cost of materials incorporated into the contract work, travel expenses, computer charges, printing costs, expendable supplies, and payments to sub-consultants.

   Direct costs should be estimated by classification/category of expense. Categories can include, but are not limited to: CADD, computer, mileage, printing, telephone, copying, meals and lodging. All direct cost categories, estimated by the consultant, need to be charged consistently to all types of contracts to be eligible for reimbursement.

b. Indirect cost: Salary-related expenses and general overhead costs, which are calculated as percentages of direct labor. The overhead rate used should normally be estimated at the last verified rate. Under circumstances where the last verified rate is more than two years old, or where the last verified rate is not representative of the current business trend, an attempt should be made to negotiate a rate taking these circumstances into account. A three year average may be an acceptable alternative.

c. Fixed fee: A fixed amount (fixed fee) over and above direct and indirect costs. The determination of the amount of fixed fee shall take into account the size, complexity, duration, and degree of risk involved in the work. The establishment of the fixed fee shall be project-specific. Fixed fees normally range from 6 to 15 percent of the estimated total direct and indirect costs. When determining a fixed fee, exclude travel expenses, printing costs, miscellaneous expenses, contingency, and any subconsultant fees.

d. Contingency: An amount established to provide for reimbursement of unforeseen costs associated with the original contract items. The amount is normally 10% of direct and indirect costs, excluding any subconsultant fees. Under circumstances where the scope is not well defined, it may be appropriate to increase the amount of contingency.

   Contingency is normally used to cover increases in wage rates and overhead cost and, under some circumstances, to cover a limited amount of unforeseen costs. Contingency is not to be used without the prior written approval of the contracting authority and concurrence of the Iowa Department of Transportation (DOT), unless it is for overhead increases.

2. Fixed Overhead Rate

This method is the same as the Cost Plus Fixed Fee describe above, except that the overhead rate is fixed for the duration of the contract instead of being adjusted each year.

3. Lump Sum

Using this method, the consultant undertakes to perform the services stated in the contract for an agreed amount as full compensation. This method of payment is appropriate only if the contracting authority has established the scope, complexity and duration of the work required to a degree that just compensation can be determined and evaluated by all parties at the time of negotiations. This method would be most appropriate for use on small and repetitious items of work of no more than 18 months in duration. Use of contingency on a lump sum contracts is not appropriate.

4. Specific Rates of Compensation

Using this method, the consultant is paid at an agreed and supported specific fixed hourly or daily rate for each class of employee directly engaged in the work. Such rates of pay include the consultant's estimated costs and net fee. This method of payment should be considered only for relatively minor items of work of indeterminable extent over which the contracting authority maintains control of the class of employee to be used and the extent of such use.

Direct non-salary costs may be either set forth as an element of the specific rate or may be included in the contract as independent cost items. The specific rates, so determined, should be established by the consultant and found by the contracting authority to be reasonable and proper.

5. Unit Prices

Using this method, the consultant is paid on the basis of units of work performed. A unit of work may be defined as a measurement of work, such as linear feet (meters) of borings, number of right-of-way plats, tons (megagrams) of structural steel, or pounds (kilograms) of reinforcing steel. This method is appropriate when the cost of the work per unit can be determined, in advance with reasonable accuracy, but the extent of the work is indefinite.

Estimate of Proposed Consultant Fees

For all the types of contracts listed above, the consultant shall prepare a cost estimate to support the proposed fees. This estimate shall include direct and indirect costs the firm expects to incur, contingency (if any), and the expected fixed fee. For contracts using the Cost Plus Fixed Fee and Fixed Overhead Rate payment types, a similar estimate shall be attached to and made part of the contract (referenced as Attachment H – Consultant Fee Proposal in the Sample Consultant Contract). For the contracts using the other payment types, the cost estimate does not need to be part of the contract, but shall accompany the draft contract when submitted for review by the LPA and the Iowa DOT. An example cost estimate is shown on the following page.

Retention

A consultant contract may provide that a percentage of monthly payments be withheld until final payment is made or until final audit. This amount is often referred to as "retention" or "retainage." The Iowa DOT recommends that the amount retained not exceed 3% of the amount payable.

If the LPA desires to use retention, this should be specified in the consultant contract. Situations which may warrant the use of retainage include, but are not limited to, the following:

- The LPA has no prior experience with the consultant.
- The consultant's prior contracts have included large fluctuations in overhead rates.

Example Cost Estimate

I. Direct Labor Cost

Employee Classification	Hours	Rate	Amount
Principal	15	55.50	$ 832.50
Project Manager	200	32.15	$ 6,430.00
Design Engineer	250	29.85	$ 7,462.50
CADD Technician	475	22.18	$ 10,535.50
Clerical	30	14.79	$ 443.70
		Direct Labor Total =	$ 25,704.20

II. Payroll Burden and Overhead Costs

Indirect Cost Factor (Overhead Rate) =	170%
Total Indirect Costs =	$ 43,697.14

III. Direct Project Expenses

	Quantity	Rate	Amount
Copies (each) =	1500	$ 0.25	$ 375.00
Mileage =	600	$ 0.45	$ 270.00
Rental Car (days) =	6	$ 100.00	$ 600.00
Meals (each)=	20	$ 12.00	$ 240.00
Lodging (nights) =	12	$ 85.00	$ 1,020.00
Total Direct Expenses =			$ 2,505.00

IV. Subconsultant Costs

XYZ Consultants (cost plus fixed fee) =	$ 15,000.00
Surveyors, Inc. (lump sum) =	$ 9,500.00
Geotechnical Services, LLC (unit price) =	$ 1,500.00
Total Subconsultants =	$ 26,000.00

V. Estimate Actual Costs (I + II + III + IV) $ 97,906.34

VI. Fixed Fee - Prime Only (12% of I + II) $ 8,328.16

VII. Contingency - Prime Only (10% of I + II + III) $ 7,190.63

VIII. Total Estimated Cost (V + VI + VII) **$113,425.13**

Example Cost Estimate Notes:

Employee Classification: Labor classifications should match those used by the consultant.

Hours: Hours should represent estimated hours by classification to complete the work.

Rate: Labor rates should represent current rates that can be verified to the payroll register.

Indirect Cost Factor (Overhead Rate), Direct Expenses, Fixed Fee, and Contingency: (refer to discussion under Cost Plus Fixed Fee payment type above)

Subconsultant Costs: Subconsultant expenses should represent total estimated cost of work to be completed by an identified subconsultant. The estimated fee for the subconsultant should include direct labor, overhead, direct expenses, fixed fee and contingency, if any. The cost estimate should identify the type of payment method that will be used for each subconsultant. The subconsultant should also submit an estimate similar to one above so the subconsultant's expenses can be reviewed in the same manner as the prime consultant's.

[Sample Consultant Contract]

[Note: The title above and header information should be removed before use. Areas intended for modification are shown with yellow highlighter.]

Iowa DOT Project No. [number]
Owner Project No. [number]

Professional Services Agreement
for [short description services or project]

This is an **AGREEMENT**, made as of the _____ day of _____ in the year _____;

by and **BETWEEN** the [name of Local Public Agency], identified as the ***Owner*** ;
[Name,
address, and
other information]

and the ***Consultant*** ;
[Name,
address, and
other information]

for the following Project:

The ***Owner*** has decided to improve [name or short description of the project] in accordance with the current Statewide Transportation Improvement Program. It has been determined that the ***Owner*** shall proceed with the preparation of final design, plans, specifications and estimates for the improvements, subject to the concurrence and approval of the Iowa Department of Transportation (Iowa DOT) and the Federal Highway Administration (FHWA) (when applicable).

The ***Owner*** desires to employ the ***Consultant*** to provide [preliminary survey and] engineering services in connection with the design and preparation of plans, specifications and estimates for the improvements. The ***Consultant*** is willing to perform such engineering work in accordance with the terms hereinafter provided and warrants that it is in compliance with Iowa statutes relating to the licensure of professional engineers.

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Attachment A - Scope of Services
Attachment B - Specifications
Attachment C - Fees and Payments
Attachment D - Certification Regarding Debarment, Suspension, and Other Responsibility Matters
Attachment E - Certification of Consultant
Attachment F - Certification of Owner
Attachment G - Sample Invoice Form
Attachment H – Consultant Fee Proposal [if referenced by Attachment C]

ARTICLE 1 INITIAL INFORMATION

This Agreement is based on the following information and assumptions.

1.1 Project Parameters
The objective or use is:
[Identify, if appropriate, proposed use or goals and insert here]

1.2 Financial Parameters
1.2.1 The financial parameters are;
Amount of the ***Owner's*** budget for the ***Consultant's*** compensation is:
[Insert amount here]
1.2.2 Amount of the ***Consultant's*** budget for the subconsultants' compensation is:
[Insert amount here]

1.3 Project Team
1.3.1 The ***Owner's*** Designated Representative identified as the ***Contract Administrator*** is:
[Insert ***Contract Administrator's*** name here]

The ***Contract Administrator*** is the authorized representative, acting as liaison officer for the ***Owner*** for purpose of coordinating and administering the work under the Agreement. The work under this Agreement shall at all times be subject to the general supervision and direction of the ***Contract Administrator*** and shall be subject to the ***Contract Administrator's*** approval.

1.3.2 The ***Consultant's*** Designated Representative is:
[Insert Representative name here]

1.3.3 The subconsultants retained at the ***Consultant's*** expense are:
[Enter Subconsultant name(s) here]

1.4 Time Parameters

1.4.1 Date to Proceed: ***Consultant*** is to begin work under this Agreement upon receipt of a written notice to proceed from the Owner.

1.4.2 Preliminary design plans including type/size/location for all structures (preliminary design) [and detail elements for a design public hearing and construction right-of-way needs] shall be completed and accepted on or before [Insert date here] or [Insert days] calendar days after receiving the notice to proceed (whichever is greater).

1.4.3 The ***Consultant*** shall not begin final design activities until after the ***Owner*** has been notified by the Iowa DOT that FHWA Environmental Concurrence has been obtained. Upon receipt of such notice, the ***Owner*** will provide the ***Consultant*** notice to proceed with final design activities.

1.4.4 Final design, contract plans and specifications and estimates shall be completed and accepted on or before [Insert date here] or [Insert days] calendar days after receiving the notice to proceed with final design (whichever is greater).

ARTICLE 2 SCOPE OF SERVICES AND OTHER SPECIAL TERMS AND CONDITIONS

2.1 Enumeration of Parts of the Agreement. This Agreement, including its attachments, represents the entire and integrated agreement between the ***Owner*** and the ***Consultant*** and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by the ***Owner, Consultant***, Iowa DOT, and the FHWA (if applicable). This Agreement comprises the documents listed below.

2.1.1 The work to be performed by the ***Consultant*** under this Agreement shall encompass and include all detail work, services, materials, equipment and supplies necessary to prepare and deliver the scope of services provided in Attachment A.

2.1.2 All services herein required and provided shall be in conformity with the applicable Iowa DOT Standards, Design Guides and Specifications and Title 23, Code of Federal Regulations, Part 625, as outlined in Attachment B. In addition, applicable sections of the U.S. Department of Transportation Federal Aid Policy Guide (FAPG) shall be used as a guide in preparation of plans, specifications and estimates.

2.1.3 Other documents as follows:
.1 Fees and Payments – Attachment C
.2 Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Attachment D
.3 Certification of Consultant - Attachment E
.4 Certification of Owner - Attachment F
.5 Sample Invoice Form - Attachment G
.7 Consultant Fee Proposal - Attachment H [if referenced by Attachment C]
.8 [List other attachments, if applicable]

ARTICLE 3 FORM OF COMPENSATION

3.1 Method of Reimbursement

3.1.1 For the ***Consultant's*** services as described under Article 2, compensation shall be computed in accordance with the [select one: Cost Plus Fixed Fee, Lump Sum, Specific Rate of Compensation, Unit Price, or Fixed Overhead Rate] compensation method, as defined in Attachment C.

3.2 Subconsultant

3.2.1 The ***Consultant*** shall require the subconsultants (if applicable) to notify them if they at any time determine that their costs will exceed their estimated actual costs. The ***Consultant*** shall not allow the subconsultants to exceed their estimated actual costs without prior written approval of the ***Contract Administrator***. The prime ***Consultant*** is cautioned that cost under-runs associated with any subconsultant's contract are not available for use by the prime ***Consultant*** unless the ***Contract Administrator*** has given prior written approval and the Iowa DOT and the FHWA (when applicable) concurs.

ARTICLE 4 TERMS AND CONDITIONS

4.1 Ownership of Engineering Documents

4.1.1 All sketches, tracings, plans, specifications, reports on special studies and other data prepared under this Agreement shall become the property of the ***Owner*** and shall be delivered to the ***Contract Administrator*** upon completion of the plans or termination of the services of the ***Consultant***. There shall be no restriction or limitation on their future use by the ***Owner***, except any use on extensions of the project or on any other project without written verification or adaptation by the ***Consultant*** for the specific purpose intended will be the ***Owner's*** sole risk and without liability or legal exposure to the ***Consultant***.

4.1.2 The ***Owner*** acknowledges the ***Consultant's*** plans and specifications, including all documents on electronic media, as instruments of professional service. Nevertheless, the plans and specifications prepared under this Agreement shall become the property of the ***Owner*** upon completion of the services and payment in full of all moneys due to the ***Consultant***.

4.1.3 The ***Owner*** and the ***Consultant*** agree that any electronic files prepared by either party shall conform to the specifications listed in Attachment B. All electronic files will be submitted to the ***Owner*** by the ***Consultant*** on CD or other mutually agreed upon medium. Any change to these specifications by either the ***Owner*** or the ***Consultant*** is subject to review and acceptance by the other party. Additional efforts by the ***Consultant*** made necessary by a change to the CADD software specifications shall be compensated for as Additional Services.

4.1.4 The ***Owner*** is aware that significant differences may exist between the electronic files delivered and the respective construction documents due to addenda, change orders or other revisions. In the event of a

conflict between the signed construction documents prepared by the ***Consultant*** and electronic files, the signed construction documents shall govern.

4.1.5 The ***Owner*** may reuse or make modifications to the plans and specifications, or electronic files while agreeing to take responsibility for any claims arising from any modification or unauthorized reuse of the plans and specifications.

4.2 Revision of Plans

4.2.1 Drafts of work products shall be submitted to the ***Contract Administrator*** by the ***Consultant*** for review and comment. The comments received from the ***Contract Administrator*** and the reviewing agencies shall be incorporated by the ***Consultant*** prior to submission of the final work product by the ***Consultant***. Work products revised in accordance with review comments shall constitute "satisfactorily completed and accepted work". Requests for changes on work products by the ***Contract Administrator*** shall be in writing. In the event there are no comments from the ***Contract Administrator*** or reviewing agencies to be incorporated by the ***Consultant*** into the final work product, the ***Contract Administrator*** shall immediately notify the ***Consultant***, in writing, that the work product shall constitute "satisfactorily completed and accepted work".

4.2.2 In the event that the work product prepared by the ***Consultant*** is found to be in error and revision or reworking of the work product is necessary, the ***Consultant*** agrees that it shall do such revisions without expense to the ***Owner***, even though final payment may have been received. The ***Consultant*** must give immediate attention to these changes so there will be a minimum of delay during construction. The above and foregoing is not to be construed as a limitation of the ***Owner's*** right to seek recovery of damages for negligence on the part of the ***Consultant*** herein.

4.2.3 Should the ***Contract Administrator*** find it desirable to have previously satisfactorily completed and accepted work product or parts thereof revised, the ***Consultant*** shall make such revisions if requested and directed by the ***Contract Administrator*** in writing. This work will be paid for as provided in Article 4.3.

4.3 Extra Work

4.3.1 If the ***Consultant*** is of the opinion that any work it has been directed to perform is beyond the scope of this Agreement, and constitutes "Extra Work", it shall promptly notify the ***Contract Administrator*** in writing to that effect. In the event that the ***Contract Administrator*** determines that such work does constitute "Extra Work", the ***Owner*** will provide extra compensation to the ***Consultant*** upon the basis of actual costs plus a fixed fee amount, or at a negotiated lump sum. Unless written approval for "Extra Work" has been secured in advance from the ***Contract Administrator***, and the Iowa DOT and the FHWA (when applicable) concurs, no claims will be allowed. However, the ***Owner*** shall have benefit of the service rendered.

4.4 Progress Meetings

4.4.1 From time to time as the work progresses, conferences will be held at mutually convenient locations at the request of the ***Contract Administrator*** to discuss details of the design and progress of the work. The ***Consultant*** shall prepare and present such information and studies as may be pertinent and necessary or as may be requested by the ***Contract Administrator***, to enable the ***Contract Administrator*** to pass judgment on the features and progress of the work.

4.5 Additional Plans

4.5.1 At the request of the ***Contract Administrator***, the ***Consultant*** shall furnish sufficient prints of plans or other data in such detail as may be required, for the purposes of review of details and for plan-in-hand and field check inspections.

4.6 Termination of Agreement

4.6.1 In the event of the death of any member or partner of the ***Consultant's*** firm, the surviving members shall complete the work, unless otherwise mutually agreed upon by the ***Owner*** and the survivors.

4.6.2 The right is reserved by the ***Owner*** to terminate this Agreement at any time upon not less than thirty (30) days' written notice to the ***Consultant***.

4.6.3 In the event the Agreement is terminated by the ***Owner*** without fault on the part of the ***Consultant***, the ***Consultant*** shall be paid for the reasonable and necessary work performed or services rendered and delivered up to the effective date or time of termination. The value of the work performed and services rendered and delivered, and the amount to be paid shall be mutually satisfactory to the ***Contract Administrator*** and to the ***Consultant***. The ***Consultant*** shall be paid a portion of the fixed fee, plus actual costs. The portion of the fixed fee shall be based on the ratio of the actual costs incurred to the estimated actual costs contained in Attachment C. Actual costs to be reimbursed shall be determined by audit of such costs to the date established by the ***Contract Administrator*** in the termination notice, except that actual costs to be reimbursed shall not exceed the Estimated Actual costs, plus any authorized contingency.

4.6.4 In the event the Agreement is terminated by the ***Owner*** for fault on the part of the ***Consultant***, the ***Consultant*** shall be paid only for work satisfactorily performed and delivered to the ***Contract Administrator*** up to the date established by the termination notice. After audit of the ***Consultant's*** actual costs to the date established by the ***Contract Administrator*** in the termination notice and after determination by the ***Contract Administrator*** of the amount of work satisfactorily performed, the ***Contract Administrator*** shall determine the amount to be paid to the ***Consultant***.

4.6.5 The right is reserved by the ***Owner*** to suspend this Agreement at any time. The ***Contract Administrator*** may effect such suspension by giving the ***Consultant*** written notice, and it will be effective as of the date established in the suspension notice. Payment for the ***Consultant's*** services will be made by the ***Owner*** to the date of such suspension, in accordance with paragraph **4.6.3** above.

4.6.6 Should the ***Owner*** wish to reinstate the work after notice of suspension, such reinstatement may be accomplished by thirty (30) days' written notice within a period of one year after such suspension, unless this period is extended by written consent of the ***Consultant***.

4.6.7 This Agreement will be considered completed when the construction of the project has progressed sufficiently to make it clear that the construction can be completed without further revisions in that work, or if the ***Consultant*** is released prior to such time by written notice from the ***Contract Administrator***.

4.7 Extension of Time

4.7.1 The time for completion of each phase of this Agreement shall not be extended because of any delay attributed to the ***Consultant***, but may be extended by the ***Contract Administrator*** in the event of a delay attributed to the ***Owner*** or the ***Contract Administrator***, or because of unavoidable delays caused by an act of God, war, government actions, or similar causes beyond the reasonable control of the ***Consultant***.

4.8 Mediation

4.8.1 In an effort to resolve any conflicts that arise during the design or construction of the project or following the completion of the project, the ***Owner*** and the ***Consultant*** agree that all disputes between them arising out of or relating to this Agreement shall be submitted to non-binding mediation unless the parties mutually agree otherwise. The ***Owner*** and the ***Consultant*** further agree to include a similar mediation provision in all agreements with independent contractors and ***Consultants*** retained for the project and to require all independent contractors and ***Consultants*** also to include a similar mediation provision in all agreements with subcontractors, subconsultants, suppliers or fabricators so retained, thereby providing for mediation as the primary method for dispute resolution between the parties to those agreements.

4.9 Arbitration

4.9.1 In the event the parties to this Agreement are unable to reach a settlement of any dispute arising out of the services under this Agreement in accordance with Paragraph 4.8, then such disputes shall be settled by binding arbitration by an arbitrator to be mutually agreed upon by the parties, and pursuant to the arbitration procedures set out in Iowa Code Chapter 679A. Any arbitration pursuant to this paragraph or mediation pursuant to Paragraph 4.8.1 shall occur in [county name] County, Iowa.

4.10 Responsibility For Claims And Liability

4.10.1 The ***Consultant*** shall defend, indemnify and save harmless the Owner, the Iowa Department of Transportation, the State of Iowa, its agencies, agents, employees and assignees and the Federal Government from all claims and liabilities due to design error, omission or negligent act of the ***Consultant***, its members, agents, stockholders, or employees in connection with performance of this Agreement.

4.11 Non-Raiding Clause

4.11.1 The ***Consultant*** shall not engage the services of any person or persons, then in the employment of the ***Owner***, for work covered by this Agreement without the written consent of the employer of such person.

4.12 General Compliance With Laws

4.12.1 The ***Consultant*** shall comply with all Federal, State and Local laws and ordinances applicable to the work.

4.13 Subletting, Assignment Or Transfer

4.13.1 Subletting, assignment, or transfer of all or part of the interest of the ***Consultant*** in this Agreement is prohibited unless written consent is obtained from the ***Contract Administrator*** and the Iowa DOT and the FHWA (when applicable) concurs.

4.14 Forbidding Use of Outside Agents

4.14.1 The ***Consultant*** warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the ***Consultant***, to solicit or secure this Agreement, and that it has not paid or agreed to pay any company or person, other than bona fide employees working solely for the ***Consultant***, any fee, commission, percentage, brokerage fee, gift, or any other consideration contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the ***Owner*** shall have the right to annul the Agreement without liability, or in its discretion to deduct from the Agreement price or consideration or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, or counterpart fee.

4.15 *Consultant's* Endorsement On Plans

4.15.1 The ***Consultant*** shall endorse the completed computations prepared under this Agreement, and shall affix thereto the seal of a licensed professional engineer or architect, licensed to practice in the State of Iowa, in accordance with the current Code of Iowa.

4.16 Compliance With Title 49, Code Of Federal Regulations

4.16.1 During the performance of this Agreement, the ***Consultant*** and its assignees and successors in interest agree as follows:

4.16.1.1 Compliance with Regulations

4.16.1.1.1 The ***Consultant*** will comply with the regulations of the U.S. Department of Transportation, relative to nondiscrimination in federally assisted programs of the U.S. Department of Transportation (Title 49, Code of Federal Regulations, Part 21, hereinafter referred to as the "Regulations"), which are herein incorporated by reference and made a part of this Agreement.

4.16.1.2 Nondiscrimination

4.16.1.2.1 The ***Consultant***, with regard to the work performed by it, will not discriminate on the grounds of race, religion, age, physical disability, color, sex or national origin in the selection and retention of subconsultants, including procurement of materials and leases of equipment. The ***Consultant*** will not participate, either directly or indirectly, in the discrimination prohibited by Section 21.5 of the

Regulations, including employment practices when the Agreement covers a program set forth in the Regulations.

4.16.1.3 Solicitation for Subconsultants, Including Procurement of Materials and Equipment

4.16.1.3.1 In all solicitations, either by competitive bidding or negotiation made by the ***Consultant*** for work to be performed under a subcontract, including procurement of materials or equipment, each potential subconsultant or supplier shall be notified by the ***Consultant*** of the ***Consultant's*** obligation under this contract and the regulations relative to nondiscrimination on the grounds of race, religion, age, physical disability, sex, or national origin.

4.16.1.4 Disadvantaged Business Enterprises

4.16.1.4.1 The ***Consultant*** or its subconsultants agree(s) to ensure that disadvantaged business enterprises (DBEs) as defined in 49 CFR Part 26 have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds provided under this Agreement. In this regard the ***Consultant*** and all of its subconsultants shall take all necessary and reasonable steps in compliance with the Iowa DOT DBE Program to ensure disadvantaged business enterprises have the maximum opportunity to compete for and perform contracts. The ***Consultant*** and their subconsultants shall not discriminate on the basis of race, religion, age, physical disability, color, sex or national origin in the award and performance of U.S. DOT assisted contracts. If, as a condition of assistance, the Iowa DOT has submitted to the U.S. DOT, or the ***Consultant*** has submitted to the Iowa DOT, and the U.S. DOT or Department has approved a disadvantaged business enterprise affirmative action program which the Iowa DOT and/or ***Consultant*** agrees(s) to carry out, this program(s) is incorporated into this Agreement by reference. This program shall be treated as a legal obligation and failure to carry out its terms shall be treated as a violation of this financial assistance agreement.

Upon notification to the ***Consultant*** of its failure to carry out the approved program, the ***Owner***, the Iowa DOT, and/or the U.S. DOT shall impose sanctions, which may include termination of the Agreement or other measures that may affect the ability of the ***Consultant*** to obtain future U.S. DOT financial assistance. The ***Consultant*** or any of its subconsultants are hereby advised that failure to fully comply with the Iowa Department of Transportation's DBE Program shall constitute a breach of contract and may result in termination of this Agreement or agreement(s) by the ***Owner*** or such remedy as the ***Owner*** deems appropriate. Refer to Article 4.6 of the Agreement.

4.16.1.5 Information and Reports

4.16.1.5.1 The ***Consultant*** will provide all information and reports required by the regulations, orders and instructions issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the ***Owner***, the Iowa DOT, or the FHWA, to be pertinent to ascertain compliance with regulations, orders and instructions. Where any information required of a ***Consultant*** is in the exclusive possession of another who fails or refuses to furnish this information, the ***Consultant*** shall so certify to the ***Owner***, the Iowa DOT, or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain information.

4.16.1.6 Sanctions for Noncompliance

4.16.1.6.1 In the event of the ***Consultant's*** noncompliance with the nondiscrimination provisions of this Agreement, the ***Owner*** shall impose such contract sanctions as it, the Iowa DOT, or the FHWA, may determine to be appropriate, including, but not limited to:

...1.6.1.1 Withholding of payments to the ***Consultant*** under the Agreement until the ***Consultant*** complies, and/or

...1.6.1.2 Cancellation, termination or suspension of the Agreement, in whole or in part.

4.16.1.7 Incorporation of Provisions

4.16.1.7.1 The ***Consultant*** will include the provisions of Article 4.16.1.1 through 4.16.1.6 of this Agreement in every subagreement, including procurements of materials and lease of equipment, unless exempt by the regulations, orders or instructions issued pursuant thereto. The ***Consultant*** will take such action

with respect to any subagreement or procurement as the ***Owner***, Iowa DOT, or FHWA may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event a ***Consultant*** becomes involved in, or is threatened with, litigation with a subconsultant or supplier as a result of such direction, the ***Consultant*** may request the ***Owner***, the Iowa DOT, or the Untied States to enter into such litigation to protect the interests of the ***Owner*** , the Iowa DOT, and the Unites States, respectively.

4.17 Access To Records

4.17.1 The ***Consultant*** is to maintain all books, documents, papers, accounting records and other evidence pertaining to this Agreement and to make such materials available at their respective offices at all reasonable times during the agreement period, and for three years from the date of final payment under the Agreement, for inspection and audit by the ***Owner***, Iowa DOT, FHWA, or any authorized representatives of the Federal Government; and copies thereof shall be furnished, if requested.

4.18 Iowa DOT and Federal Highway Administration Participation

4.18.1 The work under this Agreement shall be contingent upon and subject to the approval of the Iowa DOT and the Federal Highway Administration (if applicable). The Iowa DOT and the Federal Highway Administration shall have the right to participate in the conferences between the ***Consultant*** and the ***Owner*** and to participate in the review or examination of the work in progress.

4.19 Severability

If any section, provision or part of this Agreement shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the Agreement as a whole or any section, provision, or part thereof not adjudged invalid or unconstitutional.

4.20 Choice of Law and Form

The laws of the State of Iowa shall govern and determine all matters arising out of or in connection with this agreement without regard to the choice of law provisions of Iowa law. In the event any proceeding of a quasi-judicial or judicial nature is commenced in connection with this agreement, the exclusive jurisdiction for the proceeding shall be brought in the [county name] County District Court for the State of Iowa, [city name], Iowa. This provision shall not be construed as waiving any immunity to suit or liability including without limitation sovereign immunity in State or Federal court, which may be available to the Owner.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their proper officials thereunto duly authorized as of the dates below indicated.

[Consultant Name]

_____ Date: _____, _____
[Name of person signing for Consultant]
[Position of person signing for Consultant]

[Local Public Agency Name]

_____ Date: _____, _____
[Name of person signing for LPA]
[Position of person signing for LPA]

Iowa Department of Transportation
Accepted for FHWA Authorization*

By: _____ Date: _____, _____
[name of person signing for DOT]
[title of person signing for DOT]
[Name of Iowa DOT Office]

* The Iowa DOT is not a party to this agreement. However, by signing this agreement, the Iowa DOT is indicating the work proposed under this Agreement is acceptable for FHWA authorization of Federal funds.

ATTACHMENT A
Scope of Services

[Insert Scope of Services, to be developed jointly by the Owner and Consultant]

ATTACHMENT B
Specifications

[Insert Specifications for project deliverables, as developed by the Owner]

ATTACHMENT C (referenced from 3.1)
Fees and Payments - Cost Plus Fixed Fee

3.1.1 FEES AND PAYMENTS

3.1.1.1 Fees. For full and complete compensation for all work, materials, and services furnished under the terms of this Agreement, the ***Consultant*** shall be paid fees in the amounts of the ***Consultant's*** actual cost plus applicable fixed fee amount. ***Consultants'*** actual costs shall include payments to any subconsultants. The estimated actual costs and fixed fee are shown below and are itemized in Attachment [H]. The nature of engineering services is such that actual costs are not completely determinate. Therefore, it is possible that the ***Consultant's*** actual costs may exceed those shown in Attachment [H] and as shown below. A contingency amount has been established to provide for actual costs that exceed those estimated.

Estimated Actual Costs	$ [Insert Costs]
Fixed Fee [Prime Only]	$ [Insert Fee]
Contingency [Prime Only]	$ [Insert Contingency]
Maximum Amount Payable	$ [Insert Amount]

If at any time during the work the ***Consultant*** determines that its actual costs will exceed the estimated actual costs, thus necessitating the use of a contingency amount, it will promptly so notify the ***Contract Administrator*** in writing and describe what costs are causing the overrun and the reason. The ***Consultant*** shall not exceed the estimated actual costs without the prior written approval of the ***Contract Administrator*** and concurrence of the Iowa DOT and the FHWA (when applicable). The ***Owner*** or the Iowa DOT may audit the ***Consultant's*** cost records prior to authorizing the use of a contingency amount. The ***Consultant*** shall establish a procedure for comparing the actual costs incurred during the performance of the work to the estimated actual costs listed above.

The purpose is to monitor these two elements and thus provide for early identification of any potential for the actual costs exceeding the estimated actual costs. If the ***Consultant*** exceeds the estimated actual costs for any reason (other than that covered in Section 3.1.1.2.3) before the ***Contract Administrator*** is notified in writing, the ***Owner*** will have the right, at its discretion, to deny the use of the contingency amount.

The fixed fee amount will not be changed unless there is a substantial change in scope, character, or complexity of the services covered by this Agreement or the time schedule is changed by the ***Owner***. Any change in the fixed fee amount will be made by a Supplemental Agreement or Extra Work Order. The maximum amount payable under this Agreement is $ [Insert Amount], which is the sum of the above amounts. The maximum amount payable can not be exceeded except by Supplemental Agreement or Extra Work Order if the ***Consultant*** establishes there is a substantial change in scope, character, or complexity of the services covered by this Agreement, the ***Contract Administrator*** agrees, and the Iowa DOT and FHWA (when applicable) concurs. If at any time it is determined that a maximum amount payable will be or has been exceeded, the ***Consultant*** shall immediately so notify the ***Contract Administrator*** in writing. The maximum amount payable may be increased by a Supplemental Agreement or Extra Work Order, or this Agreement will be terminated, with the ***Owner*** having the right, at its discretion, to terminate this Agreement without payment of the amount exceeding the maximum amount payable. The ***Owner*** or the Iowa DOT may audit the ***Consultant's*** cost records prior to making a decision whether or not to increase the maximum amount payable.

3.1.1.2 Reimbursable Costs. Reimbursable costs are the actual costs incurred by the ***Consultant*** which are attributable to the specific work covered by this Agreement and allowable under the provisions of Title 48, Subchapter E., Part 30 (full cost accounting standards; when applicable), section 31.105 and Subpart 31.2 of the current Federal Acquisition Regulation. These include the following:

1. Salaries of the employees for time directly chargeable to work covered by the Agreement, and salaries of principals for time they are productively engaged in work necessary to fulfill the terms of the Agreement.

2. Direct non-salary costs incurred in fulfilling the terms of this Agreement. The ***Consultant*** will be required to submit a detailed listing of direct non-salary costs incurred and certify that such costs are not included in overhead expense pool. These costs may include travel and subsistence, reproductions, computer charges and materials and supplies.

3. The indirect costs (salary related expenses and general overhead costs) to the extent that they are properly allowable to the work covered by this Agreement. The ***Consultant*** has submitted to the ***Owner*** the following indirect costs as percentages of direct salary costs to be used provisionally for progress payments for work accomplished during the ***Consultant's*** current fiscal year: Salary related expenses are [Insert Amount]% of direct salary costs and general overhead costs are [Insert Amount]% of direct salary costs. Use of updated overhead percentage rates shall be requested by the ***Consultant*** after the close of each fiscal year and shall be used to update previous year invoices and subsequent year as a provisional rate for invoicing in order to more accurately reflect the cost of work during the previous and subsequent years. Any actual fiscal year or fiscal year's audited or unaudited indirect costs rates known by the ***Consultant*** shall be used in computing the final invoice statement. All unverified overhead rates shall have a schedule of computation supporting the proposed rate attached to the final bill. Prior to final payment for work completed under this Agreement all indirect cost rates shall be audited and adjusted to actual rates through the most recently completed fiscal year during which the work was actually accomplished. In the event that the work is completed in the current fiscal year, audited indirect cost rates for the most recently completed fiscal year may be applied also to work accomplished in the current fiscal year. If these new rates cause the estimated actual costs to be exceeded, the contingency amount will be used.

3.1.1.3 **Premium Overtime Pay.** Premium overtime pay (pay over normal hourly pay) shall not exceed 2 percent of the total direct salary cost without written authorization.

3.1.1.4 **Payments.** Monthly payments shall be made based on the percentage of work completed and substantiated by monthly progress reports. The report shall indicate the direct and indirect costs associated with the work completed during the month. The ***Contract Administrator*** will check such progress reports and payment will be made for the direct non-salary costs and salary and indirect costs during said month, plus a portion of the fixed fee. [The ***Owner*** shall retain from each monthly payment (Insert Amount)% of the amount due.]* The portion of the fixed fee to be paid will be in the proportion of the actual work completed and documented on the monthly progress reports.

Upon delivery and acceptance of all work contemplated under this Agreement, the ***Consultant*** shall submit one complete invoice statement of costs incurred and/or amounts earned. Payment of 100% of the total cost claimed [inclusive of retainage]* will be made upon receipt and review of such claim. Final audit will determine correctness of all invoiced costs and final payment will be based upon this audit. The ***Consultant*** agrees to reimburse the ***Owner*** for possible overpayment determined by final audit.

**Insert only if retainage is applicable to the contract*.

ATTACHMENT C (referenced from 3.1)
Fees and Payments - Lump Sum

3.1.1 FEES AND PAYMENTS

3.1.1.1 Fees. For full and complete compensation for all work, materials, and services furnished under the terms of this Agreement, the ***Consultant*** shall be paid fees on a lump sum basis and payment of this amount shall be considered as full and complete compensation for all work, materials and services furnished under the terms of this Agreement. The lump sum amount shall be $ [Insert Amount]. The estimated staff hours and fees are shown in this attachment.

The lump sum amount will not be changed unless there is a substantial change in the magnitude, scope, character, or complexity of the services from those covered in this Agreement. Any change in the lump sum amount will be by Supplemental Agreement.

3.1.1.2 Reimbursable Costs. Reimbursement of costs is limited to those that are allowable under the provisions of Title 48, Subchapter E, Section 31.105 and Subpart 31.2 of the current Federal Acquisition Regulation.

3.1.1.3 Premium Overtime Pay. Not applicable.

3.1.1.4 Payments. Monthly payments for work completed shall be based on the percentage of work completed and substantiated by monthly progress reports. The ***Contract Administrator*** will check such progress reports and payment will be made for the proportional amount of the lump sum fee. [The ***Owner*** shall retain from each monthly payment (Insert Amount)% of the amount due.]*

Upon completion, delivery, and acceptance of all work contemplated under this Agreement, the ***Consultant*** shall submit one complete invoice statement for the balance of the lump sum fee. Payment of 100% of the total cost claimed [inclusive of retainage]* will be made upon receipt and review of such claim. The ***Consultant*** agrees to reimburse the ***Owner*** for possible overpayment determined by final audit.

**Insert only if retainage is applicable to the contract*.

ATTACHMENT C (referenced from 3.1)
Fees and Payments - Specific Rate of Compensation

3.1.1 FEES AND PAYMENTS

3.1.1.1 Fees. For full and complete compensation for all work, materials, and services furnished under the terms of this Agreement, the ***Consultant*** shall be paid fees not to exceed the maximum amount payable under this Agreement of $ [Insert Amount].

The maximum amount payable will not be changed unless there is a substantial change in the magnitude, scope, character, or complexity of the services from those covered in this Agreement. Any change in the maximum amount payable will be by Supplemental Agreement.

The current schedule of billing rates (direct labor rate, overhead, and fixed fee) are set forth in the following rate schedule. The ***Consultant*** may submit for approval a revised rate schedule once during the contract period. This revision may include a revised overhead rate and revised direct labor rates. The revised rate schedule should be submitted to the ***Contract Administrator*** for approval. Upon the ***Contract Administrator's*** written approval and concurrence by the Iowa DOT and the FHWA (when applicable) it shall become a part of this Agreement.

3.1.1.2 Reimbursable Costs. The ***Consultant*** shall be reimbursed for direct non-salary costs, which are directly attributable and properly allocable to the work. The ***Consultant*** will be required to submit a detailed listing of direct non-salary costs incurred and certify that such costs are not included in the overhead expense pool. These costs may include travel and subsistence, reproductions, computer charges, and materials and supplies.

Reimbursement of costs is limited to those that are allowable under the provisions of Title 48, Subchapter E, Section 31.105 and Subpart 31.2 of the current Federal Acquisition Regulation.

3.1.1.3 Premium Overtime Pay. Not applicable.

3.1.1.4 Payments. Monthly payments for work completed shall be based on the services completed at the time of the billing and substantiated by monthly progress reports in a form that follows the specific rate schedule. The ***Contract Administrator*** will check such progress reports and payment will be made for the hours completed at each rate and for direct non-salary costs incurred during said month. [The ***Owner*** shall retain from each monthly payment (Insert Amount)% of the amount due.]*

Upon completion, delivery and acceptance of all work contemplated under this Agreement, the ***Consultant*** shall submit one complete invoice statement of costs incurred and/or amounts earned. Payment of 100% of the total cost claimed [inclusive of retainage]* will be made upon receipt and review of such claim. The ***Consultant*** agrees to reimburse the ***Owner*** for possible overpayment determined by final audit.

**Insert only if retainage is applicable to the contract*.

[Attach Fee Schedule].

ATTACHMENT C (referenced from 3.1)
Fees and Payments - Unit Price

3.1.1 FEES AND PAYMENTS

3.1.1.1 Fees. For full and complete compensation for all work, materials, and services furnished under the terms of this Agreement, the ***Consultant*** shall be paid fees on a unit price basis in accordance with the following fee schedule. Maximum amount payable is the total cost of $ [Insert Amount].

The maximum amount payable will not be changed unless there is substantial change in the magnitude, scope, character, or complexity of the services from those covered in this Agreement. Any change in the maximum amount payable will be by Supplemental Agreement.

A contingency amount of $ [Insert Amount] has been established for this Agreement and is included in the maximum amount payable. If needed, The ***Consultant*** shall submit a written request for use of the contingency to the ***Contract Administrator***. Written approval by the ***Contract Administrator*** and concurrence by the Iowa DOT and FHWA (when applicable) are needed prior to usage of the contingency amount.

3.1.1.2 Reimbursable Costs. Reimbursement of costs is limited to those that are allowable under the provisions of Title 48, Subchapter E, Section 31.105 and Subpart 31.2 of the current Federal Acquisition Regulation.

3.1.1.3 Premium Overtime Pay. Not applicable.

3.1.1.4 Payments. Monthly payments for work completed shall be based on the services completed at the time of billing and substantiated by monthly progress reports in a form that follows unit prices in fee schedule. The ***Contract Administrator*** will check such progress reports and payment will be made for the unit amounts completed. [The ***Owner*** shall retain from each monthly payment (Insert Amount)% of the amount due.]*

Upon completion, delivery and acceptance of all work contemplated under this Agreement, the ***Consultant*** shall submit one complete invoice statement of costs incurred and/or amounts earned. Payment of 100% of the total cost claimed [inclusive of retainage]* will be made upon receipt and review of such claim. The ***Consultant*** agrees to reimburse the ***Owner*** for possible overpayment determined by final audit.

**Insert only if retainage is applicable to the contract*.

[Attach Fee Schedule].

ATTACHMENT C (referenced from 3.1)
Fees and Payments - Fixed Overhead Rate

3.1.1 FEES AND PAYMENTS

3.1.1.1 Fees. For full and complete compensation for all work, materials, and services furnished under the terms of this Agreement, the ***Consultant*** shall be paid fees in the amounts of the ***Consultant's*** actual cost plus applicable fixed fee amount. ***Consultants'*** actual costs shall include payments to any subconsultants. The estimated actual costs and fixed fee are shown below and are itemized in Attachment [H]. The nature of engineering services is such that actual costs are not completely determinate. Therefore, it is possible that the ***Consultant's*** actual costs may exceed those shown in Attachment [H] and as shown below. A contingency amount has been established to provide for actual costs that exceed those estimated.

Estimated Actual Costs	$ [Insert Costs]
Fixed Fee [Prime Only]	$ [Insert Fee]
Contingency [Prime Only]	$ [Insert Contingency]
Maximum Amount Payable	$ [Insert Amount]

If at any time during the work the ***Consultant*** determines that its actual costs will exceed the estimated actual costs, thus necessitating the use of a contingency amount, it will promptly so notify the ***Contract Administrator*** in writing and describe what costs are causing the overrun and the reason. The ***Consultant*** shall not exceed the estimated actual costs without the prior written approval of the ***Contract Administrator*** and concurrence of the Iowa DOT and the FHWA (when applicable). The ***Owner*** and the Iowa DOT may audit the ***Consultant's*** cost records prior to authorizing the use of a contingency amount. The ***Consultant*** shall establish a procedure for comparing the actual costs incurred during the performance of the work to the estimated actual costs listed above.

The purpose is to monitor these two elements and thus provide for early identification of any potential for the actual costs exceeding the estimated actual costs. If the ***Consultant*** exceeds the estimated actual costs for any reason (other than that covered in Section 3.1.1.2.3) before the ***Contract Administrator*** is notified in writing, the ***Owner*** will have the right, at its discretion, to deny the use of the contingency amount.

The fixed fee amount will not be changed unless there is a substantial change in scope, character, or complexity of the services covered by this Agreement or the time schedule is changed by the ***Owner***. Any change in the fixed fee amount will be made by a Supplemental Agreement or Extra Work Order. The maximum amount payable under this Agreement is $ [Insert Amount], which is the sum of the above amounts. The maximum amount payable can not be exceeded except by Supplemental Agreement or Extra Work Order if the ***Consultant*** establishes there is a substantial change in scope, character, or complexity of the services covered by this Agreement, the ***Contract Administrator*** agrees, and the Iowa DOT and the FHWA (when applicable) concurs. If at any time it is determined that a maximum amount payable will be or has been exceeded, the ***Consultant*** shall immediately so notify the ***Contract Administrator*** in writing. The maximum amount payable may be increased by a Supplemental Agreement or Extra Work Order, or this Agreement will be terminated, with the ***Owner*** having the right, at its discretion, to terminate this Agreement without payment of the amount exceeding the maximum amount payable. The ***Owner*** and the Iowa DOT may audit the ***Consultant's*** cost records prior to making a decision whether or not to increase the maximum amount payable.

3.1.1.2 Reimbursable Costs. Reimbursable costs are the actual costs incurred by the ***Consultant*** which are attributable to the specific work covered by this Agreement and allowable under the provisions of Title 48, Subchapter E., Part 30 (full cost accounting standards; when applicable), 31.105 and Subpart 31.2 of the current Federal Acquisition Regulation. These include the following:

1. Salaries of the employees for time directly chargeable to work covered by the Agreement, and salaries of principals for time they are productively engaged in work necessary to fulfill the terms of the Agreement.

2. Direct non-salary costs incurred in fulfilling the terms of this Agreement. The ***Consultant*** will be required to submit a detailed listing of direct non-salary costs incurred and certify that such costs are not included in overhead expense pool. These costs may include travel and subsistence, reproductions, computer charges and materials and supplies.

3. The indirect costs (salary-related expenses and general overhead costs) to the extent that they are properly allowable to the work covered by this Agreement. The ***Consultant*** has submitted to the ***Owner*** the following indirect costs as percentages of direct salary costs to be used for the duration of the contract: Salary-related expenses are [Insert %] of direct salary costs and general overhead costs are [Insert %] of direct salary costs, for a composite rate of [Insert %].

3.1.1.3 **Premium Overtime Pay.** Premium overtime pay (pay over normal hourly pay) shall not exceed 2 percent of the total direct salary cost without written authorization.

3.1.1.4 **Payments.** Monthly payments shall be made based on the percentage of work completed and substantiated by monthly progress reports. The report shall indicate the direct and indirect costs associated with the work completed during the month. The ***Contract Administrator*** will check such progress reports and payment will be made for the direct non-salary costs and salary and indirect costs during said month, plus a portion of the fixed fee. [The ***Owner*** shall retain from each monthly payment (Insert Amount)% of the amount due.]* The portion of the fixed fee to be paid will be in the proportion of the actual work completed and documented on the monthly progress reports.

Upon delivery and acceptance of all work contemplated under this Agreement, the ***Consultant*** shall submit one complete invoice statement of costs incurred and/or amounts earned. Payment of 100% of the total cost claimed [inclusive of retainage]* will be made upon receipt and review of such claim. Final audit will determine correctness of all invoiced costs and final payment will be based upon this audit. The ***Consultant*** agrees to reimburse the ***Owner*** for possible overpayment determined by final audit.

**Insert only if retainage is applicable to the contract*.

ATTACHMENT D
Certification Regarding Debarment, Suspension, and other Responsibility Matters – Primary Covered Transactions

Instructions for Certification

By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

1. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

2. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

3. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person" "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the definitions and coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.

5. The prospective primary participant agrees by submitting this proposal that should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

6. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, and other Responsibility Matters – Primary Covered Transactions

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State Antitrust statues or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application /proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

State of [Insert State]
[County Name] County

I [Insert Name], [Insert Title] of the [Insert Company Name] Company, being duly sworn (or under penalty of perjury under the laws of the United States and the State of Iowa) do hereby certify that the above statements are true and correct.

_____
(signature)

Subscribed and sworn to this _____ day of _____, _____.

ATTACHMENT E
Certification of Consultant

I hereby certify that I, [Insert Name] am the [Insert Title] and duly authorized representative of the firm of [Insert Company Name], whose address is [Insert Street Address], and that neither I nor the above firm here represented has:

(a) Employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above ***Consultant***) to solicit or secure this contract,

(b) Agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract, or

(c) Paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above ***Consultant***) any fee, contribution, donation or consideration of any kind for, or in connection with, procuring or carrying out the contract; except as here expressly stated (if any):

I acknowledge that this certificate is to be furnished to the Iowa Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation, in connection with this contract involving participation of Federal-aid highway funds, and is subject to applicable, State and Federal laws, both criminal and civil.

_____
(signature)

Made this _____ day of _____, _____.

ATTACHMENT F
Certification of Owner

I hereby certify that I, [Insert Name], am the [Insert Title] and the duly authorized representative of the Owner, and that the above consulting firm or its representative has not been required, directly or indirectly as an express or implied condition in connection with obtaining or carrying out this contract to:

(a) Employ or retain, or agree to employ or retain, any firm or person, or

(b) Pay, or agree to pay, to any firm, person, or organization, any fee, contribution, donation, or consideration of any kind; except as here expressly stated (if any):

I acknowledge that this certificate is to be furnished the Iowa DOT and the Federal Highway Administration, U.S. Department of Transportation, in connection with this contract involving participation of Federal-aid highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

_____
(signature)

Made this _____ day of _____, _____.

ATTACHMENT G
Page 1

Consultant Name
Consultant Address
Consultant Address

Cost Plus Fixed Fee Final Invoice

Date

Invoice No.
Invoice Period Covered
Consultant Job No.

Client Project No.
County
Client Project Description
Client Contract No.

	Contract Estimate	Cumulative To Date	Current Period
Labor Dollars (2002)			
Labor Dollars (2001)			
Labor Dollars (2000)			
Labor Dollars (1999)			
Overhead (2002)			
Overhead (2001)			
Overhead (2000)			
Overhead (1999)			
Direct Expenses			
Mileage			
Per Diem			
CADD			
Subconsultants (including authorized contingency)			
Name			
Name			
Name			
Subtotal			
Fixed Fee			
Authorized Contingency			
Total Authorized Amount			
Total Billed To Date			
Remaining Authorized Balance			
Unauthorized Contingency			
Prime			
Subconsultant Name			
Subconsultant Name			
Labor Hours (2002)			
Labor Hours (2001)			
Labor Hours (2000)			
Labor Hours (1999)			

ATTACHMENT G
Page 2

Cost Plus Fixed Fee Final Invoice Instructions

- Employee Labor Hours and Dollars: A final cumulative job cost report that shows a breakdown of labor by fiscal year, employee name, employee labor hours and employee labor rate is required. In lieu of a final job cost report, a summary of the aforementioned information is needed. The summary should be supported by monthly job cost detail.

- Overhead Rates: Overhead rates and labor dollars to which the overhead rates are applied should match the fiscal year in which the costs are incurred. Overhead rates applied to labor should be audit verified when available. When not available, proposed FAR adjusted rates for the fiscal year in which the labor is incurred should be used.

- Direct Expenses: A final cumulative job cost report that shows a breakdown of direct expenses by specific item (mileage, CADD, per diem, etc….) by fiscal year is required. Direct expense items charged should identify the number of units (miles, hours, prints, copies, feet, etc….) and the rate applied by fiscal year. In lieu of a final job cost report, a summary of the aforementioned information is needed. The summary should be supported by monthly job cost detail.

- Subconsultant: Final invoice requirements for subconsultants with cost plus fixed fee contracts are the same as the requirements for the prime consultant. It is the prime consultant's responsibility to assure such an invoice is acquired and attached to the prime's final invoice.

ATTACHMENT G
Page 3

Consultant Name
Consultant Address
Consultant Address

Specific Rate Final Invoice

Date

Invoice No.
Invoice Period Covered
Consultant Job No.

Client Project No.
County
Client Project Description
Client Contract No.

	Contract Estimate	Cumulative To Date	Current Period
Labor Dollars (2002)			
Labor Dollars (2001)			
Labor Dollars (2000)			
Labor Dollars (1999)			
Direct Expenses			
Mileage			
Per Diem			
CADD			
Subconsultants (including authorized contingency)			
Name			
Name			
Name			
Total			
Authorized Contingency			
Total Authorized Amount			
Total Billed To Date			
Remaining Authorized Balance			
Unauthorized Contingency			
Prime			
Subconsultant Name			
Subconsultant Name			
Labor Hours (2002)			
Labor Hours (2001)			
Labor Hours (2000)			
Labor Hours (1999)			

ATTACHMENT G
Page 4

Specific Rate Final Invoice Instructions

- Employee Labor Hours and Dollars: A final cumulative job cost report that shows a breakdown of labor by fiscal year, employee name, employee labor hours and employee labor rate is required. In lieu of a final job cost report, a summary of the aforementioned information is needed. The summary should be supported by monthly job cost detail.

- Direct Expenses: A final cumulative job cost report that shows a breakdown of direct expenses by specific item (mileage, CADD, per diem, etc….) by fiscal year is required. Direct expense items charged should identify the number of units (miles, hours, prints, copies, feet, etc….) and the rate applied by fiscal year. In lieu of a final job cost report, a summary of the aforementioned information is needed. The summary should be supported by monthly job cost detail.

- Subconsultant: Final invoice requirements for subconsultants with specific rate contracts are the same as the requirements for the prime consultant. It is the prime consultant's responsibility to assure such an invoice is acquired and attached to the prime's final invoice.

ATTACHMENT G
Page 5

Consultant Name
Consultant Address
Consultant Address

Cost Plus Fixed Free Progressive Invoice

Date

Invoice No.
Invoice Period Covered
Consultant Job No.

Client Project No.
County
Client Project Description
Client Contract No.

	Contract Estimate	Cumulative To Date	Current Period
Labor Dollars			
Overhead			
Overhead Adjustments			
Direct Expenses			
Mileage			
Per Diem			
CADD			
Subconsultants (including authorized contingency)			
Name			
Name			
Name			
Subtotal			
Fixed Fee			
Authorized Contingency			
Total Authorized Amount			
Total Billed To Date			
Remaining Authorized Balance			
Unauthorized Contingency			
Prime			
Subconsultant Name			
Subconsultant Name			
Labor Hours			

ATTACHMENT G
Page 6

Consultant Name
Consultant Address
Consultant Address

Lump Sum Invoice

Date

Invoice No.
Invoice Period Covered
Consultant Job No.

Client Project No.
County
Client Project Description
Client Contract No.

Total Lump Sum Amount
Percentage Completed
Total
Less Amount Previously Billed
Total Current Bill
Subconsultants
Name
Name
Name
Total

Current Labor Hours
Total Labor Hours Incurred To Date
Total Estimated Labor Hours

Note: When submitting a final invoice on a lump sum project, the final cumulative job cost report should be submitted with the final invoice.

ATTACHMENT G
Page 7

Consultant Name
Consultant Address
Consultant Address

Specific Rate Progressive Invoice

Date

Invoice No.
Invoice Period Covered
Consultant Job No.

Client Project No.
County
Client Project Description
Client Contract No.

	Contract Estimate	Cumulative To Date	Current Period
Labor Dollars			
Direct Expenses			
Mileage			
Per Diem			
CADD			
Subconsultants (including authorized contingency)			
Name			
Name			
Name			
Total			
Authorized Contingency			
Total Authorized Amount			
Total Billed To Date			
Remaining Authorized Balance			
Unauthorized Contingency			
Prime			
Subconsultant Name			
Subconsultant Name			
Labor Hours			

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: December 11, 2008
From:	Office of Local Systems	I.M. No. 3.310
Subject:	Federal-aid Participation in In-House Services	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures to receive Federal-aid reimbursement for the costs of project-related services performed by Local Public Agency (LPA) staff. Topics addressed include eligible costs and activities, submittal requirements, and the procedures for requesting, reviewing, and authorizing Federal funds for such use.

Eligibility

Eligible Costs

Federal funds may participate in the direct costs of salaries, wages, and related payroll expenses of LPA employees, but only for those costs incurred when the LPA's employees are directly engaged in eligible activities. Related payroll costs include travel, transportation, leave, holidays, social security, retirement, and other payroll benefits.

Federal funds may also participate in the associated indirect costs, provided such costs have been allocated to the Federal-aid project in accordance with an approved cost allocation plan that meets the requirements of 2 CFR 225 (previously OMB Circular A-87). Such cost allocation plans must be reviewed and approved on annual basis by the Iowa DOT. The FHWA may also elect to review the LPA's cost allocation plan. If reimbursement of indirect costs is desired, the LPA should contact the Administering Office for additional assistance.

Eligible Activities

Only project-related activities that directly contribute to the planning, design, development, or implementation of the project are eligible for Federal participation. These include the following:

1. Preliminary Engineering – This includes conceptual plans, planning or environmental studies, preliminary design, final design, and all other related design work necessary to advance a project to physical construction. Examples include preparation of surveys, environmental documents, plans, specifications, and estimates.

2. Construction Engineering – This includes supervision and inspection of construction activities; additional staking functions considered necessary for effective control of the construction operations; testing materials incorporated into construction; checking shop drawings; and measurements needed for the preparation of pay estimates.

3. Right-of-Way Acquisition Services – This includes all work associated with acquisition of property interests needed for the project. Examples include preparation of right-of-way plats, appraisals for parcel acquisitions, review of appraisals, preparation for and trial of condemnation cases, and furnishing of relocation advisory assistance.

4. Other Services – For projects that do not result in physical construction, this includes activities that are necessary for the development or implementation of the project. Examples include developing or preparing safety programs, feasibility studies, conceptual studies, or other planning documents.

   Note: This does not include services of LPA staff that perform general administrative work. For example, attendance at project meetings by managers or other administrative staff not directly involved in the development or implementation of the project would not be eligible.

Please note that neither final design activities nor acquisition of right-of-way may begin until after receipt of FHWA Environmental Concurrence, and if Federal participation in these costs will be requested, FHWA Authorization.

Submittal Requirements

An estimate of the in-house services costs must be submitted to the Administering Office when requesting Federal-aid participation for in-house services. The following information shall be included in the estimate:

1. Staff time (hours) for each phase of the work (e.g., survey, design, inspection, etc.). Staff time should be estimated separately for individual employees or classifications of employees.

2. Wage rates for each employee or classification of employee. Include supporting documentation that shows how the wage rates were calculated, including any payroll expenses that are part of the wage rate, such as IPERS, FICA, employee benefits, or other related payroll expenses.

3. Equipment usage and other design-related costs. Include supporting documentation to show how the estimated costs or cost rates were determined. Examples include: estimated CADD hours and rate, vehicle miles and rate, outside printing costs, etc.

Procedures

The necessary procedures to request, review and approve in-house services costs are summarized below:

1. The LPA submits a request for Federal-aid participation in in-house services to the Administering Office, including a cost estimate and all supporting documentation.

2. The Administering Office reviews the cost estimate and completeness of submittal. If the submittal is incomplete, the Administering Office works with the LPA to address any concerns.

3. The Administering Office requests a pre-audit from the Office of Finance (External Audits).

4. External Audits reviews the pre-audit request and either performs a pre-audit or notifies the Administering Office that the pre-audit has been waived. If a pre-audited is conducted, External Audits sends 2 copies of the pre-audit report to the Administering Office and 1 copy to Office of Finance (Project Accounting and Payables).

5. The Administering Office sends 1 copy of the pre-audit report (if completed) to the LPA. If the pre-audit report requires modifications of the LPA's submittal, the LPA must respond to the findings of the pre-audit report. The Administering Office will work with the LPA and External Audits until the LPA's request is acceptable.

6. Once the LPA's request is acceptable, the Administering Office requests FHWA authorization.

7. After FHWA authorization is received, the Administering Office notifies the LPA and provides the effective date of FHWA authorization. The Administering Office sends 1 copy of this notice to External Audits, Project Accounting and Payables, and the appropriate Metropolitan Planning Organization (MPO) or Regional Planning Affiliation (RPA).

8. After performing the in-house services, the LPA may submit periodic requests for reimbursement to the Administering Office.

9. The Administering Office reviews and processes the requests for reimbursement as appropriate.

10. Upon completion of the in-house services, the LPA notifies the Administering Office and requests final reimbursement for such costs.

11. The Administering Office requests a final audit from External Audits.

12. External Audits reviews the final audit request and either performs a final audit or notifies the Administering Office that the final audit has been waived. If a final audit was conducted, External Audits sends 2 copies of the final audit report to the Administering Office and 1 copy to Project Accounting and Payables.

13. The Administering Office provides a copy of the final audit report to the LPA. If additional reimbursement is due, the Administering Office processes the final reimbursement. If the final audit finds the LPA has been over-reimbursed, the Administering Office will request the Office of Finance, Financial Management and Reporting, to invoice the LPA for the appropriate Federal share or deduct this amount from the balance of Federal reimbursement that is due to the LPA for other project costs.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: June 18, 2010
From:	Office of Local Systems	I.M. No. 3.405
Subject:	Preliminary Plans	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for preparation, submittal, and review of preliminary plans for Local Public Agency (LPA) Federal-aid projects that will be let by the Iowa Department of Transportation (Iowa DOT). This I.M. also includes the following attachments:

Attachment A – Preliminary Plan Guidelines
Attachment B – Preliminary Plan Checklist
Attachment C – Preliminary Plan Process Flowchart

Note:
- If the project involves a bridge or culvert, refer also to I.M. 3.410, Preliminary Bridge or Culvert Plans.
- Projects funded with only Farm-to-Market or local funds do not require a preliminary plan review. However, if requested by the LPA, preliminary plans for such projects will be reviewed in accordance with the guidelines set forth in this I.M.

Preparation

Content and Format

Preliminary plans shall be prepared in accordance with Attachment A – Preliminary Plan Guidelines and Attachment B – Preliminary Plan Checklist. Attachment A provides general guidelines and instructions applicable for all types of projects. Attachment B provides a checklist of specific items that will be reviewed by the Iowa DOT Administering Office. The Iowa DOT strongly recommends that the LPA or its consultant use both these attachments to perform an internal plan review prior to submitting the project plans to the Iowa DOT.

Design Guidelines

For new or complete reconstruction projects, refer to either I.M. 3.205, Urban Design Guidelines for Federal-aid Projects, or I.M. 3.210, Rural Design Guidelines for Federal-aid Projects. For Resurfacing, Restoration, or Rehabilitation (3R) projects, refer to I.M. 3.214, 3R Guidelines.

Federal-aid projects that do not meet these guidelines will require a design exception. If the need for a design exception has been identified at the preliminary plan stage, the design exception request and supporting documentation should be submitted with the preliminary plans. For more information, refer to I.M. 3.218, Design Exception Process.

Even though the Iowa DOT does not review design criteria for projects funded with only Farm-to-Market or local funds, the Iowa DOT strongly recommends that LPAs properly document any design features that do not meet the current applicable AASHTO design guidelines.

Submittal

Timely submission of preliminary plans is important. All submittals shall be made to the Administering Office in accordance with I.M. 3.005, Project Development Submittal Dates and Information.

Electronic Plans

LPAs may submit plans electronically in Adobe Acrobat's Portable Document Format (PDF), provided the electronic file conforms to the File Specifications for Electronic Plan Submittals to the Iowa DOT. Do not submit paper copies if plans are submitted electronically. If the electronic file submitted does not conform to these specifications, the LPA shall either revise the file to meet the specifications or submit paper copies of the plans instead.

Due to e-mail file size limitations, the Iowa DOT recommends that electronic plans, and all other electronic submittals, be transmitted to the Iowa DOT using the submittal tools provided in the Transportation Project Management System (TPMS). To obtain access to TPMS, contact the Iowa County Engineer's Service Bureau at 515-244-0779. However, electronic plans may also be submitted via e-mail directly to the appropriate contact person in the Administering Office. In either case, the e-mail shall serve as the cover letter, and all other appropriate documentation shall be attached.

In addition to submitting preliminary plans to the Iowa DOT, preliminary plans should also be submitted to all utilities within the project limits or corridor. For more information, refer to I.M. 3.640, Utility Accommodation and Coordination.

Review

Plans submitted in conformance with this I.M. should be returned by the Administering Office in a timely manner with relatively few comments. If the plans do not conform to these guidelines, the review process will require more time and effort by the LPA and the Iowa DOT, which could delay the project letting.

The process for submittal, distribution, and review of project plans is illustrated in Attachment C – Preliminary Plan Process Flowchart. As the flowchart shows, if the project involves bridge or culvert that requires a hydraulic review, or requires work on an interstate or primary highway, the plans will need additional reviews by other Iowa DOT offices. Because these reviews may require additional time, early submittal of such plans is strongly encouraged.

After the Administering Office has provided comments to the LPA, a field review may be conducted, if requested by either party. Any additional comments from the Administering Office shall be sent in writing to the LPA after the review, and the LPA shall provide a written response to those comments. The LPA may provide a separate response or include the response as part of the Check Plan submittal.

Note: Federal-aid projects may not proceed to final design or acquire right-of-way until after FHWA Environmental Concurrence has been received. For more information, refer to Sections 4.1, 5.1, and 6.1 of the Federal-aid Project Development Guide.

Preliminary Plan Guidelines

For Local Public Agency (LPA) Projects Let by the Iowa Department of Transportation (Iowa DOT)

Plan Format

Use of the Iowa DOT plan format is strongly recommended; however, except where noted otherwise, use of the Iowa DOT standard plans and details is not required for LPA projects. Use of the Iowa DOT format promotes uniformity and consistency of project plans. This results in lower bid prices because most contractors that bid on projects let by the Iowa DOT are familiar with the Iowa DOT format. It also reduces the amount of effort, and consequently, the cost required to create a set of plans suitable for letting by the Iowa DOT.

Iowa DOT Standard Plans

The Iowa DOT strongly encourages use of its standard plans. When used, standard plans should not be included in the plan set, but instead shall be incorporated by reference.

All of the standard plans listed below may be used on any city or county project. These standard plans are available on-line in either MicroStation format or Adobe Acrobat's Portable Document Format (PDF). Where specific design problems require special solutions, the standard plans may be modified and included in the plans as a detail or detail sheet; however, the standard plan number and revision date shall be removed. Each type of standard plan is further described below.

The Standard Road Plans have been developed by the Iowa DOT Office of Design to show standardized design features, construction methods, and approved materials to be used in highway construction in the State of Iowa.

The Standard Culvert Plans have been developed by the Iowa DOT Office of Bridge and Structures. These standard plans include complete details for a variety sizes and configurations of Reinforced Concrete Box (RCB) culverts.

The Standard Bridge Plans are also provided by the Iowa DOT Office of Bridges and Structures. The Standard Bridge Plans most applicable to local agency projects have been grouped together on the County Bridge Standards Plans web page. These standard plans include complete details for continuous concrete slab bridges and pretensioned prestressed concrete beam bridges, in a variety of widths, lengths, and spans.

Iowa DOT Road Design Details

The Road Design Details are available on-line in either MicroStation or PDF format. The Road Design Details contain standard design and tabulation forms, notations, details, and detail sheets. Similar to the standard plans described above, if a Road Design Detail is modified, the number and revision date shall be removed. The types of details included in the Road Design Details are further described below:

Standard Tabulations (100 series) include various tabulations for design data, bid items, and supplementary information. If used, these tabulations and forms shall be inserted on the plan sheets.

Standard Notations (200 series) are standardized notes that may be inserted on the plans as part of the General Notes. Using the Standard Notations saves time in writing the General Notes and promotes uniformity. The General Notes should contain general project information only. Information specific to bid items should be shown in the Estimate Reference Information.

Design Detail Sheets (500 series) are complete plan sheets. They provide details for common roadway items such as drainage appurtenances, fencing, certain pavement or shoulder construction details, traffic barriers and associated appurtenances, and more. If a Design Detail Sheet is used, it shall be included as a separate sheet in the plan set. It shall not be incorporated by reference.

Typical Details (1000 to 9000 series) are individual details. They include details for typical sections, curbs, shoulders, medians, etc. If a Typical Detail is used, it shall be placed on a plan sheet. It shall not be incorporated by reference.

Preliminary Plan Checklist

For Local Public Agency (LPA) Projects Let by the Iowa Department of Transportation (Iowa DOT)

Project No.: _____ Date:_____ LPA or Consulting Firm: _____

Name of Designer:_____ Phone No.:_____ email: _____

Note: This checklist is not intended to cover all of the details, notes and information that may be necessary for acceptable preliminary plans. However, this checklist addresses the items where most questions or problems generally arise. *This checklist is requested, but not required with the preliminary plan submittal.*

GENERAL

☐ **Project Concept.** The proposed design criteria, improvements, and project limits are consistent with the scope and type of work shown in the approved Concept Statement for Local Systems Federal-aid Projects (Form 517001). Any significant changes to the project concept (e.g., proposed design elements, project limits, potential environmental impacts, type of work, etc.) shall be explained in the cover letter that accompanies the plans. For more information, refer to I.M. 3.105, Concept Statement Instructions.

☐ **Environmental Document Requirements.** If the approved environmental document (e.g., Section 4(f) statement, Environmental Assessment, or Environmental Impact Statement) specifies that certain conditions shall be met, or certain sensitive areas shall be avoided, the plans shall be consistent with these requirements.

☐ **Format.** Plans may be submitted in either electronic or paper format. If plans are submitted in electronic format, they shall conform to the File Specifications for Electronic Plan Submittals to the Iowa DOT. If plans are submitted in paper format, they shall be black or grayscale print on plain white paper.

☐ **Dimensions and Legibility.** Plans shall be submitted as single-sided, 11”x17” sheets. To ensure that all of the plan is printed accurately, the border widths (i.e., clear space between the edge of paper and printing on the plan) shall meet the following minimum dimensions: top and bottom = 1/4 in.; left and right = 5/8 in. All lettering and details on the 11”x17” plan sheets shall be legible when printed.

☐ **Preliminary Bridge or Culvert Plans.** Bridge or culvert plans shall also conform to the guidelines provided in I.M. 3.410, Preliminary Bridge or Culvert Plans.

TITLE SHEET

☐ **Preliminary Plans Stamp.** Preliminary plan submittals should be identified by using a red stamp, red pen, or other means, to mark the words “Preliminary Plans” on the designer’s certification block.

☐ **System Classification.** The roadway system classification shall be shown. The Systems Classification should be shown in large font near the center or upper middle part of the sheet. For county projects, use “Farm-to-Market System” for a project on a Farm-to-Market route or “Secondary Road System” for a project on a local route. For city projects, use “Urban Road System.” For projects located on the corporation line, use the system classification that is under the jurisdiction of the lead governmental agency.

☐ **Location Map.** A location map with a north arrow and major street names shall be shown. The location map should be located near the left or bottom left part of the sheet. The location map should also include a scale (or be noted as “Not to Scale”) and identify the project limits including the beginning and ending stations. If project divisions are used, their limits shall also be indicated, either on the location map or in a plan note.

☐ **Designer’s Certification Block.** The plans shall include a certification block and seal that complies with the appropriate sections or chapters of the Code of Iowa and the Iowa Administrative Code (IAC). The designers certification block should be shown near the bottom right part of the sheet. The certification block shall not be signed or sealed for the preliminary plan submittal.

☐ **LPA's Signature Block.** The plans shall include a signature block that includes the title of the appropriate LPA official(s) with a space for each official(s) signature and date. The LPA's signature block should be shown near the bottom right part of the sheet. The signature block shall not be signed for the preliminary plan submittal.

☐ **Index of Sheets.** An index listing all sheets included in the plans shall be shown. The index of sheets should be shown near the right or upper right part of the sheet. Sheets should generally be listed in the following order: Title sheet, typical sections, standard details, estimated quantities tabulation, estimate reference information, supplemental tabulations, plan and profile sheets, other detail sheets, and cross sections. Use of the Iowa DOT sheet numbering system as shown in the Iowa DOT Road Design Manual, Section 1E-2, is recommended. If used, it shall be used consistently.

☐ **Project Number.** The Iowa DOT project number shall be shown in at least one place on all plan sheets. Recommended placements for the title sheet and all other sheets include the middle left margin and the bottom right margin. For the title sheet, the project number should also be shown near the upper right corner or in the center (above or below the project title). Note:

- Usually, only one project number should be shown on the plans. However, if the plans will include more than one project, additional project numbers should be shown, along with a description of the limits of each project. In such cases, a separate entry in the Transportation Program Management System (TPMS) and a separate electronic bid item file will be required for each project.
- If a single project spans more than one jurisdiction (e.g., across county or city boundaries), the project number used should correspond to jurisdiction in which the project stationing begins (i.e., the westerly or southerly end of the project).
- If unsure about which project number or how many project numbers to use, contact the Administering Office for assistance.

☐ **LPA Name and Project Location.** The name of the city or county shall be shown in at least one location on all plan sheets. Recommended placement is on the bottom left margin. On the title sheet, the name of the city or county and a brief description of the project location shall also be shown, preferably in the center part of the sheet. The description shall include the route or street name, plus the beginning and ending points of the project. Beginning and ending points shall be identified by a cross street, feature crossed, corporation limits, or some other feature that can be located on a map. If multiple routes or streets are included in the project, list each separately. For a Federal-aid project, the description on the plans shall be consistent with description for the project in the Statewide Transportation Improvement Program (STIP) and in TPMS Development.

☐ **Letting Date.** A space or a box for the project letting date shall be shown, preferably on upper left margin of sheet. If the letting date is known, the appropriate date may be shown in the box or space provided.

☐ **FHWA Structure Number.** If the project involves a bridge, the FHWA structure number shall be shown, preferably on or near the location map that shows the location of the bridge. Bridges are defined as any structure with a clear opening greater than 20 feet, as measured along the centerline of the roadway.

TYPICAL SECTION SHEETS

☐ **Dimensions and Slopes**. Proposed cross section elements shall be detailed with adequate horizontal and vertical dimensions. Pavement slopes, cut slopes, and fill slopes shall also be specified.

☐ **Materials Specified.** The type and thickness of surface, base and subbase materials for pavements, shoulders, sidewalks, or trails shall be shown.

☐ **Number of Typical Sections.** Separate typical sections for each significantly different type of cross section found on the project shall be shown. Use separate typical sections to show differences in the number of lanes, pavement types, pavement thicknesses, curb and gutter, sidewalk, or recreational trails.

☐ **Station Ranges.** If more than one typical section is used, the applicable stationing ranges shall be labeled for each. If the project contains more than one plan division, the applicable division(s) for each typical section should be noted.

☐ **Existing Features.** For projects that involve widening, milling, resurfacing, or other modifications to the existing pavement and / or shoulder; the type, thickness, and width of existing pavement and / or shoulder structure should be shown on the typical cross section.

PLAN AND/OR PROFILE SHEETS

☐ **Existing Features.** The plans should show the location of existing topographical features (e.g., existing pavement, structures, buildings, etc.).

☐ **North Arrow.** A North arrow shall be shown on all plan sheets.

☐ **Scale.** All plan and profile sheets shall show a horizontal scale. Profile sheets shall also show a vertical scale.

☐ **Proposed Right-of-Way (ROW).** If the project involves ROW acquisitions, permanent easements, or temporary easements, the proposed right-of-way lines, easement lines, property lines, parcel numbers, and property owners shall be shown. For projects involving several ROW acquisitions or easements, use of separate ROW sheets is recommended.

☐ **Existing ROW.** Existing ROW lines shall be shown.

☐ **Profiles.** The vertical profile data shall be shown, including the percent grade, vertical curve length, K factor, stopping sight distance (SSD), and design speed. The point of vertical curvature (P.V.C.), point of vertical tangency (P.V.T.), and point of vertical intersection (P.V.I.) stations and elevations shall be labeled.

☐ **Benchmarks**. List the type, location, and elevation of each benchmark. This information may be listed on a separate sheet if necessary.

☐ **Alignments.** The horizontal curve data shall be shown, including the point of intersection (P.I.) station, curve length, radius or degree of curvature, tangent length, and delta angle. The point of curvature (P.C.), and point of tangency (P.T.) stations should also be shown.

☐ **Utilities**. All known utility facilities within or immediately adjacent to the project limits shall be shown, including the approximate location of such facilities and the name of the utility company. For more information, refer to I.M. 3.640, Utility Accommodation and Coordination.

☐ **Railroad (RR) Crossings**. All RR crossings within or immediately adjacent to the project limits shall be shown, including the RR property lines and the name of railroad company. This information shall be included anytime the Contractor will be required to gain access or perform work on the RR right-of-way or within 25 feet of the centerline of the outermost RR track, even if the RR facilities are not directly impacted by the project. For more information, refer to I.M. 3.670, Work on Railroad Right-of-Way.

TRAFFIC SIGNAL SHEETS

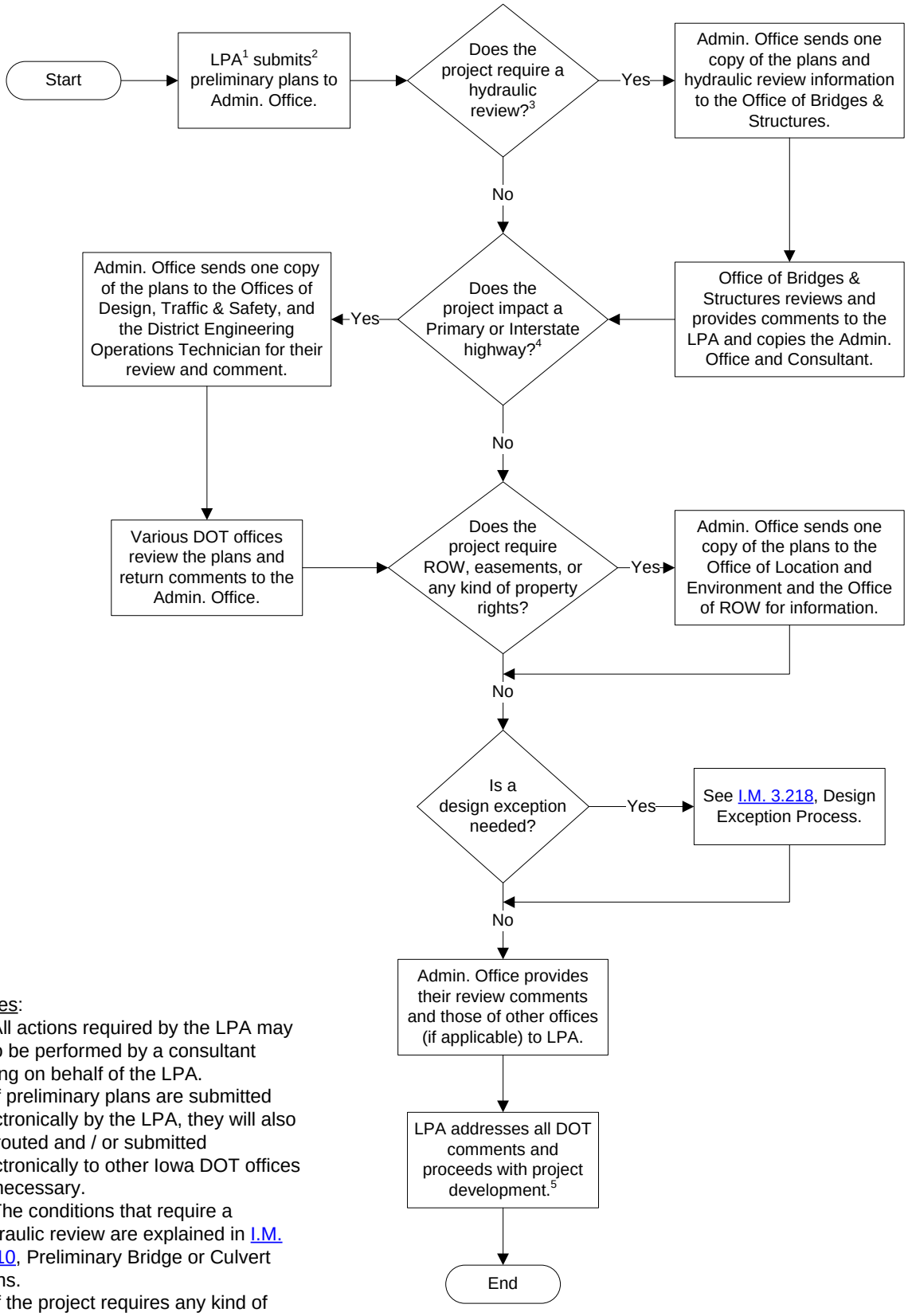
☐ **Scale.** Drawings shall be of sufficient scale to show the necessary details. A 1”=20’ scale is recommended.

☐ **Pavement Markings Details.** Pavement markings, including lane lines, stop bars, crosswalks, symbols, and legends should be shown.

☐ **Signal Details.** Signal pole, signal head, mast arm, and detector loops locations should be shown.

☐ **Roadway Details.** Edges of pavement, curbs, sidewalks, and pedestrian curb ramps should be shown.

Preliminary Plan Process Flowchart



Notes:
1) All actions required by the LPA may also be performed by a consultant acting on behalf of the LPA.
2) If preliminary plans are submitted electronically by the LPA, they will also be routed and / or submitted electronically to other Iowa DOT offices as necessary.
3) The conditions that require a hydraulic review are explained in I.M. 3.410, Preliminary Bridge or Culvert Plans.
4) If the project requires any kind of activity within the existing right-of-way of an Interstate or Primary Highway, this constitutes an “impact.”
5) Federal-aid projects may not proceed to final design or acquire right-of-way until after FHWA Environmental Concurrence has been received.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: June 18, 2010
From:	Office of Local Systems	I.M. No. 3.410
Subject:	Preliminary Bridge or Culvert Plans	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for preparation, review, and submittal of Local Public Agency (LPA) preliminary bridge or culvert plans for projects that will be let by the Iowa Department of Transportation (Iowa DOT). This I.M. also includes the following attachments:

Attachment A – Flood Insurance Studies
Attachment B – Iowa DNR Floodplain Regulations
Attachment C – Instructions for Completing the Form 1-E
Attachment D – Instructions for Completing the Risk Assessment Form

Note: This I.M. provides guidance specific to preliminary bridge or culvert plans. The guidance provided in I.M. 3.405, Preliminary Plans also applies. However, because of the differences between bridge or culvert plans and roadway plans, the guidance provided by this I.M. shall govern in case of a conflict.

Design Guidelines

The following guidelines are presented as an aid to preliminary bridge design. This I.M. does not contain all of the information needed to prepare a satisfactory preliminary bridge or culvert design. Therefore, it is essential for LPAs to use a licensed professional engineer, competent in hydrologic and hydraulic analysis, to design preliminary bridge or culvert plans.

Iowa DOT Guidelines for Preliminary Design of Bridges and Culverts

The Iowa DOT Office of Bridge and Structures (OBS) provides a document titled, Guidelines for Preliminary Design of Bridges and Culverts, referred to hereinafter simply as the “Iowa DOT Guidelines”. This document provides extensive guidance on nearly all aspects of preliminary design for bridge or culvert projects. LPA designers shall use the Iowa DOT Guidelines. In general, this I.M. will not duplicate guidance already contained in the Iowa DOT Guidelines, but instead will reference the Iowa DOT Guidelines where appropriate.

Selection of Design Flood and Clearances for Stream Crossings

A stream crossing consists of both the bridge and the roadway approaches. Stream crossings on high traffic volume or emergency access roads should generally be designed to a higher criteria such as a 50-year design flood. Where practical, clearance below the low superstructure should be three feet above design high water or one foot clearance above extreme high water, whichever is greater. The approach roadways should generally be one foot above design high water. Some "extreme high water" elevations can be disregarded in setting the grade if they are so high as to be impractical to design for.

Table 1 below is provided for guidance primarily for rural county roads. The further you reduce your design flood frequency (e.g. from a 50-year to a 10-year flood), the lower the quality of service. The table lists minimums. Use the highest discharge that you feel you can justify.

Table 1 – Design Flood Guidelines for Rural County Roads

Project ADT	Frequency of Design Flood	Clearance [a]			
		Bridge [b]		Approach Roadway [c]	
		Large Streams (> 100 mi^2)	Other Streams	Large Streams (> 100 mi^2)	Other Streams
Land Access Roads	2 ± year	3' above Q_{50}	2' above Q_2	1' above Q_2	1' above Q_2
49	5 year	3' above Q_{50}	2' above Q_5	1' above Q_5	1' above Q_5
50 -99	10 ± year	3' above Q_{50}	2' above Q_{10}	1' above Q_{10}	1' above Q_{10}
100 - 399	25 ± year	3' above Q_{50}	3' above Q_{25}	1' above Q_{25}	1' above Q_{25}
≥ 400	50 ± year	3' above Q_{50}	3' above Q_{50}	1' above Q_{50}	1' above Q_{50}

Notes:

a) Clearances (freeboard) may be adjusted in some cases. See discussion below.
b) Bridge clearance is determined by natural flood elevation, not backwater elevation.
c) Approach roadway clearance will be determined using the bridge backwater elevation.

Clearance guidelines may be relaxed in those instances where it is impractical to provide recommended clearance because of unreasonably high cost. For example, costs may be high if a grade raise would result in the replacement of a large amount of present pavement. Also, costs may be high if the bridge is in a developed area with commercial or residential property. These examples should be handled individually as special cases. Clearance guidelines may also be relaxed where the stream is not expected to carry significant amounts of ice or debris, such as on most smaller streams.

Low Water Stream Crossings

Low water stream crossings (fords, vented fords, and low bridges) will be reviewed on an individual basis. Iowa DOT does not have a policy on these types of crossings and therefore only reviews the hydraulic characteristics and does not approve or disapprove the plan.

If a low water stream crossing is proposed, the designer should refer to the guidance provided in the following Iowa Highway Research Board reports:

- Liability and Traffic Control Considerations for Low Water Stream Crossings, HR-218, April 1981.
- Design Manual for Low Water Stream Crossings, HR-247, October 1983.
- Low Water Stream Crossings: Design and Construction Recommendations, TR-453, December 2001.

In addition, for guidance concerning signing of low water stream crossings, refer to I.M. 2.230, Signing for Low Water Stream Crossings.

Plan Content and Format

The Iowa DOT recommends that LPA bridge or culvert projects follow the same format used by Iowa DOT bridge or culvert plans. For more information, refer to the checklists and sample plans for bridges and culverts included in the Iowa DOT Guidelines.

Hydraulic Review

Selection Criteria

Federally funded bridge or culvert projects will require a hydraulic review by the Iowa DOT Office of Bridges and Structures, if any of the following criteria are met:

1. The proposed structure is located in a community that has a completed detailed Flood Insurance Study. These communities are listed in Attachment A – Flood Insurance Studies.
2. The proposed structure has a smaller opening size than the existing structure.
3. The proposed structure is a culvert that is replacing an existing bridge.

For projects that meet any of the criteria listed above, submit the hydraulic review information to the Administering Office with the preliminary plans, as outlined in the "Submittal" section below.

The LPA may also request a hydraulic review, even if not required by the criteria shown above. However, such reviews will be conducted at the discretion of the Office of Bridges and Structures, and only as time permits.

Iowa DOT Review

The Office of Bridges and Structures will perform a general review the plans and hydraulic information. Hydraulic calculations will not be checked in detail, but given a cursory review to determine if the results and proposed structure appear to be reasonable. The Office of Bridges and Structures will return written comments to the LPA via e-mail or fax, and provide copies to the Administering Office and the consultant. Copies of hydraulic review documents will not be returned.

Reviews by Other Agencies

Bridge or culvert projects often involve impacts to waterways or water resources. As a result, there are several environmental reviews or permits by other State or Federal agencies that should be considered early in the project development process. Some of the more common reviews or permits are outlined below.

Floodplain Development Permits

The Iowa Department of Natural Resources (Iowa DNR) administers several permit programs that are designed to conserve and protect Iowa's water, recreational, and environmental resources. One such program is the Flood Plain Development Program. Under certain conditions, construction, operation, and maintenance of bridges, culverts, temporary stream crossings, road embankments, and channels changes may require a Flood Plain Development Permit. Projects requiring a permit must also meet certain design criteria, including design discharge, maximum backwater, and minimum freeboard clearances. For additional information, including a summary of the permit criteria and requirements, refer to Attachment B – Iowa DNR Floodplain Regulations.

Sovereign Lands Construction Permits

In accordance with 571 Iowa Administrative Code, Chapter 13, the Iowa DNR also regulates the use of sovereign lands and waters. These are State-owned lands and waters under the jurisdiction of the Iowa Natural Resource Commission, including Meandered Sovereign Lakes, Meandered Sovereign Rivers, State Forests, Wildlife Management Areas, State Parks, and State Preserves.

Bridge or culvert projects involving construction on or over sovereign lands or waters must be sent to the Iowa DNR Sovereign Lands Section for approval. For more information, including permit application forms, instructions, and listings and maps of sovereign lands and waters, refer to the Iowa DNR Sovereign Lands Construction Permits web page.

Flood Insurance Study (FIS) Requirements

The Iowa DNR works with the Federal Emergency Management Agency (FEMA) to administer the National Flood Insurance Program in Iowa. If a detailed Flood Insurance Study (FIS) has been approved for the community in which the project is located, any proposed projects in that community must meet the requirements of the FIS. If the FIS requirements cannot be met, a variance may be requested; or, if the LPA's designer believes the FIS is in error, the LPA can request to have the FIS corrected. For a list of communities with completed detailed Flood Insurance Studies, refer to Attachment A – Flood Insurance Studies.

Section 404 Permits

Section 404 of the Clean Water Act requires the U.S. Army Corps of Engineers (Corps) to review and approve any projects that involve placement of fill or dredged material in or around streams, wetlands or other aquatic resources. All bridge and culvert projects should be submitted to the Corps for review. The Clean Water Act and its implementing regulations place special emphasis on eliminating or reducing impacts to wetlands and

streams, so designers should strive to limit these types of impacts when possible. For more information, refer to I.M. 3.130, Section 404 Permit Process.

Submittal

All preliminary bridge or culvert plan submittals should be made to the Administering Office in accordance with I.M. 3.005, Project Development Submittal Dates and Information. Projects that require a hydraulic review should follow the Major Project schedule; however, early submittals are strongly encouraged. This will enable the Iowa DOT to provide comments in a timely manner, and it will allow other agencies such as the Iowa DNR and the Corps adequate time to review and process the applicable permits. The preliminary plan submittal shall include the following as a minimum:

1. A cover letter or e-mail that includes:
   a. Iowa DOT project number
   b. project location and description
   c. proposed letting date
   d. type of review requested
   e. list of the submittal contents

2. One copy of the preliminary plans, including:
   a. a bridge or culvert situation plan showing the type, size and location (TS&L) of the proposed structure(s)
   b. roadway plans for the approaches showing horizontal and vertical geometrics

If a hydraulic review is required or requested, the submittal shall include the following additional information:

3. One extra copy of the preliminary plans as noted above.

4. Hydraulic calculations.

   Include stage-discharge and backwater calculations. Computer output from hydraulic analysis software is preferred; however, hand calculations are also acceptable. For acceptable types of hydraulic analysis software, refer to the Iowa DOT Guidelines or contact the County and City Preliminary Hydraulic Review Engineer in the Office of Bridges and Structures for assistance.

5. A completed Form 1-E.

   The Request for Approval: Local Road System (Form 1-E) summarizes and documents data for the existing and proposed bridge or culvert. This form is required only for structures with a total clear span of 20 feet or more, but is recommended for all structures that require a hydraulic review in order to speed up the review process. For instructions and a sample form, refer to Attachment C – Instructions for Completing the Form 1-E.

6. A completed Risk Assessment Form.

   The Risk Assessment (Form 517002) is used to evaluate the risk and economics of proposed structures. It also provides the LPA with a good checklist of design items such as detours, flood data, upstream buildings, flood plain regulations, etc. This form is required only for structures with a total clear span of 20 feet or more, but is recommended for all structures that require a hydraulic review in order to speed up the review process. For instructions and a sample form, refer to Attachment D – Instructions for Completing the Risk Assessment Form.

7. Site photos, including the following views as a minimum:
   a. looking upstream
   b. looking downstream
   c. looking across the downstream valley
   d. looking at the existing bridge opening (include enough detail to identify the bridge type)
   e. looking at the existing bridge from the roadway surface

Flood Insurance Studies

The following table was obtained from the Flood Plain Permits Section of the Iowa Department of Natural Resources (Iowa DNR) in Des Moines. This table includes only those communities (cities and counties) in Iowa that have a completed detailed flood insurance study, as of April 12, 2010.

A project located in a community that has a Detailed Flood Insurance Study completed must have a hydraulic review by the Iowa DOT Office of Bridges & Structures. If a project is located in a city with a completed detailed flood insurance study, it still must be reviewed, even if the county in which the city is located does not have a completed detailed flood insurance study.

For additional information about flood insurance studies and flood plain mapping, refer to the Iowa DNR National Flood Insurance Program Coordination / Local Floodplain Programs web page.

Table 1 – List of Communities with Completed Detailed Flood Insurance Studies

COMMUNITY NAME	COUNTY NAME	FIRM DATE	DATE MAP LAST REVISED
ALGONA	KOSSUTH	6/1/1983	6/1/1983
AMES	STORY	1/2/1981	2/20/2008
ANKENY	POLK	5/16/1983	12/6/1999
ATLANTIC	CASS	8/5/1986	8/5/1986
AUDUBON	AUDUBON	8/15/1979	5/17/1989
AVOCA	POTTAWATTAMIE	12/16/1980	2/5/2005
BELLEVUE	JACKSON	10/15/1982	10/15/1982
BETTENDORF	SCOTT	6/1/1978	2/4/1998
BLACK HAWK COUNTY	BLACK HAWK	11/17/1982	11/17/1982
BREMER COUNTY	BREMER	7/16/1990	3/4/2008
BUFFALO	SCOTT	9/17/1980	9/17/1980
BURLINGTON	DES MOINES	7/2/1981	4/17/1985
CAMANCHE	CLINTON	12/18/1984	12/18/1984
CAMBRIDGE	STORY	6/15/1981	2/20/2008
CARROLL	CARROLL	3/19/1990	3/19/1990
CASCADE	DUBUQUE	4/2/1979	10/16/1992
CEDAR FALLS	BLACK HAWK	2/1/1985	2/1/1985
CEDAR RAPIDS	LINN	12/15/1982	3/18/1991
CENTER POINT	LINN	7/5/1982	7/5/1982
CENTRAL CITY	LINN	12/15/1982	12/15/1982
CHARLES CITY	FLOYD	2/2/1977	2/20/2008
CHELSEA	TAMA	12/16/1980	1/19/2006
CHEROKEE	CHEROKEE	1/2/1981	1/2/1981
CLARINDA	PAGE	7/2/1981	7/2/1981
CLEAR LAKE	CERRO GORDO	8/4/1987	8/4/1987
CLINTON	CLINTON	9/17/1980	9/14/1982
CLIVE	POLK	11/1/1979	10/16/1992
COGGON	LINN	7/16/1984	7/16/1984
COLUMBUS JUNCTION	LOUISA	2/6/1991	2/6/1991
CORALVILLE	JOHNSON	9/29/1978	2/16/2007
COUNCIL BLUFFS	POTTAWATTAMIE	6/15/1978	2/5/2005
CRESTON	UNION	4/4/1983	4/4/1983
DALLAS COUNTY	DALLAS	5/1/1994	12/4/2007
DAVENPORT	SCOTT	3/1/1978	2/4/1998
DENISON	CRAWFORD	5/17/1982	5/17/1982
DENVER	BREMER	7/16/1990	3/4/2008
DES MOINES	POLK	2/4/1981	7/15/1988

COMMUNITY NAME	COUNTY NAME	FIRM DATE	DATE MAP LAST REVISED
DES MOINES COUNTY	DES MOINES	2/17/1982	2/17/1982
DUBUQUE	DUBUQUE	5/15/1970	9/6/1989
DUBUQUE COUNTY	DUBUQUE	9/1/1983	6/2/1995
DUNKERTON	BLACK HAWK	1/16/1980	1/16/1980
DURANGO	DUBUQUE	7/16/1981	7/16/1981
DYERSVILLE	DUBUQUE	12/1/1977	6/2/1995
ELK RUN HEIGHTS	BLACK HAWK	8/1/1983	8/1/1983
ELKADER	CLAYTON	9/29/1978	7/16/1996
ELLIOTT	MONTGOMERY	5/17/1989	5/17/1989
EMERSON	MILLS	4/3/1984	12/17/1987
ESTHERVILLE	EMMET	10/14/1977	10/14/1977
EVANSDALE	BLACK HAWK	11/2/1977	4/16/1993
FAIRFAX	LINN	9/19/1984	9/19/1984
FAIRFIELD	JEFFERSON	2/18/1981	9/30/1994
FOREST CITY	WINNEBAGO	1/2/1981	4/16/1993
FORT MADISON	LEE	5/3/1982	5/3/1982
GLENWOOD	MILLS	5/17/1982	5/17/1982
GREENE	BUTLER	10/5/1982	10/15/1982
GRIMES	POLK	9/30/1983	4/30/1986
GRISWOLD	CASS	5/1/1987	5/18/1992
GUTTENBERG	CLAYTON	3/4/1980	9/5/1984
HAMBURG	FREMONT	8/4/1988	8/4/1988
HAMPTON	FRANKLIN	5/1/1979	5/1/1979
HARLAN	SHELBY	4/4/1983	4/4/1983
HASTINGS	MILLS	9/16/1982	9/16/1982
HAWARDEN	SIOUX	1/16/1981	1/16/1981
HIAWATHA	LINN	2/3/1982	2/3/1982
HILLS	JOHNSON	8/16/1988	2/16/2007
HUDSON	BLACK HAWK	1/16/1980	1/16/1980
HUMBOLDT	HUMBOLDT	5/19/1981	5/19/1981
IDA GROVE	IDA	9/5/1979	9/5/1979
INDEPENDENCE	BUCHANAN	5/16/1977	7/16/2008
IOWA CITY	JOHNSON	5/2/1977	2/16/2007
IRWIN	SHELBY	7/16/1981	7/16/1981
JANESVILLE	BLACK HAWK	7/16/1990	3/4/2008
JOHNSON COUNTY	JOHNSON	8/19/1985	2/16/2007
JOHNSTON	POLK	5/3/1982	7/19/2000
KEOKUK	LEE	3/1/1978	3/1/1978
KEOSAUQUA	VAN BUREN	9/5/1979	9/5/1979
KIRKMAN	SHELBY	5/17/1982	5/17/1982
LA PORTE CITY	BLACK HAWK	1/2/1981	3/16/2004
LE CLAIRE	SCOTT	8/15/1980	8/15/1980
LE MARS	PLYMOUTH	5/1/1978	5/1/1978
LEE COUNTY	LEE	6/15/1981	6/15/1981
LELAND	WINNEBAGO	1/2/1981	1/2/1981
LINN COUNTY	LINN	12/15/1982	12/15/1982
LOUISA COUNTY	LOUISA	2/6/1991	2/6/1991
MALVERN	MILLS	9/16/1982	9/16/1982
MANCHESTER	DELAWARE	10/15/1982	8/3/2009
MARENGO	IOWA	1/16/1980	1/7/1998
MARION	LINN	7/5/1982	7/5/1982

COMMUNITY NAME	COUNTY NAME	FIRM DATE	DATE MAP LAST REVISED
MARSHALLTOWN	MARSHALL	4/17/1984	4/17/1984
MASON CITY	CERRO GORDO	12/2/1980	3/16/1995
MAXWELL	STORY	2/15/1984	2/20/2008
MILLS COUNTY	MILLS	9/16/1982	8/3/1989
MINDEN	POTTAWATTAMIE	6/1/1982	2/5/2005
MISSOURI VALLEY	HARRISON	8/1/1977	8/1/1977
MONTICELLO	JONES	4/2/1979	4/2/1979
MONTROSE	LEE	2/18/1981	2/18/1981
MUSCATINE	MUSCATINE	1/5/1978	8/25/1981
MUSCATINE COUNTY	MUSCATINE	10/17/1986	10/17/1986
NASHUA	CHICKASAW	9/29/1978	9/29/1978
NEVADA	STORY	8/3/1981	2/20/2008
NEW HARTFORD	BUTLER	9/29/1986	9/29/1986
NEW VIENNA	DUBUQUE	10/18/1983	5/16/1994
NICHOLS	MUSCATINE	10/17/1986	10/17/1986
NORTH LIBERTY	JOHNSON	11/5/1986	2/16/2007
OAKLAND	POTTAWATTAMIE	8/3/1981	2/5/2005
OELWEIN	FAYETTE	7/4/1988	7/4/1988
OTTUMWA	WAPELLO	8/15/1980	8/15/1980
PACIFIC JUNCTION	MILLS	4/4/1983	3/16/1989
PALO	LINN	11/17/1982	11/17/1982
PLAINFIELD	BREMER	7/16/1990	3/4/2008
PLEASANT HILL	POLK	5/3/1982	10/8/1982
POLK COUNTY	POLK	3/1/1984	7/19/2000
POTTAWATTAMIE COUNTY	POTTAWATTAMIE	4/14/1983	2/5/2005
PRINCETON	SCOTT	11/1/1979	11/1/1979
RED OAK	MONTGOMERY	8/3/1981	1/3/1990
RIVERDALE	SCOTT	1/5/1978	11/13/1979
ROBINS	LINN	7/5/1982	7/5/1982
ROCK RAPIDS	LYON	8/1/1986	5/2/1991
SAGEVILLE	DUBUQUE	6/15/1984	6/15/1984
SCOTT COUNTY	SCOTT	6/1/1977	2/4/1998
SIOUX CITY	WOODBURY	8/1/1979	6/6/2001
SPENCER	CLAY	1/16/1981	4/19/1983
STORY CITY	STORY	1/16/1981	2/20/2008
STORY COUNTY	STORY	6/1/1983	2/20/2008
UNDERWOOD	POTTAWATTAMIE	6/1/1982	2/5/2005
URBANDALE	POLK	6/15/1979	7/19/2000
VINTON	BENTON	3/2/1981	6/3/2008
WATERLOO	BLACK HAWK	7/3/1985	7/3/1985
WAVERLY	BREMER	3/2/1981	3/4/2008
WEBSTER CITY	HAMILTON	8/1/1978	8/1/1978
WEST BRANCH	CEDAR	3/16/1983	3/16/1983
WEST DES MOINES	POLK	11/1/1979	2/16/2006
WEST LIBERTY	MUSCATINE	10/17/1986	10/17/1986
WINDSOR HEIGHTS	POLK	6/15/1979	10/16/1992
WOODBURY COUNTY	WOODBURY	6/17/1991	6/17/1991
WORTHINGTON	DUBUQUE	10/18/1983	10/18/1983

Iowa DNR Flood Plain Regulations

Introduction

The Iowa Department of Natural Resources (Iowa DNR) has published several rules in 567 Iowa Administrative Code (IAC) that regulate construction in flood plains of Iowa rivers and streams. These rules apply to construction of bridges, culverts, road embankments, channel changes, stream bank stabilization, impoundments (dams), and levees. Note: The guidance provided in this Attachment is only a summary. For additional details and guidance, refer to the text of the rules and to the Iowa DNR Flood Plain Development Permits web page.

Submittal Criteria

567 IAC 70 describes important introductory information concerning the regulations. Topics include definitions of terms, procedures and forms for requesting a flood plain development permit, procedures for review of permit applications, and procedures for appeals.

The following tables summarizes the types of projects that must be submitted to the Iowa DNR, as prescribed by 567 IAC 71.

Table 1 - When DNR Flood Plain Approval is Needed

Type of Project	Permit Needed if Drainage Area of Stream Is:	Chp. 71 Reference
Bridges, Culverts or Road Embankments that cross the stream:		
Rural Area	• 100 square miles or more.	71.1(1)
Urban Area	• 2 square miles or more.	71.1(3)
Road Embankments that do not cross the stream (rural area)	• 10 square miles or more if obstructing 3% or more of the channel or 15% or more of the flood plain.	71.1(2)
Channel Changes [(a)]		
Rural Area – not associated with road project	• 10 square miles or more.	71.2(1)a
Rural Area – associated with road project	• 10 square miles or more when: 1) more than 500 feet of channel is being altered, or 2) length of existing channel is reduced by more than 25%.	71.2(1)b
Urban Area	• 2 square miles or more.	71.2(2)
Protected Streams [(b)]	• Any drainage area requires a permit.	71.2(3)
Bank Stabilization		
Rural Area	• 100 square miles or more, or • 10 to 100 square miles if channel cross sectional area is being reduced by 3% or more.	71.9(1)a 71.9(1)b
Urban Area	• 100 square miles or more, or • 2 to 100 square miles if channel cross sectional area is being reduced by 3% or more.	71.9(2)a 71.9(2)b
Levees, Dams (Ponds), Flood Plain Excavation or Stockpiling	• See Iowa DNR rules or call the Iowa DNR to determine when approval is needed.	

Notes:

a) Channel changes are allowed on many streams, although there are restrictions on how much channel work can be done. Mitigation for environmental damage may be required for channel changes. The Iowa DNR may grant variances to their channel change criteria in some instances, as specified in 567 IAC 72.31.

b) Channel changes are usually prohibited on "Protected Streams." See 567 IAC 72.50 for a current list of protected streams.

Backwater and Freeboard Requirements

If a permit is required, the following tables provide a summary of the Iowa DNR backwater and freeboard requirements for bridges or culverts and associated channel changes, as prescribed in 567 IAC 72.

Table 2 – Bridges and Associated Channel Changes [(a)]

Damage Potential of Uses Affected [(b)]	Maximum Backwater		Minimum Freeboard	Chp. 72 Reference
	Q_{50} and less	Q_{100}		
Low	0.75 feet	1.5 feet	3.0 feet above Q_{50}	72.1(1)
Moderate	0.75 feet	1.0 feet	3.0 feet above Q_{50}	72.1(2)
High/Maximum	0.75 feet [(c)]	1.0 feet [(c)]	3.0 feet above Q_{50}	72.1(3)

Table 3 – Culverts and Associated Channel Changes [(a)]

Culvert Type	Maximum Backwater	Minimum Freeboard	Chp. 72 Reference
New culverts or culverts replacing bridges	(same as for bridges)	No minimum freeboard. Could be evaluated on case- by-case basis if debris and ice is a problem	72.1(5)
Culverts replacing culverts	Backwater of existing culvert, or maximum backwater allowed for bridges, whichever is greater.		

Notes:

a) These are applicable to channel changes on the floodway of any stream draining between 10 and 100 square miles when either more than 500 feet of the existing channel is being altered, or the length of the existing channel is being reduced by more than 25 percent.

b) Low Damage Potential --- Flood damage potential associated with all uses not classified as maximum, high, or moderate.

Moderate Damage Potential --- Flood damage potential associated with industrial and commercial buildings containing removable or non-damageable goods or material. Also, seasonal homes.

High Damage Potential --- Flood damage potential associated with residences, businesses, industrial and commercial buildings containing damageable goods.

Maximum Damage Potential --- Flood damage potential associated with buildings or uses which are vital to the public, or uses that could have adverse environmental impacts if flooded (e.g., hospitals, repositories for public records, storage of hazardous material).

c) Backwater cannot exceed, and must be minimized when backwater affects buildings, flood control works, etc., unless increase is mitigated.

Applying for a Permit

For additional guidance, forms, and instructions, refer to the Iowa DNR Flood Plain Development Permits web page.

Instructions for Completing the Form 1-E

The Request for Approval: Local Road System (Form 1-E) is available on-line in both Adobe Acrobat Portable Document Format (PDF) and Microsoft Word format. A sample Form 1-E is included after the instructions below.

Line 1 – Location:

Indicate the location within the section where the bridge or culvert is located. For example: "SW ¼ of NE ¼ of Section 12."

Line 3 – Project number:

Use the Iowa DOT project number, as assigned by the Administering Office.

Line 5 – Extreme high water:

This is an actual known elevation, not a calculated elevation such as in Line 29 for "Design high water." Accurate information here is very important. This information indicates how the existing structure performed during extreme floods and helps determine the bridge opening that will be needed.

If possible, include a high water mark at or near the typical valley section used for designing the bridge opening. On existing bridges, the downstream high water marks are more usable than high water marks on a pier or upstream from the bridge. Pier high water marks are effected by draw down. Upstream high water marks are effected by backwater caused by the present bridge. However, all are helpful in designing a new bridge.

Line 6 – Ordinary high water:

"Ordinary high water" on Form 1-E really means a typical high water that happens every year or two and no more often than every five years. Do not use long interval flood data here, such as a 50-year flood. Also, Line 6 should not be confused with the "Ordinary High Water" that is calculated for 404 Permits, as discussed in I.M. I.M. 3.130, 404 Permit Process. These are completely different uses of the same term, so do not confuse them.

Line 7 – Fall in stream:

Stream slope is more accurately determined using low water shots than using stream bed shots. Stream bed shots may contain blow holes and humps that can considerably distort the value. These holes and humps can be so gradual that they are not apparent until the survey information is plotted. Give the plan data if the stream is in a Drainage District and the last clean-out plans are available. The stream slope should not be confused with the Main Channel Slope (MCS). The MCS is based on the basin slope of the watershed, not the stream slope up and downstream of the structure.

Line 8 – Buildings in the floodplain:

This information is important especially if design high water elevation will be increased due to raising the road grade or reducing the hydraulic opening of the structure.

Line 12 and 13 – Ice and debris:

Potential for ice or debris in the stream may result in stronger piers than would otherwise be needed. In general, P-10 pile bent piers may be used in most of the bridges below 100 square mile drainage area. If ice and debris is a problem, stronger piers may be needed on even a much smaller drainage area. Bridges draining more than 100 square miles will generally need a stronger pier than the P-10 type. That could be a fully-encased P-10 pier or a river tee pier.

Line 29 and 30 – Design high water & road grade overflow:

Do not confuse design high water and extreme high water. Design high water is determined by taking a calculated flood discharge such as a Q_{25} and then using hydraulic analysis software to develop the water

surface elevation. Extreme high water is an actual high water elevation obtained from sources such as maintenance records or residents who have lived near the bridge site for many years.

Less important roads can be designed to pass a smaller and more frequent flood by allowing road grade overflow. Where the structure is over a large stream or over a stream where drift or ice could be a problem, adequate clearance for the bridge should be provided even though the approaches are over-topped by a relatively small flood. Bridges over these large streams should have clearance above the 50-year flood and, in most cases, should be above the extreme high water. Overflow bridges can be set with the low superstructure one foot above the design high water.

Road grade overflow as a design means of allowing shorter bridges becomes more attractive as road funds dwindle. The practicality of road grade overflow is an option that the engineer must evaluate. If road grade overflow is used, the plans should be so noted. This will help guard against a future grade raise without reanalyzing the hydraulics of the crossing.

Line 32 – Wing dikes:

Use wing dikes on all bridges with significant overbank flows. It is much better to have the end of a wing dike erode away than have the bridge berm damaged. For more information about wing dikes, refer to the Iowa DOT Guidelines for Preliminary Design of Bridges and Culverts.

Line 34 – Traffic count:

Use most recent and accurate traffic count available.

Back of Form I-E:

The "Valley Cross Section Data" on the back side of this form is very important and should be completed as accurately as possible. Always list the location of the valley section under the "Remarks" section. Read the instructions on taking a valley section. This information can also be provided from hydraulic analysis software printouts.

Form 621003E
11-02wd
(Form 1-E)

Iowa Department of Transportation

REQUEST FOR APPROVAL: LOCAL ROAD SYSTEM

LOCATION

1. County/City Appanoose Sec. 27, SW 1/4 Twp. 69N Range 28W
2. Over (River, Cr., Dr., Ditch) Little Creek Civil Twp. Johns
3. Road System ☐ Farm to Market ☒ Local Co. ☐ City Proj. No. L-92761--73-04 Sta. Pres. Struct. 103+80 Sta. Prop. Struct. 103+92.50 FHWA No. 042260

GENERAL DATA (FIELD)

4. Drainage area 23 sq. mi. Character Hilly Approx. length and width 4 mi. x 7 mi.
5. Extreme highwater: Date of occurrence June 1947 Information from John Doe (landowner)
(Elev. near site 994.0 Location 300 feet upstream) (Elev. Upstream 996.4
Location 1/2 mile) (Elev. Downstream 992.0 Location 2000 feet)
6. Ordinary highwater, Elev. 990.0 Ft. Occurs every 2 Years. Date of last occurrence 1992
7. Average low water: (Elev. At site 980.5 Average streambed 980.0) (Water elev. 980.5 On date of survey 07-21-93)
(Water elev. 981.7 Upstream 1320 ft.) (Water elev. 979.4 downstream 1250 ft.) Fall in stream 4.75 ft./mi.
8. List buildings in flood plain Corn crib Location 300 feet upstream Floor elev. 996.5
9. Is excessive local scour probable? No Probable max depth of scour below streambed N/A ft.
10. Is stream deepening or filling? Neither Approx. amount per year N/A
11. Is stream widening? No (Show direction, rate, and amount)
12. Does stream carry appreciable amount of ice? No Elev. of high ice N/A
13. Does stream carry appreciable amount of large driftwood? No
14. Bench Mark No. 10 spike in 32" diameter Boxelder tree - Sta. 103+25, 60' Rt. Elev. 1001.37

PRESENT OR OLD STRUCTURE (FIELD)

15. Superstructure: Type 80' x 20' Pony Truss with approaches Skew angle 0
16. Substructure: Type Wood abutments, concrete piers
17. Span lengths 15' - 50' - 15' Roadway width 20' Type of floor Concrete
18. Grade Elev. 996.0 Date built 1919 DOT Design No. N/A DOT File No. N/A
19. Condition of superstructure Poor
20. Condition of substructure Fair
21. Remarks: Contractor to remove and dispose.

PROPOSED STRUCTURE (OFFICE)

☐ RA
☐ LA

List fill if RBC or Pipe ____ ft.
Length of RCB or Pipe ____ ft.
Flow Line Left ____
Flow Line Right ____

22. Superstructure: Type Continuous concrete slab Skew Angle 0
23. Substructure: Type P10 piers, integral abutments
24. Span Lengths 30 feet Total bridge length 112'-6" ft.
25. Bridge rdwy. width 30 ft. Approach rdwy.: Width sh to sh 30 ft. Type of surfacing PCC
26. Type of railing concrete Type of floor concrete Type of curb concrete Class of loading HS20
27. Grade elev. 997.4 Abuts. footing elev. 991.2 -991 Pier footing elev. 976.0 Request soundings by DOT? No
28. Length and type of piling: Abuts. design after soundings Piers same
29. Design highwater: Elev. 992.6 ft Discharge Q = 4200 cfs; Bridge Waterway Area 838 Sq. ft.; Frequency 50 Yrs.
30. What provision is made for overflow? Non
31. Can channel be cleared to provide more waterway? No
32. Are wing dikes to be provided? Yes
33. Disposition of existing structure Remove
34. Traffic count By Iowa DOT VPD 275 Year of Count 1985
35. Remarks: ____

Notes for Approval Checked ____

County/City Appanoose

Project No. L-92761--73-04

Notes and Recommendations By Ima N. Gineer, P.E. City/County Engineer July 15, 2000 Date

VALLEY CROSS SECTION DATA

The submittal of a bridge type structure will include a right angle valley section. This section should be taken downstream from the crossing. It shall be noted whether it is an average section or a control section. Enough ground shots will be taken to outline the valley to an elevation well above extreme highwater. Special care will be taken to accurately outline the main channel including several streambed shots. Each shot should be identified; that is (FP) flood plain, (TB) top of bank, (ES) edge of stream, etc. Mannings equation roughness factors will be assigned each shot. Include site photos with this information.

REMARKS: Section taken 100' downstream from crossing. It is an average section. There is no control section downstream from the bridge that affects the bridge hydraulics.

Shot No.	Distance	Elevation	(N) Roughness	Remarks	Shot No.	Distance	Elevation	(N) Roughness	Remarks
1	0	997.0	0.07	FP	16	807	1000.9	0.07	FP
2	92	995.0			17	900	1003.0	0.07	FP
3	145	993.0			18				
4	275	991.0			19				
5	430	990.0	n=0.07 n=0.03	TB	20				
6	462	982.5		ES	21				
7	472	979.5		CL	22				
8	487	982.5		ES	23				
9	510	990.0	n=0.03 n=0.07	TB	24				
10	562	990.0		FP	25				
11	705	993.0		FP	26				
12	745	995.0		FP	27				
13					28				
14					29				
15					30				

PLAT OF DRAINAGE AREA

The drainage area is to be platted as completely and accurately as possible and to the largest practicable scale on a separate sheet. Use a definite scale, as 1" equals ¼, ½, 1, or 2 miles, and indicate what scale has been used. In addition to the outlines of the watershed, indicate the positions of the streams and, roughly, the character of the soil and the relative locations of the steep and flat portions. For most watersheds the information may be secured from the best existing data, soil maps, U.S.G.S. maps, and Bulletin No. 7-1.H.R.B. No plat is necessary if the area is listed in Bulletin Number 7.
REMARKS: _____

Give additional information by reference to marginal number on page 1 of this form.

Marginal No.	
5	Mr. Doe has been living in this area all of his life (62 years).

IMPORTANT NOTE

The information given on this form must in all cases be supplemented by complete plan and profile of the site, drawn to a convenient scale on a separate sheet.
The information as shown on this form is essential and must be supplied in detail before the plans can be approved. It may be necessary to return this form for correction unless the data supplied is complete

Instructions for Completing the Risk Assessment Form

The Risk Assessment for Bridges (Culverts) (Form 517002) is available on-line in both Adobe Acrobat Portable Document Format (PDF) format and Microsoft Word format. A sample Risk Assessment form is included after the instructions below.

1. Hydrologic Evaluation

A. Check United States Geological Survey (USGS) Water Resources Data.
B. Check Flood Insurance Studies, USGS reports, U.S. Army Corps of Engineer (Corps) projects, etc.
C. Estimate backwater for each (method used is optional). The backwater estimates should be based on the recommended structure. Method used to compute discharge is normally USGS Report 00-4233 or gaging station data if a gaging station is near the site.
D. List the other State or Federal permits or approvals that will be required, such as the Iowa DNR Floodplain Development Permit or Corps 404 Permit.

2. Property Related Evaluations

A. Low damage potential - no buildings.
Moderate damage potential - outbuildings.
High damage potential - residential/industrial.
B. For Flood Insurance Studies, all the information should be in the study. Contact the Iowa DNR for additional information.

3. Environmental Considerations

A. Check the Concept Statement and / or the appropriate environmental documents.

4. Highway and Bridge (Culvert) Related Evaluations

A. Check appropriate features if any.
B. Identify recurrence interval at over-topping (proposed road grade) if less than 500 year.

5. Miscellaneous Comments

A-E. Self explanatory.
F. Sample comments: “Bank stabilization may be required in the future - not recommended at this time,” or “Riprap on spur dikes not recommended on this project.”

6. Traffic Related Evaluations

A-C. Self explanatory.
D. Detour: If the road (structure) washed out, specify the length of the posted detour route.

7. Present Facility

A. Self explanatory.
B. At what discharge and recurrence interval does the existing road overtop?
C. Self explanatory. Most streams draining less than 500 square miles (1295 square km) are subject to flash flooding.

8. Alternatives

A. Self explanatory.
B. Discussion: If other alternatives were considered (e.g., longer bridge or shorter bridge or culvert), state in a general way and give reason for rejection. For example: “A culvert was considered but was rejected because of drift potential,” or “A longer bridge was considered but was not necessary hydraulically and was too costly.”
C. For most sites, further analysis would not be necessary.

Form 517002wd
11-02

Iowa Department of Transportation

RISK ASSESSMENT FOR BRIDGES (CULVERTS)
(For 20' Span and Longer Structures)

LOCATION

County Bremer Civil Twp. Jackson Sec. 35 Twp. 91N Range 14W

Over (River, Cr., Dr. Ditch) Cedar River Road No. US 218

Project No. F-218-8(20)--20-09 Design Number 189 FHWA No. ---

Assessment Prepared by B. Barrett Date 08-01-88

1. HYDROLOGIC EVALUATION

A. Nearest Gaging Station available on this stream: At Janesville, 2000' downstream (None ☐)

B. Are flood studies available on this stream: Yes ☐ No ☒

C. Flood Data:

Q_{10} 20,000 cfs Est. Bkwtr. 0 ft. Q_{25} 27,000 cfs Est. Bkwtr. 0 ft.

Q_{50} 36,200 cfs Est. Bkwtr. 0.1 ft. Q_{100} 41,000 cfs Est. Bkwtr. 0.1 ft.

Q_{500} 49,000 cfs or Overtopping _____ cfs (Whichever is lower)

Drainage Area 1661 sq. mi. Method Used to compute Q gage records

D. Does the crossing require outside agency approval? Yes ☒ No ☐

List Agencies: Iowa DNR, U.S. Army Corps of Engineers

2. PROPERTY RELATED EVALUATIONS

A. Damage potential: Low ☒ Moderate ☐ High ☐

List buildings in flood plain None Location _____

Floor Elevation _____

Upstream Land Use Timber

Anticipate any Change? Yes ☒ No ☐

If yes, describe anticipated change: _____

B. Any flood zoning? (Flood Insurance Studies (FIS), etc.) Yes ☒ No ☐

Type of Study Janesville Flood Insurance Study

Base flood elevation 888.2 (100 year)

Regulatory floodway width 700' (As noted in FIS Studies)

Comments _____

3. ENVIRONMENTAL CONSIDERATIONS

A. List commitments in environmental documents which affect hydraulic design (None ☒)

_____

4. HIGHWAY AND BRIDGE (CULVERT) RELATED EVALUATIONS

A. Note any outside features which might affect Stage, Discharge, or Frequency.

Levees ☒ Aggradation / Degradation ☐ Reservoirs ☐ Diversions ☐

Drainage Dist. ☐ Navigation ☐ Backwater from another source ☐

Other _____

Explanation Levee on east bank downstream of proposed bridge.

B. Proposed Roadway Overflow Section (None ☒) Length _____ Elev. _____ Frequency (if < 500 yr.): _____ yr.

Embankment: Soil Type _____ Type Slope Cover _____

Comments: _____

5. MISCELLANEOUS COMMENTS

A. Is there unusual scour potential? Yes ☐ No ☒ Protection Needed? Yes ☐ No ☒

B. Are banks stable? Yes ☒ No ☐ Protection Needed? Yes ☐ No ☒

C. Are spur dikes needed? Yes ☒ No ☐

D. Does stream carry appreciable amount of ice? Yes ☒ No ☐ Elevation of high ice (unknown)

E. Does stream carry appreciable amount of large driftwood? Yes ☒ No ☐

F. Comments _____

6. TRAFFIC RELATED EVALUATIONS

A. Present Year 1992 Traffic Count 7100 VPD % Trucks 8%

B. Design Year 2012 Traffic Count 8650 VPD % Trucks 8%

C. Emergency Route Yes ☒ No ☐ School Bus Route Yes ☒ No ☐ Mail Route Yes ☒ No ☐

D. Detour Available? Yes ☒ No ☐ Length of Detour 6.0 Miles

Comments _____

7. PRESENT FACILITY

A. Low Roadway Elevation N/A (present roadway is 0.8 miles downstream)

B. Bridge Hydraulic Capacity at point of overtopping _____cfs Frequency (if Less than Q_{500})_____yr

Roadway Overflow: Length_____ft. Elevation_____ft.

C. Is flash flooding likely? Yes ☐ No ☒

Comments _____

8. ALTERNATIVES

A. Recommended Design Dual 673'-10" x 40' PC beam bridges

Low Superstructure (Bridge) 896.0 Top Opening (culvert)_____

Low Roadway Grade 893.1

Bridge Waterway Opening 8,000 ft. Culvert Opening_____

B. Were other hydraulic alternates considered? Yes ☒ No ☐

Discussion The recommended design is considered to be the minimum acceptable structure at this site.

C. Is this assessment commensurate with the risks identified? Yes ☒ No ☐

or is further analysis needed? Yes ☐ No ☒

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: June 18, 2010
From:	Office of Local Systems	I.M. No. 3.505
Subject:	Check and Final Plans	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for preparation, submittal, and review of Local Public Agency (LPA) check and final plans for letting by the Iowa Department of Transportation (Iowa DOT). This I.M. also includes the following attachments:

Attachment A – Check and Final Plan Guidelines
Attachment B – Check and Final Plan Checklist
Attachment C – Check and Final Plan Process Flowchart

Note: If the project involves a bridge or culvert, refer also to I.M. 3.510, Check and Final Bridge or Culvert Plans.

Preparation

Content and Format

Check and final plans should be 100% complete and shall address all comments from the Preliminary Plan review. Plans shall be prepared in accordance with Attachment A - Check and Final Plan Guidelines. Attachment A provides general guidelines and instructions applicable for all types of projects. Check and final plans shall also be prepared in accordance with Attachment B - Check and Final Plan Checklist. Attachment B provides a checklist of specific items that will be reviewed by the Iowa DOT Administering Office. The Iowa DOT strongly recommends that the LPA or its consultant use both these attachments to perform an internal plan review prior to submitting the project plans to the Iowa DOT.

Design Guidelines

For new or complete reconstruction projects, refer to either I.M. 3.205, Urban Design Guidelines for Federal-aid Projects, or I.M. 3.210, Rural Design Guidelines for Federal-aid Projects. For Resurfacing, Restoration, or Rehabilitation (3R) projects, refer to I.M. 3.214, 3R Guidelines.

Federal-aid projects that do not meet these guidelines will require a design exception. The project design criteria should have already been reviewed and approved by the Administering Office. However, if the need for a design exception has arisen after the preliminary plans were submitted for review, a design exception request shall be submitted with the check plans. For more information, refer to I.M. 3.218, Design Exception Process.

Even though the Iowa DOT does not review design criteria for projects funded with only Farm-to-Market or local funds, the Iowa DOT strongly recommends that LPAs properly document any design features that do not meet the current applicable AASHTO design guidelines.

Submittal

The timely submission of check and final plans often becomes a critical point in the project development process. All submittals shall be made to the Administering Office in accordance with I.M. 3.005, Project Development Submittal Dates and Information.

Electronic Plans

LPAs may submit plans electronically in Adobe Acrobat's Portable Document Format (PDF), provided the electronic file conforms to the File Specifications for Electronic Plan Submittals to the Iowa DOT. Do not submit paper copies if plans are submitted electronically. If the electronic file submitted does not conform to these specifications, the LPA shall either revise the file to meet the specifications or submit paper copies of the plans instead.

Due to e-mail file size limitations, the Iowa DOT recommends that electronic plans, and all other electronic submittals, be transmitted to the Iowa DOT using the submittal tools provided in the Transportation Project Management System (TPMS). To obtain access to TPMS, contact the Iowa County Engineer's Service Bureau at 515-244-0779. However, electronic plans may also be submitted via e-mail directly to the appropriate contact person in the Administering Office. In either case, electronic submittals shall be accompanied by an e-mail which shall serve as the cover letter, and all other appropriate documentation shall be attached.

Review

Plans submitted in conformance with this I.M. should be returned by the Administering Office in a timely manner with relatively few comments. If the plans do not conform to these guidelines, the review process will require more time and effort by the LPA and the Iowa DOT, which could delay the project letting.

The process for submittal, distribution, and review of project plans is illustrated in Attachment C – Check and Final Plan Process Flowchart. As the flowchart shows, if the project involves bridge or culvert that requires a structural review, or the project requires work on an interstate or primary highway, the plans will need additional reviews by other Iowa DOT offices. Because these reviews may require additional time, early submittal of such plans is strongly encouraged.

Check and Final Plan Guidelines

For Local Public Agency (LPA) Projects Let by the Iowa Department of Transportation (Iowa DOT)

Plan Format

Use of the Iowa DOT plan format is strongly recommended; however, except where noted otherwise, use of the Iowa DOT standard plans and details is not required for LPA projects. Use of the Iowa DOT format promotes uniformity and consistency of project plans. This results in lower bid prices because most contractors that bid on projects let by the Iowa DOT are familiar with the Iowa DOT format. It also reduces the amount of effort, and consequently, the cost required to create a set of plans suitable for letting by the Iowa DOT.

Iowa DOT Standard Plans

The Iowa DOT strongly encourages use of its standard plans. When used, standard plans should not be included in the plan set, but instead shall be incorporated by reference.

All of the standard plans listed below may be used on any city or county project. These standard plans are available on-line in either MicroStation format or Adobe Acrobat's Portable Document Format (PDF). Where specific design problems require special solutions, the standard plans may be modified and included in the plans as a detail or detail sheet; however, the standard plan number and revision date shall be removed. Each type of standard plan is further described below.

The Standard Road Plans have been developed by the Iowa DOT Office of Design to show standardized design features, construction methods, and approved materials to be used in highway construction in the State of Iowa.

The Standard Culvert Plans have been developed by the Iowa DOT Office of Bridge and Structures. These standard plans include complete details for a variety sizes and configurations of Reinforced Concrete Box (RCB) culverts.

The Standard Bridge Plans are also provided by the Iowa DOT Office of Bridges and Structures. The Standard Bridge Plans most applicable to local agency projects have been grouped together on the County Bridge Standards Plans web page. These standard plans include complete details for continuous concrete slab bridges and pretensioned prestressed concrete beam bridges, in a variety of widths, lengths, and spans.

Iowa DOT Road Design Details

The Road Design Details are available on-line in either MicroStation or PDF format. The Road Design Details contain standard design and tabulation forms, notations, details, and detail sheets. Similar to the standard plans described above, if a Road Design Detail is modified, the number and revision date shall be removed. The types of details included in the Road Design Details are further described below:

Standard Tabulations (100 series) include various tabulations for design data, bid items, and supplementary information. If used, these tabulations and forms shall be inserted on the plan sheets.

Standard Notations (200 series) are standardized notes that may be inserted on the plans as part of the General Notes. Using the Standard Notations saves time in writing the General Notes and promotes uniformity. The General Notes should contain general project information only. Information specific to bid items should be shown in the Estimate Reference Information.

Design Detail Sheets (500 series) are complete plan sheets. They provide details for common roadway items such as drainage appurtenances, fencing, certain pavement or shoulder construction details, traffic barriers and associated appurtenances, and more. If a Design Detail Sheet is used, it shall be included as a separate sheet in the plan set. It shall not be incorporated by reference.

Typical Details (1000 to 9000 series) are individual details. They include details for typical sections, curbs, shoulders, medians, etc. If a Typical Detail is used, it shall be placed on a plan sheet. It shall not be incorporated by reference.

Iowa DOT Specifications

All projects let at the Iowa DOT that involve highway related construction work shall utilize the current edition of the Iowa DOT Standard Specifications for Highway and Bridge Construction (Standard Specifications), including the most recent General Supplemental Specifications (GS) and any applicable Supplemental Specifications (SS), Developmental Specifications (DS), and Special Provisions (SP). The designer should become thoroughly familiar with these specifications.

For projects that do not involve highway related construction work (such as historical building restorations), alternative technical specifications may be included as an SP. However, in all cases, Division 11 of the Standard Specifications shall be used for projects let by the Iowa DOT.

Standard Specifications

The Standard Specifications are published periodically in book form. Plan notes that delete or modify parts of the Standard Specifications are strongly discouraged. If special conditions require this, written justification must be provided when the plans are submitted.

General Supplemental Specifications (GS)

The GS are revisions to the Standard Specifications that have not yet been incorporated into the printed book. The GS are published in hard copy twice each year, effective with the April and October lettings. However, the current GS are merged with the on-line Standard Specifications, which are provided as part of the Electronic Reference Library (ERL). The GS current at the time of project letting will always apply to the project, just as the Standard Specifications will.

Supplemental Specifications (SS)

Some SS are for particular bid items not contained in the Standard Specifications or GS, or for bid items which modify those contained in the Standard Specifications or GS. When an LPA project uses a bid item that requires an SS, the Iowa DOT will automatically apply that SS to the bid proposal. Other SS are not related to a specific bid item, but instead specify an alternate construction or testing procedure. Such SS shall be identified by the designer when the plans are submitted for review.

Like the GS, the SS are included as part of the ERL. New SS that have become available since the ERL was last published are also available on the Specification Section's Newly Published Documents web page.

Developmental Specifications (DS)

DS must be applied by the designer to a specific project by reference on the plans. However, after initial approval by the Iowa DOT, they can be re-used for multiple projects without being reviewed and approved each time. The Iowa DOT has developed many DS in response to commonly occurring SP and other special situations. If a DS is used on a LPA project, it shall be identified by the designer when plans are submitted for review.

The currently available DS are listed on the Specification Section's Developmental Specifications web page. Some DS have been developed for specific situations or experimental projects, and therefore may not be appropriate for use on any LPA project. These DS have a person identified as a "Controller," as listed on the DS web page. Before using any DS that has a Controller, contact the Administering Office for assistance. DS without a Controller are designed for general use and may be applied to any LPA project.

Special Provisions (SP)

SP are for bid items or areas of work that are not adequately addressed by the Standard Specifications, SS, DS, or on the project plans. SP are project-specific. They may be re-used on other projects, but a new SP number must be assigned each time. If required, the LPA's designer is responsible for preparing the necessary SP in the proper format. Each SP applicable to an LPA project must be included with the check plans submittal and reviewed and approved for use by the Administering Office. For guidance concerning the

format and content of an SP, refer to the Requirements for Preparing and Submitting Special Provisions for State and Local Projects, published by the Iowa DOT Specifications Section.

SUDAS Specifications

The Statewide Urban Design and Specifications (SUDAS) may not be incorporated into the contract documents by reference, either in whole or in part. However, several sections of the SUDAS Specifications have been incorporated into the Iowa DOT Standard Specifications. Some other SUDAS Specification sections are available as DS. SUDAS Specifications not included in the Iowa DOT Standard Specifications or DS may be incorporated into an SP, however, the designer should carefully review and revise the cross-references as necessary to ensure compatibility with the Iowa DOT Standard Specifications.

Proprietary Products

Specifications using patented or proprietary (i.e., brand name) products or processes are strongly discouraged, either on the project plans or as part of an SP. Generic, end-result specifications are preferred. However, if a proprietary specification must be used, at least three acceptable products must also be listed, along with the phrase, "or approved equal." If only one proprietary product is allowed, a Public Interest Finding must be submitted to and approved by the Administering Office. For more information, refer to I.M. 3.760, Public Interest Findings.

Salvaged Materials

Section 1104 of the Standard Specifications states that all items or materials to be removed by the contractor shall become the possession of the contractor, unless stated otherwise in the contract documents. In some cases, local agencies may wish to retain possession of certain items or materials by directing the contractor to transport and stockpile those items or materials to a specified location. If items or materials will be salvaged, credit to the project is not required. However, in order to comply with Federal requirements, neither Federal nor State funds may participate in the cost of transporting and stockpiling salvaged materials. Therefore, for any item or material that will be salvaged by the contractor, two bid items shall be used:

1. A standard bid item shall be used for the cost of removal, demolition, or milling of material, as appropriate, that is necessary to construct the project. If no standard bid item exists, a non-standard bid item may be used. Federal, State, Farm-to-Market (FM), or local funds may be used to pay for the costs associated with this item.

2. A lump sum bid item 2555-0000010, "Deliver and Stockpile Salvaged Materials", shall be used for the cost of transporting and stockpiling the items or materials. Neither Federal nor State funds may participate in the cost of this bid item. However, local or FM funds may participate. A local agency may also elect to transport and stockpile the salvaged materials with its own forces. If so, use of this bid item is not required, but the contract documents must specify how and where local agency forces will pick up the salvaged materials.

In addition to the two bid items described above, in all cases the plans shall include a tabulation of the items or materials to be salvaged, including a description, quantity, and delivery location. The plans shall also specify the manner in which the materials must be stockpiled.

Provisions in the contract documents that permit optional salvage of certain items for use by the contracting authority are not allowed. Since some items may have some value, optional salvage provisions would make it difficult or impossible to accurately bid the project.

Special Procedures for HMA Millings:

If the contract documents for a project involving Recycled Asphalt Pavement (RAP) requires the contractor to deliver and stockpile less than 5,000 tons of excess HMA millings for the LPA's use, the LPA should use the Developmental Specification (DS), "Contractor Stockpiled Shoulder Material". This DS allows the contractor the option of substituting Class A shoulder stone for the excess HMA millings. This better accounts for the value of the RAP material and should result in better bids. If this DS is used, the "Contractor Stockpiled

Shoulder Material" bid item shall be used instead of the "Deliver and Stockpile Salvaged Materials" bid item. Likewise, the "Contractor Stockpiled Shoulder Material" bid item may not have Federal or State participation, but may have local or FM funding participation.

If the Contractor Stockpiled Shoulder Material DS is not used on a project that requires the contractor to salvage less than 5,000 tons of excess HMA millings, the "Deliver and Stockpile Salvaged Materials" bid item shall be used to pay for the cost of transporting and stockpiling the excess HMA millings from the project site or plant site to the LPA's stockpile. In this case, this bid item shall not have Federal or State participation, but may have local or FM participation. If the LPA will transport and stockpile the excess HMA millings with its own forces, use of the Deliver and Stockpile Salvaged Materials bid item is not required.

Federal or State funded projects shall not require salvage of more than 5000 tons of excess HMA millings because this quantity of material may have a significant value and therefore could result in lower bid prices if the contractor were allowed to keep the excess material. Projects paid for with only local or FM funds may require some or all of the HMA millings to be delivered and stockpiled for use by the LPA.

Plan Divisions

Plan divisions provide a means of segregating certain bid items or quantities, based on the funding sources that will be used to pay for those bid items or quantities. In other words, a plan division is a group of bid items or quantities for which one or more types of funding may be used.

If all bid items and quantities shown on the plan can be paid for from the same funding source or sources, plan divisions should not be used*. If multiple funding sources are involved (not counting the local match, if any) specify the type and order in which those funding sources should be used in the cover letter that accompanies the plan submittal.

*Exception: If desired by the LPA, separate divisions may be used to separate roadway bid items from structure bid items, or items to be paid for by one jurisdiction vs. another. However, in such cases, the LPA shall indicate which funding source or sources are to be used for each division.

If all bid items or quantities shown on the plan cannot be paid for from the same funding source or sources, then plan divisions shall be used. A separate plan division shall be established for each group of bid items or quantities that may be paid for with the same funding source or sources. Use only the minimum number of plan divisions that are necessary.

If the bid items or quantities of bid items in one plan division will be paid for with more than one type of funds (not counting the local match, if any), specify the type and order in which those funding sources should be used in the cover letter that accompanies the plan submittal.

If plan divisions are used, provide a separate column on the estimated quantities tabulation for each division and label it with a division number (e.g., "Division 1," "Division 2," etc.). For each division, include quantities for all bid items that apply to that division. Show the sum of all bid item quantities for all divisions in the "Total" column of the estimated quantities tabulation.

In addition, provide a description for each division on the quantities sheet. This description should identify the purpose of the division. For example, divisions may be used to separate Federal-aid participating items from Federal-aid non-participating items. They may also be used to separate items paid for by one by jurisdiction from another, or one funding source from another. Funding sources should be identified by the type of funds (e.g., STP) instead of a project number. Different project numbers should only be assigned to plan divisions if those plan divisions represent separate projects that are combined on one set of plans. In such cases, a separate entry in the Transportation Program Management System (TPMS) and a separate electronic bid item file will be required for each project.

Bid Items

Use Iowa DOT standard bid items as listed in the Bid Item Description Book published by the Iowa DOT Office of Contracts. The standard bid item list is also available on-line and is updated regularly (for more information, refer also to I.M. 3.520, Electronic Bid Item Information). Each bid item listed in the estimated quantities tabulation must have a valid bid item code, description, units, and estimated quantity.

Standard bid items shall be used unless: 1) an item is not covered by the Standard Specifications (including the applicable GS, SS or DS), or 2) the LPA can justify that a non-standard item is necessary (i.e. to maintain system compatibility).

Non-standard items will have item code of 2599-9999XXX, where XXX is a number that is determined by the units used for that item. See the Bid Item Description Book for the appropriate 2599 item numbers to use for a variety of possible bid item units. The description for all 2599 items is entered by the designer. More than one 2599 item (even with the same units) may be listed on the plans, as long as the description for each 2599 item number is unique.

> Note: Because 2599 items are not covered by the Standard Specifications, the designer must provide the necessary details and / or specifications to describe the materials and work covered by this item. In addition, the designer must supply the method of measurement and basis of payment information for all 2599 items. This information may be provided either on the project plans or in a SP, depending on the amount of information required.

Incidental Items

Keep incidental materials and work items to a minimum. Use of bid items for all measurable work and materials is recommended. As a general rule, if there is an item in the Bid Item Description Book that is applicable to any item of work shown on the plans, this bid item should be used. If an item of work is incidental, the bid item to which it is made incidental shall be identified. In addition, the nature of the incidental work shall be adequately described, including estimated quantities. Enough information shall be provided to allow the bidder to make a reasonable estimate of the cost of any work designated as incidental.

Method of Measurement and Basis of Payment

All bid items must have both method of measurement and basis of payment information specified. For items that use a Special Provision, this information should be shown in the Special Provision. For items that do not use a Special Provision, and the method of measurement and basis of payment information is not addressed by the Standard Specifications, GS, SS, or DS, this information should be shown in the estimate reference note on the plans.

For each bid item listed in the Bid Item Description Book, a code is listed under the MEAS/PAY column. This code directs the bidder to the appropriate location for the method of measurement and basis of payment information. If the code in the MEAS/PAY column is “PLAN, STD6, SP or SP2,” the designer must supply the method of measurement and basis of payment information, either on the plans or in a Special Provision. See the instructions in the front of the Bid Item Description Book for more information.

If unfamiliar with writing method of measurement and basis of payment specification language, the designer should refer to the Standard Specifications for examples.

Estimate Reference Information

Estimate Reference Information should be clear, concise, and used to explain anything special about the item. The Estimate Reference Information should direct the bidder to the location of any additional information about that particular bid item in the plans, such as a plan sheet, detail, or tabulation.

Do NOT make reference to the applicable section of the Standard Specifications or restate what is contained in them. Generally, the first 4 digits of a standard item code directs the bidder to the appropriate section in the Standard Specifications. Citing Standard Specification sections or restating what is contained in them is not necessary and only increases the potential for conflicts within the contract documents. In addition, do not make reference to applicable SS, DS, or SP. Instead these shall be identified by the designer when the plans are turned in for review.

Use of the phrase, “As directed by the Engineer” should be avoided, both in the SP, Estimate Reference Information, and elsewhere on the plans. “As directed by the Engineer” shall not be used when the Engineer’s direction may result in additional costs to the contractor. Any work to be bid a contractor should be adequately described in the contract documents. Use of this phrase makes it difficult, if not impossible, for the contractor to prepare an accurate bid. This adds risk to the contractor and may increase the project cost unnecessarily.

Check and Final Plan Checklist

For Local Public Agency (LPA) Projects Let by the Iowa Department of Transportation (Iowa DOT)

Project No.: _____ Date:_____ LPA or Consulting Firm: _____

Name of Designer:_____ Phone No.:_____ email: _____

Note: This checklist is not intended to cover all of the details, notes and information that may be necessary for acceptable check and final plans. However, this checklist addresses the items where most questions or problems generally arise. *This checklist is requested, but not required with the check plan submittal.* This checklist is not needed with the final plan submittal.

GENERAL

☐ **Project Concept.** The proposed design criteria, improvements, and project limits are consistent with the scope and type of work shown in the approved Concept Statement for Local Systems Federal-aid Projects (Form 517001) and the approved Preliminary Plans. Any significant changes to the project concept (e.g., proposed design elements, project limits, potential environmental impacts, type of work, etc.) shall be explained in the cover letter that accompanies the plans. For more information, refer to I.M. 3.105, Concept Statement Instructions.

☐ **Environmental Document Requirements.** If the approved environmental document (e.g., Section 4(f) statement, Environmental Assessment, or Environmental Impact Statement) specifies that certain conditions shall be met, or certain sensitive areas shall be avoided, the plans shall be consistent with these requirements.

☐ **Format.** Plans may be submitted in either electronic or paper format. If plans are submitted in electronic format, they shall conform to the File Specifications for Electronic Plan Submittals to the Iowa DOT. If plans are submitted in paper format, they shall be black or grayscale print on plain white paper.

☐ **Dimensions and Legibility.** Plans shall be submitted as single-sided, 11”x17” sheets. To ensure that all of the plan is printed accurately, the border widths (i.e., clear space between the edge of paper and printing on the plan) shall meet the following minimum dimensions: top and bottom = 1/4 in.; left and right = 5/8 in. All lettering and details on the 11”x17” plan sheets shall be legible when printed.

☐ **Check and Final Bridge or Culvert Plans.** Bridge or culvert plans shall also conform to the guidelines provided in I.M. 3.510, Check and Final Bridge or Culvert Plans.

TITLE SHEET

☐ **Check Plans Stamp.** Check Plan submittals should be identified by using a red stamp, red pen, or other means, to mark the words “Check Plans” on the designer’s certification block. Note: Original final plans shall not be stamped as “Final Plans.” Final plans shall be indicated by the designer’s signature as noted in the “Designer’s Certification Block” item below.

☐ **System Classification.** The roadway system classification shall be shown. The Systems Classification should be shown in large font near the center or upper middle part of the sheet. For county projects, use “Farm-to-Market System” for a project on a Farm-to-Market route or “Secondary Road System” for a project on a local route. For city projects, use “Urban Road System.” For projects located on the corporation line, use the system classification that is under the jurisdiction of the lead governmental agency.

☐ **Location Map.** A location map with a north arrow and major street names shall be shown. The location map should be located near the left or bottom left part of the sheet. The location map should also include a scale (or be noted as “Not to Scale”) and identify the project limits including the beginning and ending stations. If project divisions are used, their limits shall also be indicated, either on the location map or in a plan note.

☐ **Designer's Certification Block.** The plans shall include a certification block and seal that complies with the appropriate sections or chapters of the Code of Iowa and the Iowa Administrative Code (IAC). The designers certification block should be shown near the bottom right part of the sheet. The check plans should not be signed or sealed, as noted in the "Check Plans Stamp" item above. The final plans shall be signed, dated, and sealed by the professional engineer, land surveyor, architect, or landscape architect responsible for the plans or portions of the plans. An original signature in contrasting ink is required. Blue ink is recommended. Note: For electronic plans, refer to the File Specifications for Electronic Plan Submittals to the Iowa DOT for the applicable plan signature requirements.

☐ **LPA's Signature Block.** The plans shall include a signature block that includes the title of the appropriate LPA official(s) with a space for each official(s) signature and date. The LPA's signature block should be shown near the bottom right part of the sheet. Check plans should not include signature(s). The final plans shall include the LPA official(s) signature(s), which do not have to be original.

☐ **Index of Sheets.** An index listing all sheets included in the plans shall be shown. The index of sheets should be shown near the right or upper right part of the sheet. Sheets should generally be listed in the following order: Title sheet, typical sections, standard details, estimated quantities tabulation, estimate reference information, supplemental tabulations, plan and profile sheets, other detail sheets, and cross sections. Use of the Iowa DOT sheet numbering system as shown in the Iowa DOT Road Design Manual, Section 1E-2, is recommended. If used, it shall be used consistently.

☐ **Availability of Cross Sections.** If cross-sections will be included, they shall be submitted with the plans. Cross-sections will be available only through the Office of Contracts. They shall not be supplied directly to bidders by the LPA.

☐ **Project Number.** The Iowa DOT project number shall be shown in at least one place on all plan sheets. Recommended placements for the title sheet and all other sheets include the middle left margin and the bottom right margin. For the title sheet, the project number should also be shown near the upper right corner or in the center (above or below the project title).

Note:

- Usually, only one project number should be shown on the plans. However, if the plans will include more than one project, additional project numbers should be shown, along with a description and limits of each project. In such cases, a separate entry in the Transportation Program Management System (TPMS) and a separate electronic bid item file will be required for each project.
- If a single project spans more than one jurisdiction (e.g., across county or city boundaries), the project number used should correspond to jurisdiction in which the project stationing begins (i.e., the westerly or southerly end of the project).
- If unsure about which project number or how many project numbers to use, contact the Administering Office for assistance.

☐ **LPA Name and Project Location.** The name of the city or county shall be shown in at least one location on all plan sheets. Recommended placement is on the bottom left margin. On the title sheet, the name of the city or county and a brief description of the project location shall also be shown, preferably in the center part of the sheet. The description shall include the route or street name, plus the beginning and ending points of the project. Beginning and ending points shall be identified by a cross street, feature crossed, corporation limits, or some other feature that can be located on a map. If multiple routes or streets are included in the project, list each separately. For a Federal-aid project, the description on the plans shall be consistent with description for the project in the Statewide Transportation Improvement Program (STIP) and in TPMS Development.

☐ **Work Type Description.** A standard work type description, as listed in the Iowa DOT Bid Item Description book, shall be shown, preferably in the center part of the sheet. Use the work type description that best represents the largest portion of the estimated contract cost. More than one work type description may be used, but for advertising purposes, only one work type (that which represents the largest portion of the estimated contract cost) will be used.

☐ **Mileage Summary Tabulation.** For roadway or trail projects, a mileage summary tabulation that includes the total project mileage shall be shown. This tabulation should be shown near the center or bottom center part of the sheet. The tabulation shall also include the beginning and ending stations of the

project and any plan divisions (if used). Any station equations or exceptions present on the project shall also be identified in the tabulation.

☐ **Tabulation of Standard Plans.** A tabulation shall be included that lists all of the applicable Standard Road Plans, Standard Bridge Plans, or Standard Culvert Plans, including revision dates which are current for the targeted letting. For each standard plan listed, all of the standard plans referenced by that standard plan shall also be listed. These tabulations should be shown near the right or upper right part of the title sheet. If space does not allow, these tabulations may be shown on the C sheets; however, in such cases a cross-reference note shall be placed on the title sheet to direct the bidders to the appropriate location for the standard plan tabulations.

Note: Bidders should not be referred to the Office of Bridges and Structures or the Office of Local Systems to obtain hard copies of the Standard Bridge Plans or Standard Culvert Plans. These are available in electronic format at the web sites indicated above.

☐ **Letting Date.** A space or a box for the project letting date shall be shown, preferably on upper left margin of sheet. If the letting date is known, the appropriate date may be shown in the box or space provided.

☐ **U.S. Army Corps of Engineers 404 Permit.** If a permit is needed, include Standard Note 281-1 near the left or upper left part of the sheet. Complete the first blank with one of the following, as appropriate: "Nationwide Permit XX", where XX is the Nationwide Permit Number (14, 33, etc.); "Regional Permit 7", or "Individual Permit". Complete the second blank with the Corps' project-specific permit number, as shown in the subject line of the Corps' permit approval letter. The project-specific number may be omitted for projects that can be proceed under a Corps Nationwide Permit without notification to the Corps, because no such number is assigned.

Note:

- If a bridge, culvert, or grading project does not require this permit, this shall be noted in the cover letter with the check plans.
- General 404 permit requirements are included in Article 1105.14 of the Standard Specifications. However, if the Corps added any special conditions to their approval of the permit, these shall be indicated on the plans.
- If the approved 404 Permit application indicated a temporary stream access will be allowed, Standard Road Plan RL-16 shall be used. If the approved 404 Permit application indicated that temporary stream access will not be allowed, the plans shall note this condition. For more information, refer to I.M. 3.130, 404 Permit Process.

☐ **Iowa DNR Floodplain Construction Permit.** If a permit is needed, the following note shall be included: *"This project is covered by Iowa DNR Floodplain Construction Permit No. (insert Iowa DNR permit number)."* This note should be shown on the left or upper left part of the sheet. If a bridge, culvert, or grading project does not require this permit, this shall be noted in the cover letter with the check plans. Refer to I.M. 3.410, Preliminary Bridge or Culver Plans, for more information.

☐ **Iowa DNR Storm Water Permit.** If the project disturbs one acre or more of land, the following note shall be included: *"This project is covered by the Iowa Department of Natural Resources NPDES General Permit No. 2. The Contractor shall carry out the terms and conditions of General Permit No. 2 and the storm water pollution prevention plan which is a part of these contract documents. Refer to Section 2602 of the Iowa DOT Standard Specifications for additional information."* This note should be shown near the left or upper left part of the sheet. If an individual permit is required, the individual permit number shall be used instead of the general permit number. Any area where soil is exposed to erosive forces, such as wind or water, shall be considered disturbed. The LPA shall be responsible for obtaining the appropriate National Pollutant Discharge Elimination System (NPDES) permit. The contract documents shall not shift this responsibility to the Contractor. For more information, refer to I.M. 3.140, Storm Water Permits.

☐ **Standard Specification Note.** The following standard note shall be included near the center of the sheet: *"The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series 2009, plus General Supplemental Specifications; and applicable Supplemental Specifications, Developmental Specifications, and Special Provisions, shall apply to construction on this project."*

☐ **FHWA Structure Number.** If the project involves a bridge, the FHWA structure number shall be shown, preferably on or near the location map that shows the location of the bridge. Bridges are defined as any structure with a clear opening greater than 20 feet, as measured along the centerline of the roadway.

☐ **Utility Contacts.** If any utility facilities are within or immediately adjacent to the proposed limits of construction, utility contact information (company name and a contact person's name, address, and phone number) shall be shown for each utility company. The Iowa One-Call symbol and phone number should also be displayed. These should be shown near the bottom center part of the sheet.

TYPICAL SECTION SHEETS

☐ **Dimensions and Slopes**. Proposed cross section elements shall be detailed with adequate horizontal and vertical dimensions. Pavement slopes, cut slopes, and fill slopes shall also be specified.

☐ **Materials Specified.** The type and thickness of surface, base and subbase materials for pavements, shoulders, sidewalks, or trails shall be shown. Materials should be identified using the appropriate bid item description for that material.

☐ **Number of Typical Sections.** Separate typical sections for each significantly different type of cross section found on the project shall be shown. Use separate typical sections to show differences in the number of lanes, pavement types, pavement thicknesses, curb and gutter, sidewalk, or recreational trails.

☐ **Station Ranges.** If more than one typical section is used, the applicable stationing ranges shall be labeled for each. If the project contains more than one plan division, the applicable division(s) for each typical section should be noted.

☐ **Existing Features.** For projects that involve widening, milling, resurfacing, or other modifications to the existing pavement and / or shoulder; the type, thickness, and width of existing pavement and / or shoulder structure should be shown on the typical cross section.

QUANTITY, ESTIMATE REFERENCE, GENERAL NOTE, AND TABULATION SHEETS

☐ **Estimated Quantities Tabulation.** All plans shall include an estimated quantities tabulation. Use of the Iowa DOT Standard Tabulations (100 Series) is recommended. If a non-standard tabulation is used instead, it shall include, as a minimum, the Iowa DOT bid item code, item description, unit, and total bid item quantity. If plan divisions are used, the estimated quantities tabulation shall also indicate the bid items or quantities of items that apply to each division. A label or description of each division shall also be included. For additional information, refer to the "Plan Divisions" section in Attachment A to I.M. 3.505.

☐ **Supplementary Tabulations.** Supplementary tabulations should also be used to provide additional information or a breakdown of bid item quantities. When possible, include a total quantity for each bid item shown in a supplemental tabulation. The bid item quantity listed in a supplemental tabulation should match the total bid item quantity as listed in the estimated quantities tabulation. If the bid item quantity contains additional quantities that are not shown in the supplemental tabulation, note these additional quantities in the Estimate Reference Information. Use of the Iowa DOT Standard Tabulations (100 Series), is recommended. If included, the most current version shall be used. For additional information, refer to the "Iowa DOT Road Design Details" section in Attachment A to I.M. 3.505.

☐ **Bid Item Codes, Description, and Units.** The bid item codes, descriptions, and units listed on the plans shall match the current list of standard bid items, as shown in the Bid Item Description Book, published annually by the Iowa DOT Office of Contracts. Only valid bid items shall be used. The standard bid item list is also available on-line and is updated regularly. For additional guidance, refer to the "Bid Items" section in Attachment A to I.M. 3.505.

☐ **Method of Measurement and Basis of Payment.** Check the MEAS/PAY code given for each item in the Bid Item Description Book. If this code indicates that the method of measurement and basis of payment information must be supplied by the designer, it shall be included in the plans (preferably in the Estimate Reference Information) or the applicable Special Provision. For additional guidance, refer to the "Method of Measurement and Basis of Payment" section in Attachment A to I.M. 3.505.

☐ **Estimate Reference Information**. Estimate Reference Information shall be provided. Estimate Reference Information should explain what is included in a bid item and where additional information about that item can be found in the plans. For additional guidance, refer to the "Estimate Reference Information" section in Attachment A to I.M. 3.505.

☐ **Non-Participating Items or Quantities.** If any bid items or quantities are excluded from participation by one or more of the project funding sources, those bid items or quantities shall be separated by means of plan divisions. Some bid items or quantities may be non-participating based on the Federal or State eligibility rules or regulations for a particular funding program. For example, some utility relocations are not eligible for Federal participation, as described in I.M. 3.650, Federal-aid Participation in Utility Relocations. Other bid items or quantities may be non-participating if associated with work that extends beyond the approved project limits. For additional guidance, refer to the "Plan Divisions" section in Attachment A to I.M. 3.505. If uncertain about whether any bid items or quantities should be designated as non-participating, contact the Administering Office for assistance.

☐ **Salvaged Items.** If the contractor is required deliver and stockpile any salvaged items that will become the property of the contracting authority, the bid item, 2555-0000010, Deliver and Stockpile Salvaged Materials, shall be used. This bid item shall be placed in a non-participating plan division in the plans and in the BIAS bid item file. If the contracting authority will deliver and stockpile the salvaged materials with its own forces, this bid item shall not be used. For more information, refer to the "Salvaged Materials" section in Attachment A to I.M. 3.505.

☐ **Earthwork Quantities.** A breakdown of earthwork quantities should be shown in a separate tabulation or in the Estimate Reference Information. Quantities should be shown for cut, fill, the assumed shrinkage percentage, and any waste or borrow requirements. Notes: (1) Topsoil shall not be included in the pay quantity for the various excavation bid items. Topsoil is a separate pay item. (2) Overhaul should be paid for if it is in excess of the free-haul limits specified by the contract documents. If the plans do not specify a free-haul distance, the free-haul distance will be 1000 feet, as per Article 2108.04.E of the Standard Specifications.

☐ **Roadway Pipe Culverts.** If roadway pipe culverts are part of the project work, the bid item, "2402-2720100, Excavation, Class 20, For Roadway Pipe Culvert," shall be included as per the Standard Road Plans.

☐ **Earth Shoulders / Fill.** If the work involves construction of earth shoulders or earth shoulder fill above the subgrade elevation adjacent to a paved surface or curb and gutter, one of the following bid items shall be included: if the volume of earth shoulder is included in the Class 10 Excavation quantity, use the bid item "2123-7450020, Shoulder Finishing, Earth"; if the volume of earth shoulder is not included in the Class 10 Excavation quantity, use the bid item "2123-7450000, Shoulder Construction, Earth." Each side of a trail or roadway is measured separately.

☐ **Lump Sum Item Split.** For each lump sum item on a project with more than one plan division, a decimal fraction quantity shall be included for each plan division, if the lump sum item applies to that division. For each lump sum item, the sum of the quantities shown for all the applicable plan divisions shall equal 1.0.

☐ **Guardrail Items.** If the construction includes guardrail, all of the bid items as listed on the applicable BA series of Standard Road Plans shall be included. The applicable Standard Tabulations in the 108 series shall be used.

☐ **Trail Paving.** Portland Cement Concrete (PCC) or Hot Mix Asphalt (HMA) bicycle or pedestrian trails shall be paid for with the bid items specified by Section 2511 of the Standard Specifications. HMA Commercial Mix is also acceptable for trails (see item below).

☐ **HMA Commercial Mix for Trail Paving.** If HMA Commercial Mix (bid item 2303-0000100) is used for trail paving, the following note shall be included in the Estimate Reference Information, unless an alternative specification has been approved: *"All work shall be completed in accordance with Iowa DOT Standard Specifications, except that Article 2303.02 Materials, shall not apply. The Contractor shall furnish and place a commercial asphalt mix with a three-eighths (3/8) maximum aggregate size and a minimum asphalt content of 6.25 %. Class II compaction shall be required. Payment for asphalt cement shall not be made separately but shall be included in the unit price bid for this item."*

☐ **Bridge Approach Paving.** If bridge approach paving is included in the work, all of the bid items as listed on the applicable RK series of Standard Road Plans shall be included. Standard Tabulation 112-6 shall be used.

☐ **Bridge Removals.** If the project involves removal of a bridge, the bid item, "2401-6745625, Removal of Existing Bridge," shall be used. Use of this bid item for bridge removals is required to automatically generate the "Notification of Demolition" form that the Office of Contracts will send to the Contractor. This form is required to comply with the State and Federal asbestos regulations. For more information, refer to I.M. 3.160, Asbestos Inspection, Removal, and Notification Requirements.

☐ ☐ **Construction Survey.** The bid item, "2526-8285000, Construction Survey," shall be included if the Contractor is providing the construction survey for the project.

☐ **Flaggers.** The bid item, "2528-8445113, Flaggers," shall be included if reference is made to roadway flaggers in a Standard Road Plan, or if flaggers are called for by the traffic control details or notes. The bid quantity for Flaggers should be left blank on the plans. If desired, the designer may estimate a quantity and show it on the plans. However, the Office of Contracts will determine the actual bid quantity based on the number of working days assigned for the project. If the Office of Contracts does not agree with the estimated quantity provided by the designer, the plans will be changed to show the actual bid quantity as determined by the Office of Contracts.

☐ **Safety Closures.** The bid item, "2518-6910000, Safety Closure," shall be included if road closures or hazard closures are shown on a referenced Standard Road Plan or traffic control detail, or if they are required by a plan note. Use of Standard Tabulation 108-13A for Safety Closures is recommended.

☐ **Pavement Smoothness.** If the Pavement Smoothness (Section 2316) specification is desired for HMA or PCC paving, this shall be indicated in the Estimate Reference Information for the appropriate paving bid items. If called for, this specification shall be added in its entirety. Parts of the specification shall not be written out.

☐ **Certified Plant Inspection.** If the Certified Plant Inspection (Section 2521) specifications are desired for a specific bid item (e.g., HMA or PCC paving, structural concrete, or flowable mortar), this shall be indicated in the Estimate Reference Information of the bid item(s) for which Certified Plant Inspection will apply. If Certified Plant Inspection is called for, it may be appropriate to also include the bid item, "2520-3350010, Field Laboratory."

☐ **Subdrains.** If a drainable base is used, a subdrain system should be included. If subdrains are used, all the associated bid items shall be included, as indicated on the appropriate Standard Road Plan.

☐ **Pavement Removal and Patching.** If pavement removal, driveway removal or patching is required for the project, the type and thickness of the existing pavement shall be shown on the plans. This information may be shown in the tabulations for the removal or patching items, in the Estimate Reference Information, or in separate tabulation for existing pavement (use of Standard Tabulation 102-5 is recommended).

☐ **Mobilization**. The bid item, "2533-4980005, Mobilization" shall be included for all contracts, except maintenance aggregate, materials only, granular surfacing, or other minor contracts.

☐ **Traffic Control**. The bid item, "2528-8445110, Traffic Control" shall be included, unless the plans indicate the LPA will provide and maintain all the necessary traffic control devices. If the LPA does provide the traffic control devices, the plans shall specify where they will be provided to the Contractor.

☐ **Clearing and Grubbing.** When large areas densely covered by trees and other vegetation must be cleared, this item should be bid by the acre. If this item is bid by the acre, the plans should specifically indicate the extent of the area to be cleared and grubbed. When the area to be cleared is not densely covered by trees or other vegetation, this item shall be bid by the Unit. In either case, the Estimate Reference Information for these items should include a reference to plan sheet or tabulation where the quantities are shown.

☐ **Scrape Test Note.** If the project involves either removal or painting of an existing painted steel bridge or railing, the following note shall be included: *"Scrape samples of this bridge were taken to get an*

indication of the existence of and level of total chromium and total lead. The analysis of total chromium in the sample was ___ppm. The analysis of total lead in the sample was____ppm. The analysis shows the existence of these two toxic constituents. The levels indicated by these tests could create conditions above regulatory limits for health safety requirements. No other substances were analyzed. The bidder should not rely on the LPA's testing and analysis for any purpose other than an indication of the existence of these two constituents."

☐ **Pollution Prevention Plan (PPP).** If a National Pollutant Discharge Elimination System (NPDES) permit is required for the project, the PPP and the appropriate erosion control bid items associated with the PPP shall be included, as listed in Section 2602 of the Iowa DOT Standard Specifications, unless the LPA will be providing and maintaining all of the erosion control measures. If the LPA will provide these, this shall be clearly stated on the plans. For more information on the NPDES permit procedures, refer to I.M. 3.140, Storm Water Permits.

PLAN AND/OR PROFILE SHEETS

☐ **Existing Features.** The plans should show the location of existing topographical features (e.g., existing pavement, structures, buildings, etc.).

☐ **North Arrow.** A North arrow shall be shown on all plan sheets.

☐ **Scale.** All plan and profile sheets shall show a horizontal scale. Profile sheets shall also show a vertical scale.

☐ **Proposed Right-of-Way (ROW).** If the project involves ROW acquisitions, permanent easements, or temporary easements, the proposed right-of-way lines, easement lines, property lines, parcel numbers, and property owners shall be shown. For projects involving several ROW acquisitions or easements, use of separate ROW sheets is recommended.

☐ **Existing ROW.** Existing ROW lines shall be shown.

☐ **Storm Sewers.** The station and offset information for all new intakes and utility accesses shall be shown on the plan sheets or in a tabulation. If needed, storm sewer profiles should be shown on separate sheets.

☐ **Culverts.** The station, skew, length, and flow line elevations of all roadway and entrance culverts shall be identified.

☐ **Profiles.** The vertical profile data shall be shown, including the percent grade, vertical curve length, K factor, stopping sight distance (SSD), and design speed. The point of vertical curvature (P.V.C.), point of vertical tangency (P.V.T.), and point of vertical intersection (P.V.I.) stations and elevations shall be labeled.

☐ **Alignments.** The horizontal curve data shall be shown, including the point of intersection (P.I.) station, curve length, radius or degree of curvature, tangent length, and delta angle. The point of curvature (P.C.), and point of tangency (P.T.) stations should also be shown.

☐ **Construction Survey Information.** If the Contractor will be responsible for the construction staking, the following information shall be shown:

- **Benchmarks**. List the type, location, and elevation of each benchmark. This information may be listed on a separate sheet if necessary.
- **Reference Point Information**. List the type, station, offset, and coordinates of each reference point (sometimes called control points). Reference points should also be tied to other existing fixed objects if they are likely to be disturbed by construction activities. Reference tie information should be included by using either a sketch showing the distances to the tie points, or a verbal description of the same. At least 3 reference ties should be given for each reference point. This information may be listed on a separate sheet if necessary.
- **Horizontal Alignment Information**. List the horizontal coordinates of all P.I.s. The bearing of all tangent lines should also be shown.

☐ **Utilities**. All known utility facilities within or immediately adjacent to the project limits shall be shown, including the approximate location of such facilities and the name of the utility company. For more information, refer to I.M. 3.640, Utility Accommodation and Coordination.

☐ **Railroad (RR) Crossings**. All RR crossings within or immediately adjacent to the project limits shall be shown, including the RR property lines and the name of railroad company. This information shall be included anytime the Contractor will be required to gain access or perform work on the RR right-of-way or within 25 feet of the centerline of the outermost RR track, even if the RR facilities are not directly impacted by the project. For more information, refer to I.M. 3.670, Work on Railroad Right-of-Way.

☐ **Intersection Details.** For new construction or reconstruction projects, intersection detail drawings shall be included. Dimensions of channelization islands, curve radii, taper ratios, and taper lengths shall be shown. Intersection details shall be at a scale sufficient to show the necessary geometric details. A 1"=20' scale is recommended.

☐ **Jointing Details.** For PCC paving projects, the spacing and type of joints shall be shown. Use of the Standard Road Plans (PV-1) and / or special jointing details is recommended. Joint types shall be specified using the standard types shown on the Standard Road Plans.

☐ **Curb Ramps.** If the roadway or sidewalks are being altered by the project, Americans with Disabilities Act (ADA) compliant curb ramps shall be constructed at all intersections of sidewalks and roadways within the scope of the project. If ramps already exist at these locations, but are not fully compliant (e.g., they do not include detectable warnings), those ramps shall either be replaced or retrofitted to meet current ADA requirements. To ensure compliance with these requirements, use of Standard Road Plan MI-220 is strongly recommended. For more information, refer to I.M. 1.080, ADA Requirements.

☐ **Non-Participation Limits.** If any portion of the contract work is outside the approved or eligible project limits for one or more of the project's funding sources, the limits of the participating work shall be indicated on the plan sheets, including the beginning and ending stations.

TRAFFIC CONTROL

☐ **Status of Vehicular Traffic.** The plans shall state whether traffic will be maintained or detoured during construction. This may be accomplished via special traffic control notes, details, Standard Traffic Control Plans, or some combination thereof. If part or all of the traffic control devices will be provided, installed, and/or maintained by the LPA, this shall also be stated.

☐ **Status of Pedestrian Traffic.** The plans shall indicate how pedestrian traffic will be addressed during construction. Pedestrian paths may be maintained, closed or detoured during construction. This may be accomplished via special traffic control notes, details or some combination thereof. In all cases, pedestrian paths and / or detours shall comply with ADA and MUTCD requirements. For more information, refer to Section 2528 of the Standard Specifications and the Section 9A-5 of the Iowa DOT Design Manual.

☐ **Standard Traffic Control Plans.** Use of applicable Standard Road Plans, TC Series, is strongly recommended. If used, the traffic control notes should explain under what conditions or which locations each Standard Road plan applies.

☐ **Phased Traffic Control.** If the project involves phased construction, project-specific traffic control plans or details shall be included, unless the Standard Road Plans can adequately describe the necessary traffic control for each phase. The traffic control plans or details shall show the appropriate traffic control devices for each phase. Staging notes shall also be included that describe which items of work must be completed as part of each phase.

☐ **Detour Routes.** If a detour will be required, the detour route and the appropriate temporary traffic control devices shall be specified, unless all of the traffic control devices will be provided, installed, and maintained by the LPA. Use of a schematic or "to-scale" detour plan sheet is recommended. Note: If the detour route and / or signing involves a Primary Highway in any way, contact the appropriate Iowa DOT District Office to obtain approval of the proposed detour route and / or signs.

☐ **References to the MUTCD.** It is not necessary to reference the MUTCD with respect to temporary or permanent traffic control devices shown on the plans. The Standard Specifications require that all traffic control devices comply with the MUTCD, as adopted by the Iowa DOT. If reference is made to the MUTCD on the plans, it shall be referred to as the *"Manual on Uniform Traffic Control Devices for Streets and Highways, as adopted by the Department per 761 of the Iowa Administrative Code (IAC), Chapter 130."*

TRAFFIC SIGNAL SHEETS

☐ **Scale.** Drawings shall be of sufficient scale to show the necessary details. A 1"=20' scale is recommended.

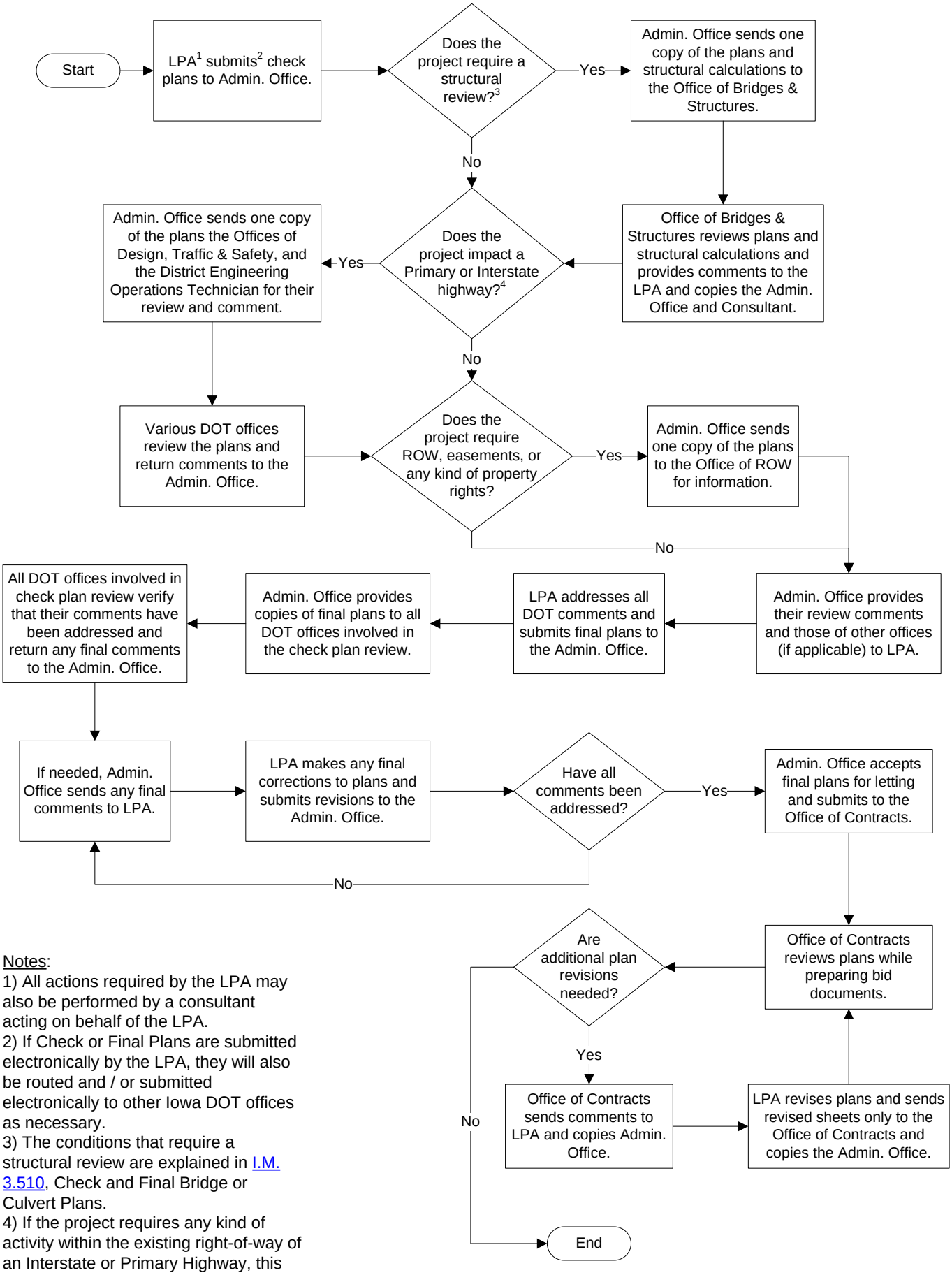
☐ **Pavement Markings Details.** Pavement markings, including lane lines, stop bars, crosswalks, symbols, and legends should be shown.

☐ **Signal Details.** Signal pole, signal head, mast arm, and detector loops locations should be shown.

☐ **Roadway Details.** Edges of pavement, curbs, sidewalks, and pedestrian curb ramps should be shown.

☐ **Tabulations.** Tabulation(s) shall be provided that list all of the items and quantities that are included in the lump sum Traffic Signalization bid item.

Check and Final Plan Process Flowchart



Notes:
1) All actions required by the LPA may also be performed by a consultant acting on behalf of the LPA.
2) If Check or Final Plans are submitted electronically by the LPA, they will also be routed and / or submitted electronically to other Iowa DOT offices as necessary.
3) The conditions that require a structural review are explained in I.M. 3.510, Check and Final Bridge or Culvert Plans.
4) If the project requires any kind of activity within the existing right-of-way of an Interstate or Primary Highway, this constitutes an “impact.”

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: June 18, 2010
From:	Office of Local Systems	I.M. No. 3.510
Subject:	Check and Final Bridge or Culvert Plans	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for preparation and review of Local Public Agency (LPA) Check and Final bridge or culvert plans for letting by the Iowa Department of Transportation (Iowa DOT). This I.M. also includes the following attachments:

Attachment A – Bridge or Culvert Plan Supplementary Checklist

Note: This I.M. provides guidance specific to check and final bridge or culvert plans. The guidance provided in I.M. 3.505, Check and Final Plans also applies. However, because of the differences between structural plans and roadway plans, the guidance provided in this I.M. shall govern in case of a conflict.

Definitions

Standard Designs – Those structures that use the Iowa DOT Standard Culvert Plans or Standard Bridge Plans, including those shown on the County Bridge Standards Plans web page.

Non-standard Designs – Those structures that do not utilize the Iowa DOT Standard Bridge or Culvert Plans or use a modified version of these standards.

National Highway System (NHS) – A roadway system that includes all Interstate and certain other Principal Arterial highways, as shown on the NHS map.

Preparation

Content and Format

The Iowa DOT recommends that LPA bridge or culvert projects follow the same format used for Iowa DOT bridge or culvert plans. Attachment A – Bridge or Culvert Plan Supplementary Checklist, provides basic guidance for preparing a satisfactory bridge or culvert plan for letting by the Iowa DOT. This checklist assumes the structure will use a standard design, and therefore it does not address many of the details and information that are already included on the standard bridge or culvert plans.

For structures with non-standard designs, designers may also wish to consult the Office of Bridges and Structures (OBS) Culvert Plan Review Checklist, Bridge Plan Review Checklist, and Plan Review Checklist Notes. These checklists are much more detailed and may provide additional assistance to designers who are unfamiliar with the additional details required to prepare plans for a non-standard design.

Design Guidelines

All new or completely reconstructed Federal-aid bridge and culvert structures shall be designed in accordance with the most current edition of the *AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications.* Repair or rehabilitation of bridge and culvert structures may be designed in accordance with either the *American Association of State Highway Transportation Officials (AASHTO) Standard Specifications for Highway Bridges* or the *AASHTO LRFD Bridge Design Specifications*.

The Iowa DOT also recommends that LPA designers use the Iowa DOT Office of Bridges and Structures Design Manual as a guide for structural design of bridges and culverts.

Structural Reviews

Submittal Criteria

Bridge projects that meet either of the following criteria will require a structural review by the Iowa DOT Office of Bridges and Structures:

1. all structures on the National Highway System (NHS); or
2. all Federally funded structures that use non-standard designs and are not on the NHS.

For projects that meet either of the criteria listed above, submit 2 copies of the structural plans and calculations (if an in-depth review is required) to the Administering Office with the Check Plans. The submittal shall also include an email address or fax number for both the design engineer and the LPA contact person. Projects that require a structural review should be submitted in accordance with the submittal dates for major projects, as shown on I.M. 3.005, Project Development Submittal Dates and Information.

The LPA may also request a structural review, even if not required by the criteria shown above. However, such reviews will be conducted at the discretion of the Office of Bridges and Structures, and only as time permits.

Content

The degree of structural review will be either “in-depth” or “cursory” depending on the roadway classification of the structure. If the structure is on the NHS, the structural review will be “in-depth.” If the structure is not on the NHS, the structural review will be “cursory.” These two types of review are further defined below.

In-depth Review

This review will include a detailed review of all plan notes, quantities, and structural details including possible review of structural calculations such as allowable pile bearings and design stresses. This review usually takes several days to complete. Upon completion of the review, the Office of Bridges and Structures will return one set of marked-up plans to the LPA with their comments and provide copies of the cover letter to the Administering Office and the consultant.

Cursory Review

This review will be general in nature. It will consist of a review of the design concepts and overall scope of the project. It will not include review of any structural calculations, details, quantities, or plan notes. This review will usually take less than one hour, and as a result, the scope of the review will usually be limited to general comments. The Office of Bridges and Structures will return written comments to the LPA via email or fax, and provide copies to the Administering Office and the consultant. No marked-up plans will be returned.

Bridge or Culvert Plan Supplementary Checklist

For Local Public Agency (LPA) Projects Let by the Iowa Department of Transportation (Iowa DOT)

Project No.: _____ Date:_____ LPA or Consulting Firm: _____

Name of Designer:_____ Phone No.:_____ email: _____

Note: This checklist shall be used in *addition* to the Check and Final Plans Checklist, which is included in I.M. 3.505 as Attachment B. These checklists are not intended to cover all of the details, notes and information that may be necessary for acceptable Check and Final bridge or culvert plans. However, these checklists address the items where most questions or problems generally arise. *These checklists are requested, but not required with the Check Plan submittal.* These checklists are not needed with the final plan submittal.

GENERAL

☐ **Highway Bridge Program (HBP) Eligibility.** If the project involves HBP funding, the bridge shall be shown on the FHWA Qualifying Bridge List, or if not on the list, shall be reviewed and approved for HBP funding eligibility by FHWA. For more information, refer to I.M. 2.020, Federal and State Bridge Programs.

TITLE SHEET

☐ **Shop Drawings / False Work Drawings Note.** If the plans specify that shop drawings are required, this note shall state the name, mailing address, phone number, and fax number of the agency responsible for checking the fabricator's shop drawings and the contractor's false work drawings. The agency may be a consulting engineering firm, the LPA, or a combination of the two. Note: The Iowa DOT no longer provides this service for LPA projects. The Iowa DOT shall not be listed as the agency responsible for checking shop drawings or false work drawings.

QUANTITY AND ESTIMATE REFERENCE SHEET(S)

☐ **Non-participating Quantities.** If there are non-participating items, such as work items beyond the limits of the HBP participation, these quantities shall be shown in a separate column labeled "Non-Participating" on the estimated quantities tabulation. Note: Work outside the limits of the HBP participation, or otherwise ineligible for HBP funds, may be eligible for other types Federal funding. If other Federal funds are used, the quantities associated with these funds shall be shown in a separate column and labeled as appropriate.

☐ **Epoxy Coated Steel.** All Federal-aid bridge projects shall use epoxy coated reinforcing steel in the following locations: deck slab (top and bottom mats), concrete diaphragms adjacent to deck expansion joints, barrier rail, median barriers, integral abutments, or any other area where exposure to de-icing salt is likely. However, this requirement may be waived if either of the following conditions are met: a) the LPA can show that either the extra cost of epoxy coated steel is not cost effective in extending the service life of the structure; or b) the bridge is located on an unpaved road that will not be paved anytime in the foreseeable future. Any such waiver requests shall be submitted to the Iowa DOT Administering Office for review and approval.

SITUATION PLAN or PLAN AND PROFILE SHEET(S)

☐ **Centerline Section.** The following information shall be shown:

1. Centerline stationing at piers and abutments.
2. Elevations, including profile grade, bridge seat, bottom of footing or cap, bottom of backing plank, bottom of wing plank, bottom of deadman, and top of berm.
3. Include "H" dimension of abutments if high abutments are used.
4. Specify the type, size, and length of pile.
5. Show channel excavation.
6. Note the type of bearings and whether they are fixed or expansion.

☐ **Sounding Data.** The sounding data or soil information shall be plotted or shown, including the depth of each layer and a description of the layer. Include the blow counts if they are available. If the soil borings

use an elevation datum that is different than the plan elevation datum, the soil boring and plan elevations shall be related to one another by means of an elevation equation. If soils information is scanned and inserted on the plans, it shall be legible when printed on 11x17 size plan sheets.

☐ **Guard Rail.** If guard rail is used, the layout and connections to the bridge shall be detailed. The appropriate Standard Road Plans BA Series should be referenced for more information.

☐ **Plan View.** The following information shall be shown:
1. Out-to-out of slab or paving notch.
2. Length between centerline abutment bearings.
3. Length of individual spans between centerline of supports.
4. Skew angle of the bridge, if any.
5. Width of the berm.
6. Limits of Class 10 Channel Excavation.
7. Soils test holes.
8. Grid of bridge deck elevations

☐ **HBP Participation Limits.** If the project limits extend beyond the limits of HBP funding participation, the participation limits shall be shown on the plan sheets, including beginning and ending stations. For guidance on determining HBP participation limits, refer to I.M. 2.020, Federal and State Bridge Programs.

☐ **HBP Participation in Deck Overlays.** If an HBP project involves a deck overlay, the plans shall indicate the specific areas of removal of deteriorated concrete. These removals shall be supported by chloride testing results, which shall be submitted to the Administering Office with the project plans. If chloride testing was not conducted, the plans shall require milling the entire deck down to the top mat of reinforcing steel to ensure that all chloride contaminated concrete is removed.

PLAN NOTES (can be on the situation plan, plan and profile, or general notes sheets)

☐ **Existing Structure Notes.** The following shall be included in the notes:
1. The dimensions of the structure.
2. The type of superstructure, floor, and substructure.
3. The location, including its centerline stationing.
4. Specify the LPA, the bridge contractor, or other specifically identified party as responsible for removing the existing structure.
5. Specify how the existing structure will be disposed of. Possibilities include: a) salvage (salvage value not needed on plans, but needed by Office of Contracts if federal funds are involved), b) scrapped, or c) to become the property of the contractor.

☐ **Piling Information.** The following information shall be shown for the pilings:
1. Driving instructions (if different than standard).
2. Specify the bearing required for abutment piles.
3. Specify the bearing required for pier piles.
4. Note if oversize piles are required. If required, give the minimum diameter 3 feet from the butt end of the pile.

☐ **Other Notes.** The following miscellaneous information shall be identified:
1. If Class 24 Excavation is used, describe where it is to be obtained.
2. Specify whether a monolithic or non-monolithic pier cap is to be used and if “cap steel” is required. See Standard Bridge Plan P10A (or P10L for LRFD designs).
3. If berms are required, specify who is to build them.
4. State who is to build the approaches.

MODIFIED STANDARD PLANS OR SPECIAL DETAIL SHEETS

☐ **Drawings.** Modifications to existing standards should provide sufficient detail and notes to clarify the changes made to the standard plan. Any special details should provide the contractor enough information to accurately bid and construct the detailed item. Modified standard plans or special detail sheets shall be included in the plans. If a standard plan is modified, references to the standard plan number and revision date shall be removed.

☐ **Bar Lists.** A reinforcing bar list shall be provided for any special details or modified standard plans.

☐ **Concrete Placement Quantities.** For each detailed item, the quantity of concrete placement required for that item shall be shown.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.520
Subject:	Electronic Bid Item Information	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing document, which is included on the pages immediately following this placeholder page:

- Packet, Index No. 8, BIAS 2000 Information

When I.M. 3.520 is complete, this placeholder page and the existing document referenced above should be removed and replaced with the new I.M 3.520.

BIAS 2000 INFORMATION

BIAS 2000 is a software program developed by the Iowa DOT for use with state and local projects. The BIAS 2000 program allows the user to select bid items from a master list, enter the quantities for each bid item, and then export this data into a variety of formats.

The BIAS 2000 program is used to produce the Trns*Port bid item file. The Trns*Port bid item file is required with the final plan submittal for all city projects and it is strongly encouraged for all county projects. The Trns*Port bid item file contains the bid item and quantity information entered by the designer. This information is used by personnel in the Office of Contracts to prepare projects for the letting process. By providing the bid item information in electronic format, the letting process is more efficient and less prone to data entry errors.

Installation of BIAS 2000:

The BIAS 2000 program is free of charge and can be downloaded from the Iowa DOT's web site. Follow the instructions below to install the BIAS 2000 program:

1. Download the BIAS 2000 self-extracting executable file from the internet.

2. After downloading this file to your computer, run the self-extracting executable file (bias200.exe) by double-clicking on this file in Windows Explorer. This will extract several files, including a setup program (setup.exe), installation instructions (readme.txt), and two MS Word documents containing instructions for use of the program.

3. Run setup.exe to install the BIAS 2000 program on your computer. Follow the instructions listed in the readme.txt file.

4. After successfully installing the program, download the English or Metric master bid item files as appropriate. Place these files on your computer as directed by the instructions given in the readme.txt file.

   Note: The master bid item lists are updated frequently. It is important to ensure that you are using the most current list of bid items prior to using the BIAS 2000 program. When the master lists are updated, revisit the links listed above to obtain the most current list.

Using BIAS 2000:

After downloading and installing the BIAS 2000 software, follow these steps to create and submit the Trns*Port electronic bid item file:

1. Open the BIAS 2000 program. Select the appropriate units for the project (English or metric) and enter the project information (designer, project number, letting month, category number and category description).

2. Select the appropriate bid items from the Master Item List and add them to the Project Item List. Enter the quantities for each bid item selected. After entering all the bid items, quantities and other project information, select "Save Project" from the File pull down menu.

3. Export the bid item information from the saved BIAS 2000 project file into the Trns*Port file format by selecting "Trns*Port" from the Export pull down menu.

4. Submit the Trns*Port electronic bid item file via e-mail at the time of final plan submittal. Contact the administering office for the appropriate e-mail address to use when submitting the Trns*Port file via e-mail.

For help with installation and use of the program, refer to the help files and instructions included with the program. For questions about submittal procedures, please contact the Iowa DOT Administering Office.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: June 18, 2007
From:	Office of Local Systems	I.M. No. 3.605
Subject:	Right-of-Way Acquisition	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for a Local Public Agency (LPA) to acquire right-of-way for State or Federally funded transportation projects. Topics addressed include right-of-way resources, acquisition procedures, and Federal-aid participation in right-of-way costs. This I.M. also includes the following attachments:

Attachment A – Compensation Estimate Procedures
Attachment B – FHWA Authorization of Right-of-Way Costs Flowchart
Attachment C – Early Right-of-Way Acquisition Process Flowchart

Resources

There are numerous Federal and State laws and regulations concerning the acquisition of real property for a transportation projects. The primary Federal law is the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act). The Federal regulations that implement the Uniform Act are found in Part 24 of Title 49 of the Code of Federal Regulations (49 CFR 24). There are also a number of State laws that pertain to transportation projects. The rules that implement the requirements of these laws are found in 761 Iowa Administrative Code, Chapter 111, Real Property Acquisition and Relocation Assistance (761 IAC 111).

Because of the number and complexity of the Federal and State laws and regulations pertaining to right-of-way acquisition, the Iowa DOT Office of Right of Way has provided the Local Public Agency Manual (LPA Manual) to assist local agencies. The LPA Manual provides detailed guidance, forms, documents, and other information for nearly all aspects of the right-of-way process.

Please Note: This I.M. only supplements the information contained in the LPA Manual. LPA staff responsible for right-of-way acquisition should become thoroughly familiar with both this I.M. and the LPA Manual. In addition to the LPA Manual, several other publications and brochures for use by LPAs are available on the Iowa DOT Office of Right of Way web page.

Besides these publications, the Office of Right of Way, Property Management Section has several Local Public Agency Coordinators (LPAC) that are available to assist LPAs with their right-of-way acquisitions. Before beginning any right-of-way activities, the Iowa DOT strongly recommends contacting the appropriate LPAC for assistance. To contact the appropriate LPAC, call the Property Management Section at 515-239-1300 or refer to the Local Public Agency Coordinators web page.

Acquisition Procedures

General

For projects that receive either Federal or State funding assistance in any part of the project, the LPA shall follow the procedures outlined in the LPA Manual. The procedures in the LPA Manual are designed to ensure compliance with both the Federal and State laws. In addition, because the State laws always apply and are very similar to the Federal laws, the Iowa DOT recommends that locally funded projects also follow the procedures in the LPA Manual.

Unless specified otherwise in the project agreement between the LPA and the Iowa DOT, the LPA is responsible to ensure that all right-of-way acquisition activities for the project comply with the applicable Federal and State requirements. To comply with these requirements, it is essential for the LPA to have staff qualified in these procedures, or hire a qualified consultant to provide these services. For more information concerning these qualifications, refer to the “Qualifications of Right of Way Personnel” section in Chapter 1 of the LPA Manual or the appropriate LPAC.

Valuation of Right-of-Way

In general, acquiring right-of-way will require appraisals that are prepared and reviewed by qualified appraisers. However, for minor, uncomplicated acquisitions that do not exceed $10,000, an alternative valuation method

referred to as the Appraisal Waiver or Compensation Estimate may be used. This method is described in Chapter 3 of the LPA Manual. Additional information and instructions are provided in Attachment A – Compensation Estimate Procedures.

Special Considerations for Federal-aid Projects

Before beginning any right-of-way activities on a Federal-aid project, there are several important points to consider:

1. All State and Federal laws pertaining to right-of-way acquisition still apply, even if no Federal funds are used for the costs of acquiring right-of-way.

2. If Federal participation is desired in the costs of any right-of-way activities, those activities may not begin until after written notification of FHWA Authorization is received from the Iowa DOT. The cost of any work that occurs prior to FHWA Authorization is not eligible for Federal participation. For more information, refer to the "Federal Participation in Right-of-Way Costs" section below.

3. Most right-of-way activities may not begin until after written notification of Environmental Concurrence is received from the Iowa DOT. However, a limited number of activities may begin prior to Environmental Concurrence. Refer to the subsections below for an explanation of both types of activities. For more information regarding the Environmental Concurrence process, refer to I.M. 3.112, Environmental Concurrence Process.

4. Negotiations may not begin with a property owner until after the LPA has established and approved the amount of just compensation that will be offered. This amount shall not be less than the fair market value of the property, as determined by either an appraisal, or if appropriate, the Compensation Estimate method.

Right-of-Way Activities Allowed Prior to Environmental Concurrence:

1. Title search and property mapping necessary for completion of the Environmental Concurrence process.

   In order to assess the potential environmental impacts of a project, it may be necessary to obtain some of this information. Such work may be conducted as part of the other preliminary engineering work associated with the environmental reviews or studies.

2. Preparation of cost estimates, property descriptions, and appraisals.

   While this is allowed, the LPA should exercise caution in performing this work. Since the outcome of the Environmental Concurrence process may affect the project's right-of-way needs, such work should only be completed on those parcels that are common to all of the project alternatives currently being considered. In addition, preparing appraisals too far in advance of Environmental Concurrence may require the LPA to update or reappraise by the time negotiations may begin, thereby adding unnecessary time and expense. In all cases, such work completed shall not be given any consideration in selecting the preferred project alternative.

3. Early Acquisition.

   Under certain circumstances, negotiation and acquisition of right-of-way for Federal-aid projects may begin prior to receipt of Environmental Concurrence. These circumstances are limited to two specific situations: 1) hardship acquisitions, and 2) protective buying. For additional information concerning these situations, refer to the "Advanced Acquisitions" section in Chapter 2 of the LPA Manual.

   To request approval to proceed with early acquisitions, follow the process shown in Attachment C – Early Right-of-Way Acquisition Process Flowchart. The early acquisition request shall also include the following:
   - A cover letter or e-mail that includes the Iowa DOT project number and a general description of the project.
   - If available, right-of-way plan sheets showing the parcels to be acquired, identified by property owner name or parcel number.

- For each parcel requested, include a description that includes the property owner's name, address, and parcel number (if right-of-way plans have been developed).
- If Federal-aid reimbursement will be requested for the costs of early acquisitions, a cost estimate that includes the acquisition and any related incidental costs for each parcel.
- For each parcel requested, include a copy of page 2 of the Concept Statement (Form 517001) with questions 9.a-9.e completed, as they pertain to that parcel. To complete these questions, refer to I.M. 3.105, Concept Statement Instructions. For more information regarding potential historic properties, refer to I.M. 3.112, Environmental Concurrence Process and I.M. 3.114, Cultural Resource Regulations.
- For each parcel that is requested on the basis of hardship to a property owner, include a written request, signed and dated by the property owner, that a) demonstrates a hardship on the basis of health, safety, or financial reasons; and b) documents an inability to sell the property because of the proposed project, at a fair market value, and within a time frame that is typical for other properties that will not be impacted by the project.
- For each parcel that is requested on the basis of protective buying, include sufficient documentation to demonstrate that development of the property is imminent and such development would limit future development of the proposed project (e.g., development would result in significantly higher costs to acquire the property).

Right-of-Way Activities Not Allowed Prior to Environmental Concurrence:

1. Negotiations with affected property owners (except as part of an approved early acquisition).

   As part of the public involvement process, affected property owners should be made aware of possible impacts to their property. However, such contacts may not include any discussions concerning the details of a possible acquisition, such as the amount of compensation or other terms of a potential offer.

2. Acquisition of any property rights (except as part of an approved early acquisition).

3. Relocation of persons or businesses (except as part of an approved early acquisition).

Federal Participation in Right-of-Way Costs

To request Federal participation in right-of-way costs, follow the process illustrated in Attachment B – FHWA Authorization of Right-of-Way Costs Flowchart. Additional details and guidance concerning this process is provided below.

Eligible Activities and Costs

In general, Federal funds may participate in the costs incurred by the LPA in acquiring right-of-way necessary for the project, provided FHWA Authorization has been obtained, Environmental Concurrence has been received, and the appropriate acquisition procedures have been followed. In most cases, eligible costs are limited to the direct costs of right-of-way acquisition. Several types of eligible costs are further described below:

1. Right-of-way services.

   Right-of-way services include the cost of all activities necessary to acquire the project right-of-way. Examples of such services include conducting negotiations and / or acquisitions, preparing preliminary surveys or plats, appraisals, title searches, property descriptions, or purchase contracts. These services may be provided by either LPA staff or by a consultant, provided they possess the necessary experience and qualifications.

   To request Federal-aid participation in the cost of right-of-way services provided by an LPA, follow the process outlined in I.M. 3.310, Federal-aid Participation in In-House Engineering. If the LPA desires to receive Federal reimbursement for its indirect costs, the indirect costs must be developed in accordance with the requirements of the Office of Management and Budget (OMB) Circular A-87. This requires submittal of a cost allocation plan for review and approval by the Iowa DOT and the FHWA. If Federal participation in indirect costs will be requested, contact the Administering Office for assistance.

   If the Federal-aid participation in the cost of right-of-way services provided by a consultant is desired, and those services will be provided as part of a contract that includes architectural or engineering services,

the contract must be obtained using a qualifications-based selection process. In this case, follow the process outlined in I.M. 3.305, Federal-aid Participation in Consultant Costs.

If the right-of-way services are not part of a contract that includes architectural or engineering services, then the procedures outlined in I.M. 3.305 are recommended, but not required. Contracts that involve only right-of-way services may be obtained without using a qualifications-based selection process.

2. Real property acquisition.

   These include the actual costs paid by the LPA to secure the title or necessary rights to the property. In general, only property that is actually incorporated into the project is eligible for Federal participation. However, there are a few exceptions, as listed below:
   - Permanent or temporary easements outside the project right-of-way
   - Property acquired for storage of construction materials
   - Acquisitions of property to a logical boundary
   - Property acquired for disposal of hazardous materials
   - Property acquired for environmental mitigation or banking
   - Property acquired for last resort housing

   In addition to the actual costs of property acquisition, costs incidental to such acquisitions are also eligible. These include:
   - Preliminary surveys and plats
   - Appraisals and review appraisals
   - Right-of-way cost estimates
   - Relocation planning
   - Right-of-way plans
   - Title work
   - Administrative settlements made in accordance with 49 CFR 24.102(i), legal settlements, court awards, and costs incidental to the condemnation process
   - Other costs directly related to real property acquisition

3. Relocation assistance.

   These include the relocation assistance payments required by 49 CFR 24. If State laws require payments in excess of those required by the Federal regulations, those payments are also eligible. For more information about relocation assistance payments, refer to Chapter 5 of the LPA Manual.

4. Damages.

   These include the reduction in value to remaining real property resulting from a partial acquisition.

5. Property management.

   These include the LPA's net costs to manage real property prior to and during construction to provide for maintenance, protection, and the removal and disposal of improvements upon the property, until final project acceptance. For more information, refer to Chapter 7 of the LPA Manual.

6. Uneconomic remnants.

   These include the costs of acquiring the remainder of a partial property acquisition for the project, when required by the Uniform Act. Note: Disposal of uneconomic remnants acquired by the LPA may require a credit to the Federal funds used. For more information, see the discussion under the "Excess Right-of-Way" subsection below.

7. Access rights.

   These include the costs of obtaining full or partial control of access to an existing highway, as allowed by applicable State laws.

8. Utility and railroad property.

These include the costs of providing replacement right-of-way for railroads or utilities when their operations or facilities are impacted by the project's right-of-way needs. Non-operating utility or railroad property required for the projects is also eligible, and shall be acquired in the same manner as privately owned property.

FHWA Authorization Request

The LPA's request for FHWA Authorization shall include the following:

1. A cover letter or e-mail that includes the Iowa DOT project number and a general description of the project.
2. A description of the parcels to be acquired that includes the property owner's name, address, and parcel number for each parcel.
3. Plan sheets showing the parcels to be acquired, identified by property owner name or parcel numbers.
4. A cost estimate that includes both a total cost and a breakdown of the acquisition and any related incidental costs for each parcel.

Ordinarily, the request should include all parcels that will be acquired for the project. If for any reason the request does not include all parcels, the LPA must recognize that authorization for any remaining parcels will have to submitted separately, and the costs associated with those remaining parcels may not be incurred until a subsequent FHWA Authorization request is submitted and approved. If the LPA proceeds with any activities associated with parcels not already authorized, the cost of those parcels will not be eligible for Federal participation. *Therefore, the Iowa DOT strongly recommends that requests for FHWA Authorization of right-of-way costs include all parcels to be acquired.*

Reimbursements

After authorized and eligible costs have been paid by the LPA, a request for Federal-aid reimbursement may be filed with the Iowa DOT Administering Office. The LPA's request for reimbursement of right-of-way costs shall include the following:

1. An original, signed cover letter that includes the Iowa DOT project number and a general description of the project. The cover letter should also include a statement that all costs submitted for reimbursement have been incurred in accordance with the applicable Federal and State requirements and have not been previously requested for reimbursement.

2. An itemized statement of costs requested for reimbursement, include a description for each.

3. Documentation to support the costs requested for reimbursement, as described below:
   - For acquisitions of property, include copies of the executed purchase agreements that show the amount paid by the LPA.
   - For right-of-way services provided by the LPA, include copies of timesheets that show the hours worked on the project by LPA staff members, their cost rates, and if previously approved, the associated indirect costs.
   - For right-of-way services provided by a consultant, and other direct incidental right-of-way costs, include copies of the invoices received and copies of the check register showing the payments made for each.

Excess Right-of-Way

If Federal funds participate in the acquisition of right-of-way, and that right-of-way is later disposed of because it is no longer needed for the project, a corresponding credit to the Federal share of the costs of such right-of-way may be required. Therefore, before acquiring any excess right-of-way, the LPA shall consult with the Administering Office. For additional information, refer to the "Other Useful information" section in Chapter 7 of the LPA Manual.

Compensation Estimate Procedures

The central premise of the Compensation Estimate procedures is that they should only be used for minor, uncomplicated acquisitions. Therefore, before using the Compensation Estimate procedures, the LPA should first determine whether the parcels to be acquired meet this criteria. To aid in this determination, refer to the "Checklist for Determining Complex Parcel for Appraisal Purposes" located in Index 1 of the LPA Manual. Refer also to the additional guidance provided in Chapter 3 of the LPA Manual. The checklist consists of Yes/No type questions. A "Yes" answer to any of questions indicates additional review should be done before deciding to proceed with a Compensation Estimate.

Because of the qualifying criteria, the Compensation Estimate method is used most often in rural areas. However, if the situation warrants, this method may also be used for projects in urban areas.

There are situations where a non-typical condition may occur in what is otherwise a simple, uncomplicated acquisition. An example of this type of situation might involve leaving a well on the LPA right-of-way when it is possible to construct the project without destroying the well. As a condition of the right-of-way negotiation, the LPA may allow the property owner to use the well after the construction project is completed. In such cases, a request to use the Compensation Estimate process should be made in writing to the Iowa DOT Administering Office. This request should state the reasons for using the Compensation Estimate process and include documentation to support those reasons. Upon receipt, the Administering Office will consult with the appropriate LPAC and advise the LPA whether the request is approved or not.

Completing the Compensation Estimate

An example Compensation Estimate form is provided in Index 3 of the LPA Manual. The person that prepares the Compensation Estimate, including simple acquisitions and minor or cost-to-cure damages such as fences, wells, moving small buildings etc., does not need to be full-time or experienced appraiser. All that is required is a working knowledge of how to determine land values from available land sale market information, and the ability to identify, estimate, and document minor or cost-to-cure damages. The estimator should also serve as the acquisition agent.

Compensation Estimate Right-of-Way Record Sheet

To provide assistance in following and documenting the necessary steps for acquiring a parcel using the Compensation Estimate process, the "Compensation Estimate Right-of-Way Record Sheet" has been developed (see last page of this attachment). This record sheet shall be included with the parcel documentation in the right-of-way file for the project. Instructions for completing the record sheet are provided below:

Heading — All of the information should be completed. If there are no tenants involved, indicate "None" in the provided space, do not leave it blank.

Step 1 — As soon as feasible, the owner and tenant (if applicable) shall be notified of the LPA's interest in acquiring the real property and the basic protections (right to just compensation and procedures involved) provided to the owner by law. At this point, the LPA should provide the owner with a statement of the property owner's rights, such as included in the Office of Right of Way brochure titled, "Highways and Your Land".

Step 2 — As required by Federal regulations, negotiations or acquisitions of right-of-way shall not begin until after the Iowa DOT has issued Environmental Concurrence. Environmental Concurrence will not be given until after submittal of the Concept Statement and completion of the necessary environmental studies or reviews.

Step 3 — The LPA's determination of just compensation must be established prior to beginning negotiations with the property owner. The process should include an inspection of the property. It is not necessary that the estimator offer the property owner or property owner's representative, an opportunity to be present during the property inspection.

Step 4 — In preparing a Compensation Estimate, the LPA may use the "assessor's method" in the valuation of minor strips of farmland with no major damages.

The assessor's method involves someone knowledgeable of land values reviewing typical farmland sales in the county each year and determining a fair market value for the different types of farmland and, if desired, calculating a factor which when taken times the assessed valuation will obtain these values. At the beginning of the calendar year, these calculations along with the justifications shall be submitted to the Board of Supervisors for review and approval. The values and / or factors approved by the Board shall be based on the fair market value of farmland in the county for that year. These values along with the justifications must be documented in the board minutes each year.

While the assessor's method, when done properly, is acceptable, the Iowa DOT and the FHWA recommend simply comparing the land to be acquired with two or three recent comparable sales to establish the value. In some cases, this may involve less time and resources than developing a factor-based system such as the assessor's method.

LPAs are encouraged to complete the compensation estimate in the presence of the owners if it is feasible to do so. The written offer may be presented to the owner at this time to expedite the acquisition process.

Step 5 A Compensation Estimate requires administrative approval by someone other than the person who produces the estimate. This person must not be the estimator or the negotiator; and must be a LPA official knowledgeable in land values and have authority to grant administrative approval. The County Assessor could serve in this capacity. If the written offer is made to the owner during the completion of the Compensation Estimate, the administrative approval will follow but should be completed before the acquisition agreement is approved by the LPA.

Step 6 The LPA may make a written offer to the owner to acquire the property for the full amount believed to be just compensation at the same time as the Compensation Estimate is completed (Step 4). Along with the initial written purchase offer, the LPA shall include a copy of the Compensation Estimate form. If multiple owners at different locations are involved, this step may occur after the Compensation Estimate and Administrative Approval steps are completed.

Step 7 The negotiator cannot be the same person as the administrative reviewer but should be the same person as the estimator. The project files shall contain the negotiator's notes on each parcel. The notes shall contain, as a minimum, the dates of contacts, persons present, and a summary of the matters discussed during the contact.

Step 8 The owner shall be given reasonable opportunity to consider the offer and present material (if any) which the owner believes is relevant to modify the offer.

Step 9 Tenants (renters) have an interest in real estate (both for written and oral leases), which must be acquired, on areas needed for right-of-way, temporary easements, permanent easements and fee acquisitions. Tenants should be contacted within a short time (a week to ten days) after the owners have been contacted.

Normally, on short term and farm leases a tenant contract with a minimum value is sufficient. However, items such as the value of the growing crop, field preparation, etc., may, in certain instances, be added to tenant contract.

On major tenant interests, where the appraisal contains a suggested breakdown for the owner and the tenant, both names should appear on the contract or warrant allowing the landlord and tenant to determine the breakdown for their respective interests.

Step 10 If the offer, or a revised offer, is rejected and the LPA intends to acquire the property by eminent domain, it should institute formal condemnation proceedings. The condemnation cannot be speeded up or delayed as a means of coercing the owner to sell. The LPA shall pay the owner's reasonable costs (attorney, appraisal, etc.) if condemnation is abandoned or, as determined by the Compensation Commissioners, if the award is greater than 110 percent of final offer.

Step 11 Prior to taking physical possession of the property to be acquired for right-of-way, the property owner must be paid (warrant issued or the money made available by deposit with the Sheriff as prescribed by law) for the property.

Step 12 The owner should be given ample notice of the possession date. In the case of someone lawfully occupying a dwelling, business, or a farm operation building to be acquired, at least a 90-day written notice must be given.

Compensation Estimate Right-of-Way Record Sheet

Local Public Agency (LPA) _____ Project Number _____

Parcel No. _____ Owners _____

Tenant _____

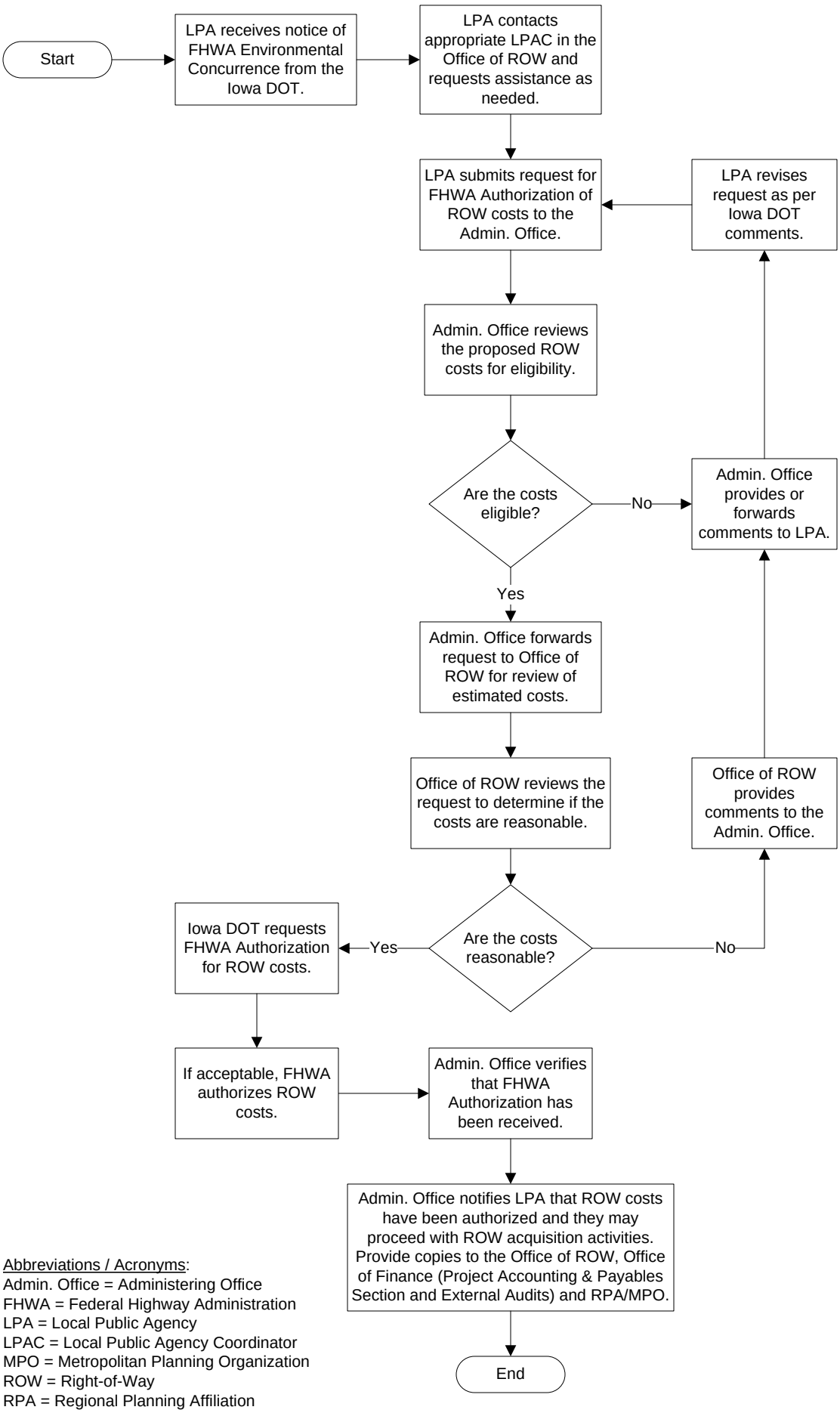
Step Number	Dates Month--Day--Year	Procedure
1	_____	Owner and Tenant (if applicable) notified of LPA's interest in acquiring real property (as soon as feasible).
2	_____	Environmental Concurrence from Iowa DOT (must be received prior to any right-of-way negotiations)
3	_____	Compensation Estimate inspection conducted at property
4	_____	Compensation Estimate completed, by _____.
5	_____	Administrative approval completed, by _____ _____ (must NOT be the same person as the estimator or negotiator).
6	_____	Written offer and written statement of the basis for the offer given to owner.
7	_____	Owner (and tenant if applicable) contacted, by _____ _____ as negotiator (may be the same person as the estimator).
8	_____	Offer accepted/rejected by owner.
9	_____	Offer accepted/rejected by tenant.
10	_____	Condemnation notice (if agreement is not reached). Write N/A if not applicable.
11	_____	Payment made to owner or, for condemnation, deposited with the court.
12	_____	Possession of property.

NOTE: This sheet must be completely filled out for each parcel and attached to parcel documentation in right-of-way project file.

_____
Printed Name and Title of LPA Official

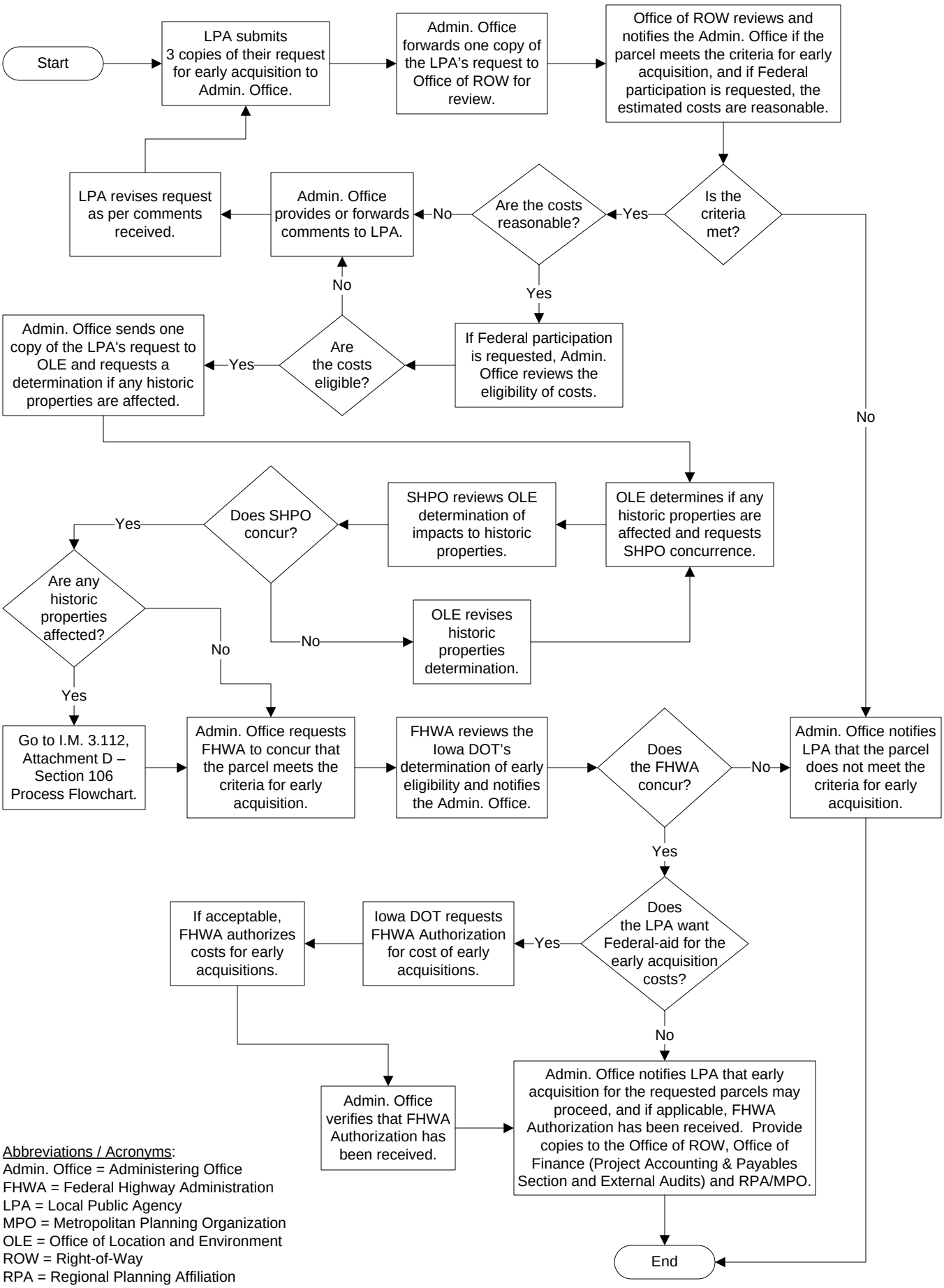
_____
Signature of LPA Official

FHWA Authorization of Right-of-Way Costs Flowchart



Abbreviations / Acronyms:
Admin. Office = Administering Office
FHWA = Federal Highway Administration
LPA = Local Public Agency
LPAC = Local Public Agency Coordinator
MPO = Metropolitan Planning Organization
ROW = Right-of-Way
RPA = Regional Planning Affiliation

Early Right-of-Way Acquisition Process Flowchart



Abbreviations / Acronyms:
Admin. Office = Administering Office
FHWA = Federal Highway Administration
LPA = Local Public Agency
MPO = Metropolitan Planning Organization
OLE = Office of Location and Environment
ROW = Right-of-Way
RPA = Regional Planning Affiliation
SHPO = State Historical Preservation Officer

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: December 11, 2008
From:	Office of Local Systems	I.M. No. 3.640
Subject:	Utility Accommodation and Coordination	

Contents: This Instructional Memorandum (I.M.) provides instructions for a Local Public Agency (LPA) to accommodate utilities located on non-primary highway rights-of-way and recommended procedures for coordinating with utilities located in or adjacent to such roadways that are affected by LPA transportation projects. This I.M. also includes the following attachments:

Attachment A – Utility Coordination Flowchart
Attachment B – Utility Coordination Checklist (also available in Microsoft Word format)

Definitions

The terms used in this I.M. have the same meaning as defined in the Policy for Accommodating Utilities on the County and City Non-Primary Federal-aid Road System, unless specifically noted otherwise.

Primary Highways

As noted in the Contents section above, this I.M. is focused on utility accommodation and coordination for non-primary highways. Nevertheless, because LPAs are often involved with cooperative Primary highway projects, some guidance is included here. Cooperative projects are those where both the Iowa Department of Transportation (Iowa DOT) and LPA are involved, financially or otherwise, in the development and / or construction of the project. For such projects, the LPA may be responsible for some or all of the utility coordination activities, if so designated in the project agreement. In such cases, the LPA shall follow the Iowa DOT Utility Accommodation Policy. The LPA shall also follow the Iowa Guide to Utility Coordination, which provides additional detailed guidance and procedures for coordinating with utilities affected by Primary highway projects.

For additional assistance or questions related to Primary highway utility accommodation or coordination, contact the appropriate District Utility Coordinator or utility relocation staff, as listed on the Iowa DOT Utility Coordination Contacts web page.

Utility Accommodation

In accordance with 23 CFR 645 B, the Iowa DOT is required to develop and implement a policy for accommodating utilities located on all Federal-aid highway rights-of-way. Federal-aid highways include roadways of all classifications, except local roads and rural minor collectors, as designated on the Federal Functional Classification maps provided by the Iowa DOT.

In response to this Federal requirement, the Iowa DOT has developed, with input from local governments and utility companies, and with the approval of the Federal Highway Administration (FHWA), a Policy for Accommodating Utilities on the County and City Non-Primary Federal-aid Road System. This policy shall be followed for all projects located on non-primary Federal-aid highways. The Iowa DOT recommends LPAs use a similar policy and / or permitting procedures for other non-primary roadways under their jurisdiction.

Utility Coordination

Introduction

To effectively coordinate utility adjustments, it is critical for LPAs to work with utilities affected by their transportation projects using a pro-active, cooperative approach. This approach should have as its foundation timely and frequent communication that provides reliable information regarding the nature and schedule of proposed transportation projects. Likewise, it is critical that utility companies respond by providing timely and accurate information concerning the anticipated impacts to their facilities. Utilities should also cooperate with LPAs to adjust their facilities when needed, preferably in advance of project construction if possible. If this is not possible, utilities should work in close coordination with the LPA and / or their contractors to adjust their facilities in a timely manner. In summary, both parties are responsible to ensure effective utility coordination throughout the development and construction of transportation projects.

Therefore, the Iowa DOT strongly recommends both LPAs and utilities implement the following procedures for utility coordination on all transportation projects that require utility adjustments. These procedures are presented in a recommended sequence, beginning with the project concept and continuing through construction. Refer to Attachment A – Utility Coordination Flowchart, for a graphical summary of these procedures. Refer also to Attachment B – Utility Coordination Checklist, which may be used to track and document completion of the major milestones in the utility coordination process. Attachment B is also available in Microsoft Word format.

When considering the utility coordination procedures outlined below, please note the following:

- These procedures are presented as "best practices" of utility coordination. They do not represent a legislative or regulatory requirement, except where indicated otherwise.
- These procedures are not intended to supersede the requirements of the LPA's existing utility accommodation policy and / or utility permit process.
- The timeframes included below are intended to serve as general guidelines. Because the circumstances of each project may vary significantly, it is not possible to specify timeframes that will fit every situation. Some projects may require significantly more time than what is suggested; others may require significantly less. When planning a project's schedule, the following items are especially important to consider:
    - Lead times for delivery of certain materials can greatly extend the time required to complete the utility adjustments. Examples include steel poles, fiber optic cable, high pressure pipelines, and certain types of conduits or manholes. Some of these materials may require up to 6 months lead time.
    - If replacement property or easements must be acquired for utilities, this should be factored into the project schedule.
- These procedures are not intended for use in emergency situations. Emergency work involving utilities also requires close coordination, but it may be neither possible nor prudent to follow all these procedures.
- These procedures rely heavily upon proper notice and communications. Both LPAs and utilities may want to consider the use of registered mail to ensure that notices or other critical communications have been received.
- If a utility fails to respond or participate, it does not affect the LPA's ability to proceed with the project. In such cases, the LPA should carefully document its efforts to contact the potentially affected utilities.

Project Concept

During this stage of project development, the LPA develops the general scope and type of work. For Federal-aid projects, the project concept shall be documented using the Concept Statement (Form 517001), in accordance with I.M. 3.105, Concept Statement Instructions. For non-Federal-aid projects, the project concept can be documented using a letter or e-mail. In either case, as a minimum, the project concept should include the following:

1. A general description of the proposed work.
2. The proposed project limits. If possible, the physical limits should be designated by a specific route or street name with approximate beginning and ending points. If several routes or alternatives will be considered, the LPA should identify a general corridor in which the project will likely be constructed.
3. A location map showing the proposed project limits or corridor.
4. If available, the proposed roadway or street typical section.

Initial Utility Research

During this stage of project development, the LPA should research available records to determine if any utilities may exist within the project limits or corridor, as defined by the project concept. Possible sources of information may include: previously approved utility permits or agreements, field investigations or surveys, or the Design Request System provided by the Iowa One Call service.

The LPA should also prepare a preliminary list of utility contacts for the project. Contact information may be obtained using the Iowa One Call Design Request System, the Iowa DOT's Utility Company Contacts, or from previous utility company contacts.

At this point, it is not necessary to determine if utilities will be affected. Utilities should indicate whether or not they are affected in response to the Initial Utility Notification or at the Utility Coordination Meeting.

Initial Utility Notification

All utilities that may be within the project limits or corridor should be notified as early as possible. As required by Iowa Code Section 318.9, utilities in the highway right-of-way that must be adjusted shall be provided a minimum of 90 days notice. However, in order to allow adequate time for the utility coordination activities outlined in this I.M., the LPA should send the Initial Utility Notification approximately 4 to 6 months prior to when utility adjustments need to begin.

After determining which utilities may be present, the LPA should notify those utilities in writing and request them to confirm if they have facilities in the project area. If so, the LPA should request utilities to provide available information regarding the location of their facilities. At a minimum, the LPA's written notice should include the following:

1. Date of the notice
2. Project concept information (as described above)
3. LPA contact information (name, address, phone number, and e-mail of LPA or consultant staff person responsible for utility coordination)
4. Date the requested utility information should be provided (should allow at least 30 days from receipt of notification)
5. A request to confirm the name and contact information of the appropriate utility contact person for the proposed project.
6. If known, the anticipated project schedule (approximate letting date and / or beginning of construction)
7. If scheduled, the date, time, and location of the Utility Coordination Meeting

Utilities should acknowledge the Initial Utility Notification within 14 calendar days of receipt. Within 30 calendar days of receipt, utilities should respond by either confirming they do not have any facilities within the proposed project limits or by providing available information concerning their facilities. This information should include a general description of the type of facilities present and their location. The location may be indicated by providing utility system or plant maps, Geographic Information System (GIS) data, or other available data.

Utility Coordination Meeting

In accordance with Section 1 of House File 2651, 82nd General Assembly (Iowa Code Section 306.47), the LPA is required to meet with affected utilities during the design phase of the project. To comply with this requirement, the LPA shall invite all utilities within the project limits or corridor to at least one Utility Coordination Meeting. Additional meetings may be necessary, depending on the impacts to utilities and the complexity of the project. This meeting may be combined with other site visits and / or project design meetings, but adequate time must be allowed for discussion of utilities.

Notice of the Utility Coordination Meeting may be provided separately or in combination with the Initial Utility Notification. In either case, notice of the meeting should be provided at least 14 calendar days in advance. Use of certified mail is recommended. The notice should include the following:

1. The date, time and location of the meeting.
2. The anticipated project schedule (approximate letting date and / or beginning of construction).

The Utility Coordination Meeting has several objectives:

- provide an opportunity to confirm or establish the appropriate contact persons for both the LPA and the utility companies
- review the project concept
- review the proposed schedules of both the transportation project and possible utility adjustments, including anticipated lead times for delivery of materials
- communicate the goals and objectives of the project
- help identify the location of existing utility facilities
- clarify the status of utilities facilities (i.e., whether they are active, abandoned, or planned for removal, relocation or abandonment in the near future)
- discuss options that would limit the impact of the project construction on utility facilities
- provide an opportunity for the affected utilities to discuss and coordinate adjustments of their facilities with one another

In order to allow meaningful input from the utilities, the Utility Coordination Meeting should be held early in the design phase of the project. If held too late, it may be difficult to adjust the project plans without incurring additional costs and / or delays. Therefore, the Utility Coordination Meeting should be held approximately 3 to 5 months prior to when utility adjustments need to begin.

The Utility Coordination Meeting should be well documented, including an attendance list and a written summary of the issues discussed and / or decisions reached. After the meeting, the LPA should prepare and distribute the meeting notes to all attendees and retain a copy for their project file. Copies of the meeting notes should also be sent to all invited utilities that did not attend.

Preliminary Plan Submittal

For projects that will be let through the Iowa DOT, the preliminary plans shall be developed in accordance with I.M. 3.405, Preliminary Plans. If available, the information provided by the utilities should be used by the LPA's designer to minimize impacts to utility facilities, even for those utilities that are required to move at their own expense. This does not mean LPA designers should attempt to avoid utility facilities at all cost, but simply that designers should strive to minimize the overall cost of the project to the general public, taking into consideration the potential costs to both the LPA and the utilities.

Preliminary plans should be complete enough to allow utilities to determine possible impacts to their facilities and begin preparing their work plan, including design of any necessary facility adjustments. As a minimum, preliminary plans submitted to utilities should include the following information:

1. Title sheet, including a location map, type of work, project number, and other general project information
2. Typical sections
3. Horizontal and vertical geometry, such as plan and profile sheets, elevations, or grading plans
4. Existing and proposed right-of-way and easements
5. Cross sections
6. If available, the locations of existing utility facilities
7. Utility contact information

The LPA should submit preliminary plans to all utilities within the project limits or corridor. The submittal should be accompanied by a cover letter that includes the following:

1. The anticipated project schedule (proposed letting date and / or beginning of construction).
2. A request that all affected utilities prepare a Utility Work Plan and submit it to the LPA for review.

Utility Work Plan

If its facilities need to be adjusted, the utility should prepare and submit a Utility Work Plan to the LPA within 30 calendar days after the receipt of the preliminary plans. If submittal within 30 days is not possible, the utility should notify the LPA and provide an approximate date when the Utility Work Plan will be submitted. As a minimum, the Utility Work Plan should include the following information:

1. A narrative description of the work to be performed
2. A drawing showing the existing and proposed locations of the utility facilities in relation to the transportation project improvements, including the existing and proposed right-of-way
3. If the proposed utility adjustments are dependent on another utility owner or require coordination with other entities
4. If the proposed utility adjustments can be accomplished prior to beginning construction of the transportation project or if work must be coordinated with transportation project contractor
5. The estimated number of working days to complete the utility adjustments, including the anticipated lead time for delivery of materials
6. If permits or approvals from other agencies are required to complete the utility adjustments, a list of such permits or approvals and the estimated date such approvals will be obtained
7. If the utility adjustment is reimbursable, copies of documents that verify the utility has a property interest in its current location, and a detailed cost estimate for the utility adjustments (for more information see the "Utility Compensation" section below)

Note: If some or all of the above information is required as part of LPA's utility permit request or application form, and such a permit is required by the LPA, the permit request or application form, along with other information as appropriate, may be used to document the Utility Work Plan.

Within 14 calendar days of receipt, the LPA should review the Utility Work Plan and provide comments to the utility. If the LPA's review will require more than 14 days, the LPA should notify the utility and provide an approximate date when comments will be provided. The LPA should review each Utility Work Plan for compatibility with the following:

- the appropriate utility accommodation policy, if any
- the project requirements, such as design or environmental restrictions
- the project schedule
- other Utility Work Plans (if multiple utilities are involved)

If the Utility Work Plan is acceptable, the LPA should promptly notify the utility. If the Utility Work Plan is not acceptable, the utility should revise and resubmit its Utility Work Plan within 14 calendar days of receiving notice from the LPA.

Utility Compensation

Utilities may or may not be entitled to receive compensation for the cost of adjusting their facilities, depending on the terms of the applicable utility accommodation policy and / or utility permit. Utilities located on existing rights-of-way for Primary highways and non-primary Federal-aid highways must adjust their facilities at their own expense. Typically, this is also true for utilities located in the rights-of-way of other roadways; however, the LPA should verify the terms of its policies and / or permits for such roadways.

If a utility is entitled to compensation, an agreement should be prepared. This agreement should include the following as a minimum:

1. A description of the work to be performed by the utility
2. A detailed cost estimate
3. The method by which the work will be performed (e.g., utility forces, LPA forces, or by contract)
4. The method of compensation (e.g., actual cost, unit cost, lump sum, etc.)
5. Procedures for determining and applying credit for betterments and salvaged materials

For additional guidance concerning the content of utility agreements, refer to I.M. 3.650, Federal-aid Participation in Utility Relocations. The procedures outlined in I.M. 3.650 are required for Federal-aid projects if the LPA plans to seek Federal-aid reimbursement for the cost of compensating utilities for the adjustment of their facilities. Although not required, the Iowa DOT recommends following the same procedures for non-Federal-aid projects, or if Federal funds will not be used for reimbursement of utility compensation costs.

If a utility is entitled to compensation, the LPA and utility should work together to draft an agreement. Most utilities have a standard form of agreement that may be used. A sample form of agreement used by the Iowa DOT is also available upon request. If Federal-aid reimbursement of the utility compensation costs will be sought, the LPA should also submit a draft agreement to the Iowa DOT for review and FHWA authorization, as per I.M. 3.650. A mutually acceptable compensation agreement should be executed before notice to proceed with utility adjustments is given to the utility. For all projects let through the Iowa DOT, a fully executed compensation agreement is required before a project may enter the letting process.

Acquisition of Utility Property Rights

If acquisition of utility property interests are required by the transportation project, the LPA must secure the necessary property interests in the same way as other private property required for the project. Typically this occurs when the utility is located in its own easement or property outside the existing highway right-of-way.

In such cases, after the utility property interests have been acquired, the LPA should send the utility a Disclaimer of Interest for the affected utility properties. After execution by both the utility and the LPA, the LPA should file the Disclaimer of Interest with the appropriate County Recorder. To obtain an example Disclaimer of Interest form, contact the appropriate District Utility Coordinator (see "Contact Information" section below). The compensation agreement should also contain a provision requiring the utility to execute a Disclaimer of Interest, as described above.

If the utility elects to relocate to a new easement or property outside of the proposed highway right-of-way, the cost of such replacement property rights should be included in the compensation agreement. Either the LPA or the utility may be responsible for acquiring the replacement utility easement or property, as specified in the compensation agreement. If the LPA is responsible for obtaining a new easement, it should coordinate

closely with the utility to ensure the necessary restrictions are included (e.g., limits on placement of trees or other landscaping items by the property owner).

Utility Permits

For any utility facilities that will be located within the highway right-of-way, the LPA should require the utility to obtain a permit. A permit review and approval process is important because it helps effectively manage and coordinate the use of the highway right-of-way by utilities. This is important for both new installations (i.e., facilities not currently located within the right-of-way) and adjustments of existing utility facilities (i.e., facilities already located within the right-of-way).

In either case, the LPA should be careful to review permit applications for potential conflicts with upcoming highway projects. As a minimum, this should include all projects that are currently programmed, and any others not programmed but anticipated within the foreseeable future. If a permit request may be affected by an upcoming transportation project, the LPA should consider delaying issuance of the utility permit until the transportation project design has been finalized. This reduces the possibility that new utility installations or utility relocations will be affected by the proposed transportation project.

The level of review performed by the LPA will depend on the stage of development of the proposed project(s). If a project is still in the planning or conceptual stage, the exact type and limits of construction are not known; therefore, the reviewer may only be able to check for obvious conflicts with the proposed highway improvements. If the proposed project is in the preliminary or final design stage, a more detailed review can be performed. The following items, as applicable, should be reviewed for utility permit requests:

1. Compliance with the appropriate utility accommodation policy.
2. Check locations of proposed utility facilities with respect to the proposed highway improvements, including: slope intercept lines, fill heights, driveways, culvert or sewer installations, bridge locations, construction staging, and areas for storage of materials and / or equipment. Any conflicts should be resolved before granting a permit.
3. Determine if above-ground installations will conflict with the recommended clear zone. If so, the facilities should be redesigned to be located outside the recommended clear zone if possible. For additional guidance, refer to I.M. 3.215, Clear Zone Guidelines.
4. Determine if above-ground installations may conflict with aerial clearances required for construction cranes. If so, they should be redesigned to allow adequate room for construction operations.
5. Determine if above-ground installations will interfere with the desirable sight distance. If so, they should be redesigned to eliminate or minimize sight distance restrictions.
6. If the utility's plan includes proposed future expansion of utility facilities, check the proposed future expansions for possible conflicts.
7. Determine if the utility's plan contains appropriate erosion control measures.

Upon receipt of a utility permit request, the LPA should review and provide a response within 14 calendar days. If acceptable, the LPA should document the permit approval by signing the permit application form, or if a form is not used, by sending a letter of approval to the utility. If the request is not acceptable, the LPA should explain the reasons why. The utility should then revise their permit request as needed and resubmit.

Final Plan Submittal

For projects that will be let through the Iowa DOT, the final plans shall be developed in accordance with I.M. 3.505, Check and Final Plans. For locally let projects, the final plans shall include all of the information normally included in the bid documents for local lettings. In either case, the plans should also include the contact information for all utilities with facilities located on the project.

In addition, if some or all of the utility adjustments will occur during construction of the transportation project, the final plans should explain the type of coordination that will be required. This information may be included on the plans and / or as an attachment to the bid documents. As a minimum, this information should include:

1. The names of affected utilities
2. The type and size of the affected facilities
3. The approximate location of utility facilities and any known utility conflicts
4. A summary of the work to be completed by the utilities, as specified in their approved Utility Work Plans.

When final plans are complete, the LPA should send a copy to all utilities with facilities within the project limits. The LPA's final plan submittal should be accompanied by a cover letter that includes the following:

1. The anticipated project schedule (proposed letting date, anticipated beginning of construction, and contract period, if known).
2. If scheduled, the time, date, and location of the pre-construction meeting.

If significant changes to the type or location of the transportation improvements have been made since the preliminary plan submittal, these should be identified. If easily described, this information can be included in the cover letter. If the changes are more complex, the plans should be marked-up to indicate the changes using highlighter, clouding, or other visible means.

Work Plan Revisions

If changes to the plans require changes to a previously submitted or approved Utility Work Plan, the utility should notify the LPA and submit a revised Utility Work Plan for review and approval within 14 calendar days of receipt of the final plans. Within 14 calendar days of receipt from the utility, the LPA should review the revised work plan and provide comments or notification of approval.

If the utility has already completed adjustments to its facilities after receipt of notice to proceed from the LPA, and the changes to the final plans will require the facilities to be adjusted again, the utility should be entitled to compensation for the costs of such adjustments.

Notice to Proceed

After the Utility Work Plan has been approved, and after the compensation agreements and utility permits have been approved, as applicable, the LPA should provide written notice to proceed to each affected utility. Such notice should be provided at least 14 calendar days prior to when the utility adjustments must begin.

Please Note: For Federal-aid projects, Environmental Concurrence, and if Federal reimbursement is desired, FHWA Authorization of utility costs, must be obtained prior to beginning construction of any utility adjustments. For more information, refer to I.M. 3.650, Federal-aid Participation in Utility Relocations.

Pre-Construction Meeting

The LPA should invite all affected utilities to the pre-construction meeting. Notice of this meeting should be provided at least 14 calendar days in advance. The pre-construction meeting provides an excellent opportunity to coordinate any utility adjustments that will be concurrent with the transportation project construction. As a minimum, the following items should be discussed at the pre-construction meeting:

1. Updates to either LPA or utility contact information (changes may have occurred since the plans were developed)
2. If the necessary utility adjustments are not complete, the current status and the proposed schedule for completion.
3. Whether or not any utility adjustments are dependent on transportation project construction, or vice-versa.
4. Whether or not any utility adjustments may impact environmentally sensitive areas, and if so, the project constraints for working in or around those areas.
5. Installation and maintenance of erosion control measures for utility adjustment work.

The pre-construction meeting should be well documented, including an attendance list and a written summary of the issues discussed and / or decisions reached. After the meeting, the LPA should prepare and distribute the meeting notes to all attendees and retain a copy for their project file. Copies of the meeting notes should also be sent to all invited utilities that did not attend.

Construction

If utility adjustments will be concurrent with construction of the transportation project, close coordination between the LPA, the utilities, and the contractor will be required. The LPA should invite utility representatives to regularly scheduled construction progress meetings as appropriate. Maintaining close communication during this phase of the project is essential in order to avoid delays and added expense for all parties involved.

If the utility's work is dependent on the contractor's work, the contractor should provide at least 48 hours notice to the utility before beginning and after completing its work. Likewise, if the contractor's work is dependent upon utility relocations, the utility should provide at least 48 hours notice to the contractor and the LPA before beginning and after completing its work. If the contractor has fulfilled its utility coordination obligations in accordance with the contract documents, but is not able to work on the controlling item of work because of delays caused by a utility, the contractor should not be charged working days.

If unexpected utility conflicts arise during construction, the LPA, utility, and the contractor should work together to obtain a mutually agreeable solution.

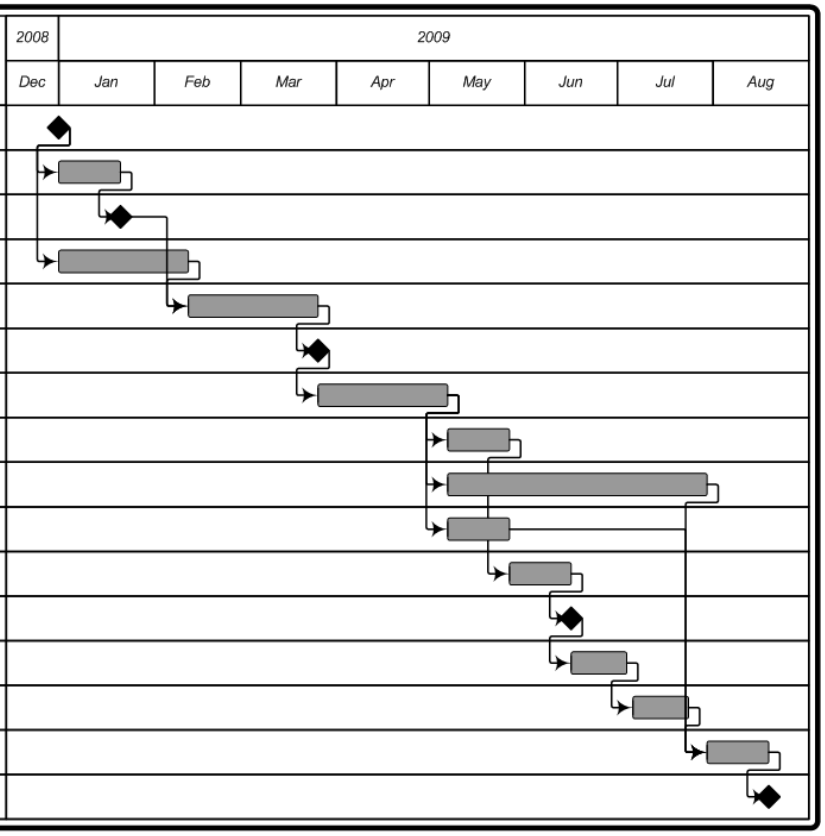
Utility Coordination Schedule

The schedule shown below is intended to illustrate the relationship between the utility coordination activities outlined in this I.M. and indicate the approximate lead time required for adequate utility coordination on most LPA transportation projects. The recommended time frames included in the preceding text are based on the schedule shown below.

Please Note: This schedule is presented as a general guide and should only be used as a starting point for setting a project-specific utility coordination schedule. Substantially more or less time may be required, depending on the complexity of the project, the number of utilities affected, and other project development requirements, especially for Federal-aid projects.

Utility Coordination Schedule

ID	Task Name	Duration
1	LPA Provides Initial Utility Notification	0d
2	LPA Provides Notice of Utility Coordination Meeting (UCM)	14d
3	LPA and Utilities conduct UCM	0d
4	Utility Provides Location Information	30d
5	LPA Prepares Preliminary Plans	30d
6	LPA Submits Preliminary Plans and Requests Work Plan	0d
7	Utility Prepares and Submits Work Plan	30d
8	Work Plan Review and Approval Process	14d
9	Compensation Agreement Review and Approval Process (if needed)	60d
10	Permit Review and Approval Process (if needed)	14d
11	LPA Finishes Final Plans	14d
12	LPA Submits Final Plans	0d
13	Utility Prepares and Submits Revised Work Plan (if needed)	14d
14	LPA Reviews and Approves Revised Work Plan (if needed)	14d
15	LPA Provides Notice to Proceed	14d
16	Utility Begins Work*	0d



* Depending on the lead times required for certain material deliveries, the utility may not be able to begin work within 14 days of notice to proceed. LPAs and utilities should discuss the impact of lead times early in the project development process and adjust the project schedule as needed.

Additional Resources

Reference Information

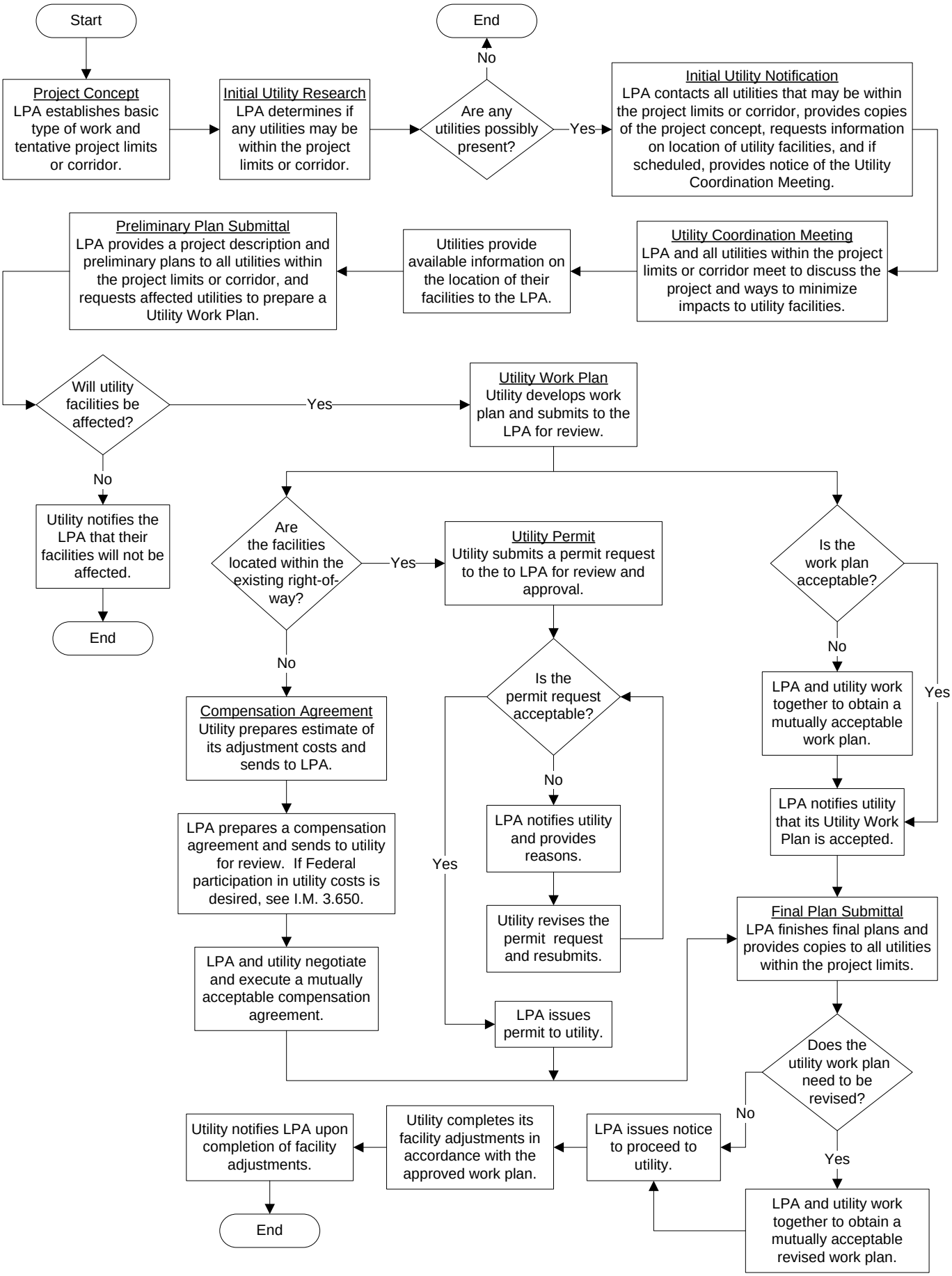
- Iowa DOT Utility Accommodation Policy (for Primary highways only)
- Iowa Guide to Utility Coordination (for Primary highways only)
- Iowa One Call web site
- Policy for Accommodating Utilities on the County and City Non-Primary Federal-aid Road System
- Program Guide – Utility Relocation and Accommodation on Federal-aid Projects (provides guidance and interpretation of applicable Federal laws and regulations)

Contact Information

- Iowa DOT Utility Coordination Contacts (includes central complex staff, District Utility Coordinators, and Engineering Operations Technicians)
- Utility Company Contacts (Iowa DOT database of utility contact information)

Utility Coordination Flowchart

For Non-primary Highway Transportation Projects



Utility Coordination Checklist

LPA Name: _____ Project Number: _____

Project Description: _____

The following checklist summarizes the tasks a Local Public Agency (LPA) should complete in the utility coordination process, as outlined in this I.M. This checklist may also be used to track and document the utility coordination process.

☐ **Initial Utility Research** Based on the project concept, determine if any utility facilities may be present within the proposed project limits or corridor. Obtain contact information for all utilities identified.

Date completed: _____

Initial list of utilities identified:

☐ **Initial Utility Notification** Send written notice and project concept to all potentially affected utilities within the project limits or corridor, request utilities to verify if they have facilities within the project limits or corridor, and if so, request information on the location of their facilities.

Date sent: _____

List of utilities notified:

☐ **Invite Utilities to Utility Coordination Meeting** Send an invitation to all utilities within the project limits or corridor (may be done in conjunction with the Initial Utility Notification).

Date sent: _____

List of utilities that were invited:

☐ **Utility Coordination Meeting** Conduct at least one Utility Coordination Meeting during the design phase of the project. If more than one meeting was held, record those in the space below also.

Date held: _____ Location: _____

List of utilities that attended:

Date meeting notes were distributed:

☐ **Incorporate Utility Information** Use utility information received to show approximate locations of utilities on the preliminary plans. Field locate above-ground utility facilities. If practical, revise the design to minimize impacts to utility facilities.

Date completed: _____

Information was received from the following utilities:

☐ **Preliminary Plan Submittal** Submit preliminary plans to all utilities within the project limits or corridor and request a Utility Work Plan from those utilities that need to adjust their facilities.

Date sent: _____

List of utilities that received plans:

☐ **Utility Work Plans** Review and provide comments on Utility Work Plan. Once acceptable, provide written approval to utility.

Utility Name:	Date Received:	Date Comments Provided:	Date Approved:

☐ **Follow-up with Non-responsive Utilities** Contact those utilities that either did not provide a Work Plan or confirm their facilities will not be affected.

List of utilities, date contacted, and status:

☐ **Compensation Agreement** If a utility is entitled to compensation, prepare a draft compensation agreement, send for review, negotiate compensation and other terms of agreement, and execute final agreement.

Utility Name:	Date Sent:	Date Comments Received:	Date Executed:

Please Note: If Federal reimbursement of utility compensation costs will be requested, additional review and approval of agreement(s) are required by the Iowa DOT. For more information, see I.M. 3.650, Federal-aid Participation in Utility Relocations.

☐ **Utility Permits** For utility adjustments within the right-of-way, review, provide comments, and approve utility permits for affected utilities.

Utility Name:	Date Permit Request Received:	Date Comments Returned:	Date of Permit Approval:

☐ **Final Plan Submittal** Send final plans to all affected utilities within the project limits.

Date sent: _____

List of utilities that received plans:

☐ **Utility Work Plan Revisions** If required by changes between preliminary plans and final plans, review, provide comments, and approve revised Utility Work Plans as needed.

Utility Name:	Date Received:	Date Comments Provided:	Date Approved:

☐ **Issue Notice to Proceed** After the Work Plan and compensation agreement or utility permit (as applicable) have been approved, send written notice to proceed to each affected utility.

List of utilities and date of notice for each:

Please Note: For Federal-aid projects, Environmental Concurrence, and if Federal reimbursement is desired, FHWA Authorization of utility costs, must be obtained prior to beginning construction of any utility adjustments. For more information, refer to I.M. 3.650, Federal-aid Participation in Utility Relocations.

☐ **Invite Utilities to Pre-construction Meeting** Send an invitation to all utilities within the project limits or corridor (may be done in conjunction with final plan submittal).

Date sent: _____

List of utilities that were invited:

☐ **Pre-Construction Meeting** Include discussion of utility coordination required during construction, if any, as part of the meeting.

Date held: _____

List of utilities that attended:

☐ **Disclaimers of Interest** Follow up on any disclaimers of interest that are required from utilities whose property interests have been acquired. Record documents with the County Recorder.

Utility Name:	Date Contacted:	Disclaimer of Interest Fully Executed:	Date Filed:

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: June 18, 2007
From:	Office of Local Systems	I.M. No. 3.650
Subject:	Federal-aid Participation in Utility Relocations	

Contents: This Instructional Memorandum (I.M.) provides a summary of the requirements and procedures for Federal participation in the cost of utility relocations on Federal-aid transportation projects, as specified in Title 23 of the Code of Federal Regulations, Part 645, Subpart A (23 CFR 645 A). Topics addressed include eligibility of utility relocations, utility agreements, and the procedures for obtaining Federal participation in utility relocations. This I.M. includes the following attachments:

Attachment A – Utility Relocation Federal-aid Eligibility Flowchart
Attachment B – FHWA Authorization of Utility Relocation Costs Flowchart

Note: For additional instructions and procedures related to utility accommodation and coordination, refer also to I.M. 3.640, Utility Accommodation and Coordination.

Eligibility

To determine if the costs associated with a utility relocation are eligible for Federal-aid reimbursement, three questions must be answered: 1) Do the circumstances of the relocation allow for Federal reimbursement? 2) Are the activities associated with the relocation eligible? and 3) Are the specific cost items associated with those activities eligible? Each question is further explained below.

Eligible Relocations

Relocation of a utility facility may or may not be eligible for Federal-aid reimbursement, depending on the specific circumstances of that relocation. These circumstances include a number of variables, such as ownership, location, reasons for relocation, and the applicable Federal and State laws, regulations, and policies.

The questions listed below are designed to assist in determining the eligibility of a proposed utility relocation. Additional explanation and information is provided below each question. To obtain the correct determination of eligibility, these questions must be answered in the order indicated. The same decision making process is also illustrated graphically in Attachment A – Utility Relocation Federal-aid Eligibility Flowchart.

1. *Is the utility relocation part of a safety project?* If yes, the relocation is eligible. If no, go to the next question.

   A "safety project" is initiated specifically for the purpose of reducing the roadside hazards of utility facilities to the transportation facility users. Only those facilities that pose a safety hazard would be eligible, and the safety benefit of such relocations must be supported by a site-specific crash history or a safety study.

2. *Is the utility relocation required to construct the project?* If no, the relocation is not eligible. If yes, go to the next question.

   Except for safety corrective measures, the need for the utility relocation must be caused by the transportation project. That is, the utility facilities must be relocated in order for the proposed transportation project to function properly. Relocations that are solely for the benefit of the utility, the utility's contractor, or the LPA's contractor are not eligible.

   For example, the project construction may be more convenient or efficient for the utility or the contractor if certain utility relocations are made, but such reasons by themselves are not sufficient to allow Federal reimbursement.

3. *Is the utility relocation required to construct an Interstate Highway project?* If yes, the relocation is eligible. If no, go to the next question.

The utility itself does not have to be located on the Interstate, but the cause for the relocation must be due to an Interstate project. Such relocations are eligible for Federal reimbursement because this is explicitly permitted by Section 306A.10 of the Code of Iowa.

4. *Is the utility located within the existing right-of-way of a non-Interstate primary highway?* If yes, the relocation is not eligible. If no, go to the next question.

   This question pertains to utilities located on primary highways, except those highways that are part of the Interstate. This includes extensions of primary highway inside city corporate limits. For such projects, the Iowa DOT's Utility Accommodation Policy, which is published at 761 Iowa Administrative Code, Chapter 115 Utility Accommodation, will apply. This policy requires all utilities that occupy the primary highway right-of-way to relocate at their own expense.

5. *Does the utility occupy publicly owned land?* If no, the relocation is eligible. If yes, go to the next question.

   For purposes of this question, publicly owned land includes the LPA's road or street right-of-way, or any other property that is owned by a political subdivision of the State.

   If a utility is not located on any road right-of-way or other publicly owned lands, the utility will have rights to the property it is located on, either by fee title or an easement. In this case, if a transportation project damages or takes the utility's property, the utility is entitled to compensation under eminent domain, and therefore such costs paid by the LPA are eligible.

6. *Is the utility required to relocate at its own expense?* If yes, the relocation is not eligible. If no, go to the next question.

   The utility's obligations for relocation should be specified in the applicable permit, agreement, or utility accommodation policy.

   For projects located on the right-of-way of non-primary, Federal-aid highways, the Policy for Accommodating Utilities On the County and City Non-Primary Federal-Aid Road System will apply. Federal-aid highways include all roadway classifications on the Federal Functional Classification maps, except local roads and rural minor collectors. This policy requires all utilities located within the Federal-aid highway right-of-way to relocate at their own expense when required by a highway project.

   For projects that are neither on a primary highway nor a Federal-aid highway, this question will be determined by the provisions of the applicable permit or utility agreement between the LPA and the utility. Typically, these permits or agreements require that utilities occupying the public right-of-way must relocate at their own expense. However, the LPA should verify this by reviewing the terms of the applicable permit or agreement.

7. *Is the utility owned by the LPA?* If yes, the relocation is eligible. If no, go to the next question.

   LPA owned utilities are owned, operated, and controlled by either the LPA or a subdivision of the LPA's government. For example, a municipal utility for a city would be considered a LPA owned utility for that city.

8. *Does the LPA have legal authority to pay for the relocation?* If yes, the relocation is eligible. If no, the relocation is not eligible.

   To answer yes to this question, the LPA must have an existing local statute, ordinance, agreement, or some other legal basis for making a relocation payment to the utility. If in doubt, the LPA should consult with their attorney to determine if such payments are allowed.

   Note: If a request for Federal participation in utility relocations is based on this condition, the LPA shall include the following with its request for FHWA authorization of utility costs: copies of the relevant local statues, ordinances, agreements, permits, or policies; and an explanation of how these allow the LPA to make payment to the utility. The Iowa DOT and / or the FHWA may request a written legal opinion that supports this determination.

Eligible Activities

After verifying that a particular relocation itself is eligible, it must be determined if the activity associated with that relocation is eligible. The following types of activities associated with eligible relocations may be eligible for Federal reimbursement, as detailed below.

Engineering

Federal funds may participate in the cost of preliminary engineering work required for the design of utility relocations and the associated construction engineering work. Such engineering work may be accomplished by one of the following methods, subject to mutual agreement between the utility and the LPA:

1. The LPA's engineering staff. If the LPA's engineering staff is used, these services must be reviewed and approved in accordance with I.M. 3.310, Federal-aid Participation in In-House Engineering Costs.

2. The utility's engineering staff. If the utility's engineering staff is used, Federal participation in these costs will be subject to the limitations set forth in the "Eligible Costs" section below.

3. An engineering consultant contract that is procured and administered by LPA with approval of the Iowa DOT Administering Office and the utility. In this case, the procedures in I.M. 3.305, Federal Participation in Consultant Costs, shall be followed.

4. An engineering consultant contract that is procured and administered by the utility with approval of the LPA. In this case, the consultant fees must be reasonable and not based on a percentage of construction cost. The utility may contract for the required engineering work on a project-specific basis, or as part of an existing continuing contract, if such work is regularly performed for the utility. Use of a qualifications-based selection, as outlined in I.M. 3.305, Federal Participation in Consultant Costs, is encouraged, but not required.

Right-of-Way

When required by the transportation project, the cost of providing replacement right-of-way for a utility is eligible for Federal reimbursement, provided both the following conditions are met:

1. The utility has a property interest in its current location, the damage or taking of which is compensable under eminent domain; or providing replacement right-of-way for the utility makes the project more cost effective as a whole; or the acquisition is necessary to meet the requirements of the project.

2. There will be no charge to the project for that portion of the utility's existing right-of-way that will be used for transportation purposes. In other words, the utility cannot "double-dip" by receiving both the replacement right-of-way and compensation for its former right-of-way that is being used for the transportation project.

The replacement right-of-way may be acquired by either the utility or the LPA. When the LPA will acquire the utility's property or replacement right-of-way for the utility, such acquisitions must follow the procedures outlined in I.M. 3.605, Right-of-Way Acquisition.

When the utility will acquire its own replacement right-of-way, the procedures specified by I.M. 3.605 do not apply. However, before acquiring replacement right-of-way, the utility must prepare a written valuation of the property to be acquired and provide this to the LPA. The LPA shall submit this documentation to the Iowa DOT with the draft utility agreement.

If the transportation project requires acquisition of real property belonging to the utility, but does not require relocation of the utility's facilities, the cost of acquiring such property is also eligible, provided the utility has a real property interest in its current location, the damage or taking of which is compensable under eminent domain. In such cases, the utility is treated like any other property owner whose property is needed for the project, and the Federal acquisition procedures outlined in I.M. 3.605 shall apply.

Construction

In general, the construction work associated with relocation or adjustment of utility facilities is eligible for Federal participation.

Construction work may be performed by the utility if the utility is adequately staffed and equipped to perform the work in a satisfactory manner (i.e., at a time convenient to and in coordination with the transportation project construction), and one of the following conditions are met:

1. The work is minor, involves existing facilities, and is routinely performed by the utility with its own forces. In this case, it has already been determined that it is cost effective for the utility to perform such work.

2. The Administering Office concurs that it is cost effective for the utility to perform the work, even if the work is not minor or involves installation of new facilities. In this case, the LPA shall submit the utility's justification for a cost effective determination to the Administering Office as part of its request for FHWA Authorization of utility costs.

If one of these conditions are not met, the work may be accomplished by means of a construction contract. The contract may be procured in a number of different ways:

1. The LPA may award a separate utility relocation contract, or with permission of the utility, include the utility relocation work as part of the LPA's contract for the transportation project.

   In either situation, the contract must follow the same bidding and contract requirements that would apply for other Federally funded transportation projects. In most cases, this means the contract will have to be let through the Iowa DOT, as described in I.M. 3.730, Iowa DOT Letting Process. However, for those transportation projects that qualify, the procedures described in I.M. 3.720, Local Letting Process – Federal-aid, may be followed instead.

2. The utility may award a utility relocation contract using a competitive bidding process.

   In this case, the LPA should review the utility's bidding procedures and concur in the award of the contract. Neither the Iowa DOT nor the FHWA need to review or concur in competitive contract awards made by the utility. For such contracts, the Federal bidding and contracting requirements that must be followed for LPA let contracts do not apply. This includes such provisions as Disadvantaged Business Enterprises (DBE), Equal Opportunity Employment (EEO), the Clean Air Act, Davis-Bacon Wage Rates, and other provisions, as shown on Form FHWA-1273.

   Nevertheless, this does not relieve the utility or its contractor from compliance with other Federal laws or regulations that apply regardless of whether Federal funds participate in the utility costs or not, such as the National Environmental Policy Act (NEPA), Title VI of the Civil Rights Act of 1964, and the Americans with Disabilities Act (ADA).

3. The LPA or the utility may include the work as part of an existing continuing contract, provided the costs are reasonable and the LPA can demonstrate this to be the most cost effective method.

4. For low-cost incidental work, the LPA or the utility may award a construction contract to a qualified contractor without a competitive bidding process, provided the costs are reasonable.

   For cases 3 and 4 above, the LPA shall submit a request to the Iowa DOT Administering Office that includes a cost estimate for the utility relocation work and an explanation of why this is the most cost-effective method to accomplish the utility relocations. Before proceeding with such work, the LPA must receive written concurrence from the Administering Office.

Eligible Costs

After determining the relocation is eligible, and the activity associated with the relocation are eligible, the cost elements of that activity (e.g., labor, overhead, materials, equipment, etc.) must also be evaluated for eligibility. The eligibility criteria for these cost elements is specified in 23 CFR 645.117. If a pre-audit is requested, the eligibility of these cost elements will be reviewed by the Iowa DOT (see the "Pre-audit Procedures" subsection

under the "Procedures for Federal Participation" section below). These cost items may also be reviewed as part of the project's final audit.

There are some elements of utility costs that may require credit to the Federal-aid project. These are briefly described below.

Betterment Credits

The additional costs associated with a betterment to utility facilities that are replaced or adjusted will require a credit. For example, if an 8" waterline must be relocated because of the project, and the utility chooses to increase the capacity of their facilities by replacing it with a 12" waterline, the estimated differential cost between the 8" and 12" lines must be deducted from the actual 12" waterline costs before the appropriate Federal share is calculated.

However, there are certain conditions under which a betterment to relocated utility facilities will not require a credit. Those include:

1. The betterment is required by the transportation project
2. Replacement of devices or materials that are of equivalent standards but not identical.
3. Increases to the next higher grade or size when the existing devices or materials are no longer manufactured.
4. The betterment is required by law under governmental and appropriate regulatory commission code.
5. The betterment is required by the utility's current design practices and there is a direct benefit to the transportation project.

In addition to betterments, the accrued depreciation of utility buildings and associated equipment that are replaced may also require a credit. Such accrued depreciation is based on the ratio between the period of actual length of service and the total life expectancy applied to the original cost. Depreciation credit is not required for utility buildings or equipment that are rehabilitated or moved (i.e., not replaced) because of the transportation project.

Salvage Credits

Credit will also be required for the salvage value of materials removed. Materials recovered from temporary use and accepted for reuse by the utility shall be credited to the project at prices charged to the job, less a consideration for loss in service life at 10 percent. Materials recovered from the permanent facility of the utility that are accepted by the utility for return to stock shall be credited to the project at the current stock prices of such used materials. Materials recovered and not accepted for reuse by the utility, if determined to have a net sale value, shall be sold to the highest bidder by the LPA or utility, following an opportunity for inspection by the LPA and an appropriate solicitation for bids. If the utility practices a system of periodic disposal by sale, credit to the project shall be at the going prices supported by records of the utility.

Eligibility of Utility Relocations for Earmark Funds

Projects that are specially designated or "earmarked" by Congress for Federal funding usually follow the same utility relocation eligibility rules as any other Federal-aid project, as outlined above. However, if the funds for an earmarked project are specifically designated for utility relocations, this may override the normal rules of eligibility. To be eligible, such a designation must occur in the legislative description of the project itself or elsewhere in the authorizing legislation. Funding applications or Congressional letters are not sufficient to establish the eligibility of utility relocations that are otherwise ineligible under the normal rules.

Utility Agreements

In order for Federal funds to participate in utility relocation costs, a written agreement must be executed by the LPA and the utility. The agreement must also be reviewed and approved by the Iowa DOT Administering Office.

It is the responsibility of the LPA to initiate the agreement process with the utility. Some utility agreements can take a significant amount of time to negotiate and execute, therefore, the LPA should contact the utility as early possible in the project development process.

Agreement Content

Many utilities have standardized agreements that may be used for this purpose. However, use of a standard format is not required. Regardless of the particular form of agreement used, all utility agreements for construction-type projects shall include the following provisions:

1. A statement of each party's responsibilities for accomplishing and paying for the cost of the utility relocations. This statement should include the basis of LPA's authority or obligation to pay for utility relocation costs.

2. The provisions of 23 CFR 645 and the Policy for Accommodating Utilities On the County and City Non-Primary Federal-Aid Road System incorporated by reference.

3. The method for performing the utility relocation work. The method used must be one of the options described in the "Construction" subsection under the "Eligible Activities" section above.

4. The method for developing utility relocation costs.

   The preferred method is based on actual direct and related indirect costs. However, subject to approval by the Iowa DOT, other methods may be used, provided they are based on generally accepted industry practices and can be reasonably supported by recent actual expenditures. The lump-sum method may be used if the work can be clearly defined and the cost accurately estimated. Unit costs may be used if they are developed by the LPA in cooperation with the utility and are updated annually based on actual cost data.

5. An itemized cost estimate of the utility relocation work.

   If the work will require any credits for the purposes of Federal-aid reimbursement, these shall be identified. The cost estimate should also include right-of-way, preliminary engineering, and construction engineering costs, if applicable. If the agreement is based on the utility's actual costs, the cost estimate should include a break-down of the estimated costs, such as direct labor, labor surcharges, overhead and indirect construction charges, materials, equipment, etc.

6. If the LPA and the utility will share in the cost of the utility relocation, the agreement shall identify the share to be paid by each party.

7. If the utility will make repayment of any costs that were initially paid by the LPA, the agreement shall specify the amount and terms of such repayments.

8. References to the plans, and if needed, specifications that describe the proposed work. These should be incorporated into the agreement as an attachment or exhibit.

9. A provision stating that the utility may not commence work until after receipt of written notification from the LPA that the relocation work has been approved by the Iowa DOT and received FHWA Authorization.

10. If the utility has a property interest in its current location, a provision that states the utility will provide a release or disclaimer of all property interests to the LPA after completion of the relocation and prior to final payment by the LPA.

Changes to the Agreement

If there are changes to the scope of work approved by the agreement (e.g., extra work, significant changes to the plans, specifications, or estimates), an amendment to the agreement, written change, or extra work order must be approved by the LPA and the Iowa DOT. Absent such documentation, Federal funds may not participate in the additional costs associated with such changes.

Procedures for Federal Participation

To obtain Federal participation in utility relocation costs, follow the process illustrated in the flowchart included as Attachment B to this I.M. Like any other type of project work, FHWA Authorization must be obtained prior to beginning any utility work which will be reimbursed with Federal funds. Additional details and guidance concerning this process is provided below.

FHWA Authorization Request Submittal

To request FHWA Authorization for utility relocation costs, submit the following to the Administering Office:

1. A cover letter, memo, or e-mail that includes the project number and a description of the circumstances that require the utility relocation.
2. The draft utility agreement, including the proposed plans, specifications (if applicable), and an itemized estimate of utility relocation costs to be paid by the LPA.

Pre-audit Procedures

If the estimated total utility cost to be paid by the LPA is greater than $100,000, the Administering Office will forward 1 copy of the draft utility agreement to the Iowa DOT Office of Finance, External Audits, and request a pre-audit. If the estimated cost is less than $100,000, a pre-audit is usually not required, unless:

- the utility is to be paid on a lump-sum or unit price basis;
- there is insufficient knowledge of the utility's accounting system;
- there is previous unfavorable experience regarding the reliability of the utility's accounting system;
- the utility agreement involves procurement of new equipment or supplies for which cost experience is lacking; or
- the Administering Office has concerns about any item in the proposed cost estimate.

External Audits may waive the need for a pre-audit based on its knowledge of the utility and its past audit history. A pre-audit typically includes:

- an analysis of the utility's cost proposal and financial records for the method of accounting in place to assure that the utility has the ability to adequately segregate and accumulate reasonable and allowable costs to be charged against the project; and
- an analysis of the utility's proposed direct costing rates and indirect overhead factors to assure their propriety and eligibility for Federal reimbursement, as required by 23 CFR 645.117.

If there are any questions about the pre-audit procedures, the LPA or Administering Office may contact External Audits for assistance.

Reimbursements

The LPA may request reimbursement for the costs of approved and authorized utility relocation work anytime after payments have been made to the utility. Each request for reimbursement shall include:

- 1 cover letter that identifies the project number, the work for which reimbursement is being requested, and the total amount claimed for reimbursement.
- If the utility is performing the work with its own forces, include 1 copy of the utility's estimate of work completed to date.
- If the utility is using a contractor or consultant to perform the work, 1 copy each of the contractor or consultant invoice, and any applicable subcontractor or subconsultant invoices.
- 1 copy of the canceled check or check register to verify that the LPA has made payment to the utility.

Completion of Utility Work

After all the utility relocation work is completed, the LPA shall submit a request for final reimbursement to the Administering Office. The final reimbursement request shall include:

- 1 cover letter that identifies the project number, the work for which reimbursement is being requested, and the total amount claimed for reimbursement. The cover letter shall also include a statement by the LPA that the utility relocation work was completed in general conformance with the utility agreement.
- If the utility is performing the work with its own forces, include 1 copy of the utility's final costs.
- If the utility is using a contractor or consultant to perform the work, 1 copy each of the contractor or consultant final invoice, and any applicable subcontractor or subconsultant final invoices.

- 1 copy of the canceled check or check register to verify that the LPA has made final payment to the utility.

Because the final audit process can require a significant amount of time, and the final audit will need to be complete before the project as a whole can receive final Federal-aid reimbursement, the LPA should submit their request for final reimbursement of utility relocation work as soon as possible.

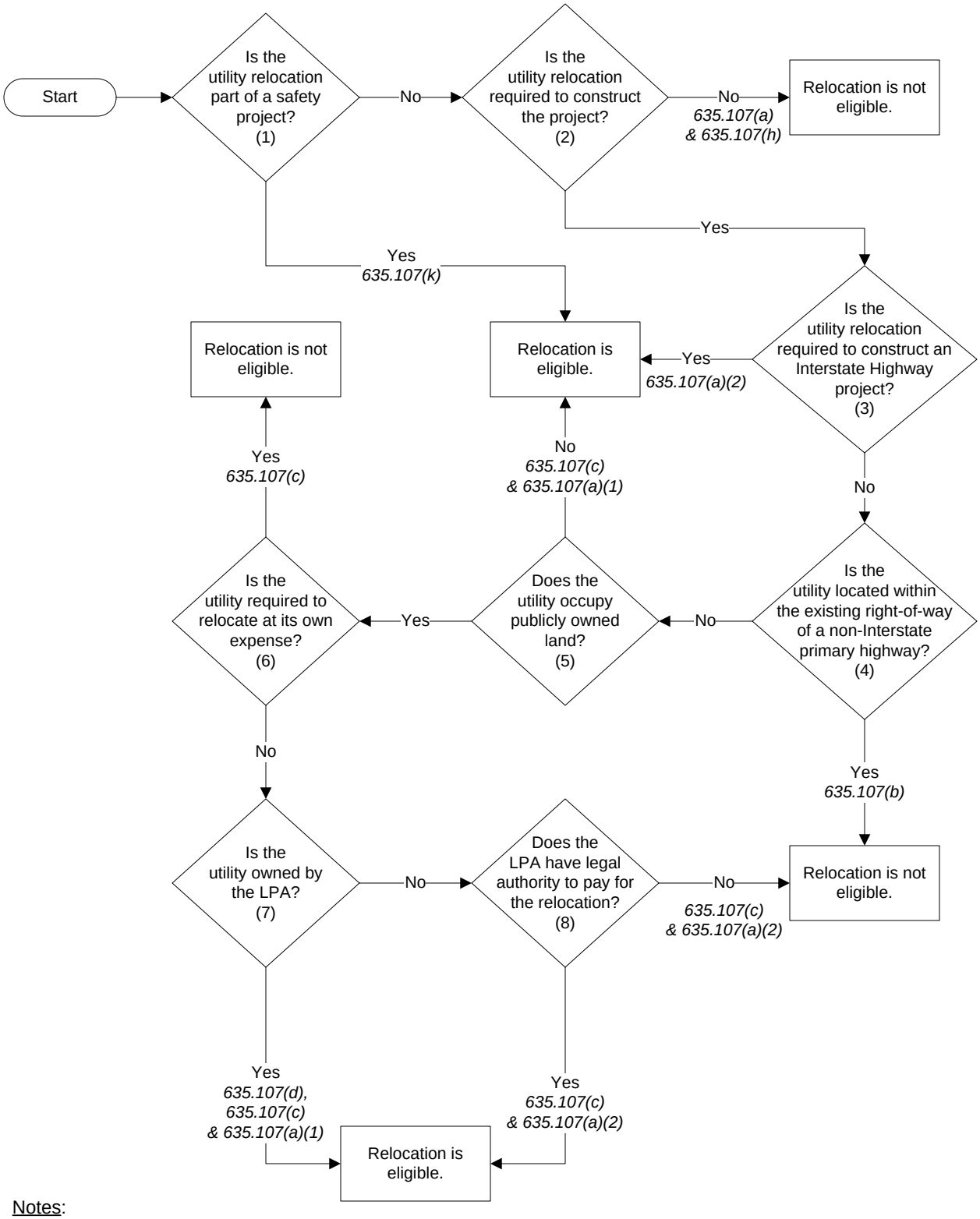
Upon receipt of a request for final reimbursement of utility relocation costs, the Administering Office will forward a request for a final audit or final review to the Office of Finance, External Audits. Lump sum agreements do not need a final audit, but may have a final review. External Audits may waive final audit requirements on utility agreements less than $100,000. Final reimbursement for lump sum agreements under $100,000 can be made prior to the final audit or review (reimbursement set by agreement).

If a final audit is conducted, External Audits will review all invoiced charges to assure that the charges are adequately supported and are eligible for reimbursement. After the final audit is complete, External Audits will return the audit report to the Administering Office, which in turn will pass the report on to the LPA and the utility.

- If the final audit report finds that a balance is due to the utility, the utility may invoice the LPA for the balance due and the LPA may request reimbursement for the additional payment. Upon receipt of such a request, the Iowa DOT will reimburse the LPA for the appropriate Federal share.
- If the final audit report finds that the utility has been overpaid, the Iowa DOT will invoice the LPA for the appropriate Federal share or deduct this amount from the balance of reimbursement that is due to the LPA for other project costs. Likewise, the LPA may request reimbursement from the utility for the amount of overpayment.

Utility Relocation Federal-Aid Eligibility Flowchart

For Local Public Agency (LPA) Federal-aid Projects



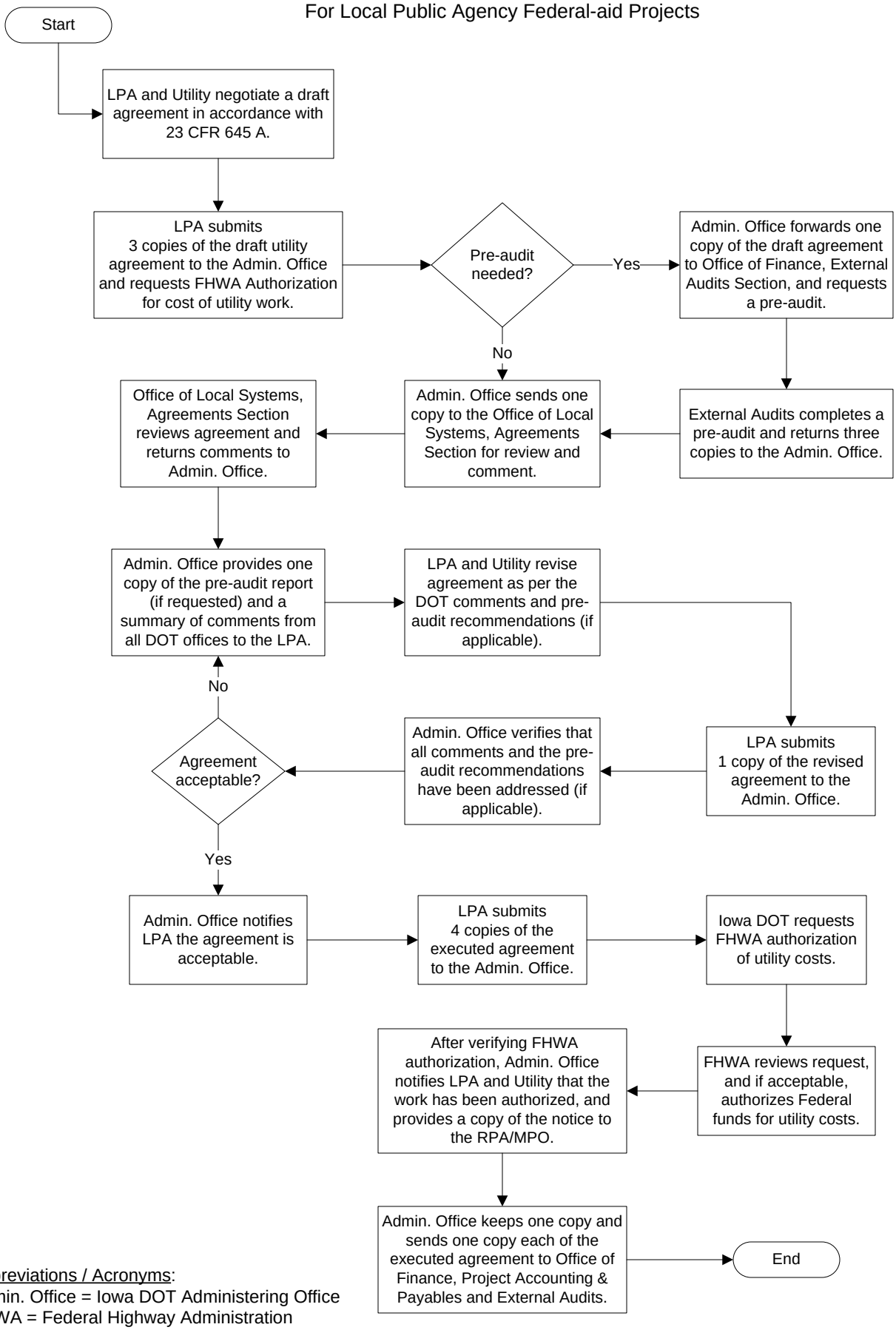
Notes:

1) For additional explanation of each question shown on this flowchart, refer to the corresponding numbered questions in the "Eligible Relocations" section of this I.M.

2) For each eligibility determination shown on this flowchart, the supporting references from 23 CFR 645 are shown in *italics*.

FHWA Authorization of Utility Relocation Costs Flowchart

For Local Public Agency Federal-aid Projects



Abbreviations / Acronyms:
Admin. Office = Iowa DOT Administering Office
FHWA = Federal Highway Administration
LPA = Local Public Agency
MPO = Metropolitan Planning Organization
RPA = Regional Planning Affiliation

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: May 1, 2007
From:	Office of Local Systems	I.M. No. 3.670
Subject:	Work on Railroad Right-of-Way	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for a Local Public Agency (LPA) to use to obtain approval to work within a railroad's right-of-way. These procedures are required for LPA projects let through the Iowa Department of Transportation (Iowa DOT) and highly recommended for projects let through the LPA as they include items normally required by the railroads. To use these procedures on LPA let projects, the Iowa DOT Standard Specifications for Highway and Bridge Construction (Standard Specifications) must also be used. Currently, this I.M. only describes the special requirements for coordinating with Union Pacific Railroad. Revisions to this I.M. will be made as blanket agreements are reached with other railroads. This I.M. includes the following attachments:

Attachment A – Notification and Agreement of Maintenance Work in Railroad Right-of-Way (Word)
Attachment B – Notification of Construction Work in Railroad Right-of-Way (Word)
Attachment C – Work on Railroad Right-of-Way Flowchart

Definitions

Railroad - Union Pacific Railroad Company

Maintenance - a project in which there will be no additional railroad right-of-way or railroad facility adjustment, e.g. full depth replacement; patching; resurfacing the roadway, shoulders, or bridge deck; maintenance cleaning and painting of a bridge structure.

Construction - a project in which there will be additional railroad right-of-way or railroad facility adjustment, e.g. widening of the road or shoulders that would require adding, replacing, or extending the railroad crossing material; relocation of railroad crossing signals; changing from an unpaved to a paved road; construction of an overpass.

Overpass - when the roadway bridges over the railroad.

Underpass - when the roadway crosses under the railroad.

Specifications

LPA will include one of the following specifications in the contract documents:

- For maintenance projects: Maintenance Work on Railroad Right-of-Way (Union Pacific Railroad).
- For construction projects: Construction Work on Railroad Right-of-Way with A+B for Bidding Railroad Flaggers (Union Pacific Railroad).

  Note: These specifications are currently under development. When available, they will be posted on the Iowa DOT Specification Section web page. Until then, LPA's with projects involving railroad crossings should contact the Office of Local Systems for assistance.

The LPA's design shall comply with the requirements of these specifications, such as horizontal and vertical clearances. If the project limits contain construction of railroad facilities that will be performed by the Railroad's forces, the LPA shall state this in the contract documents. The contract documents shall state the Contractor's limits of responsibility and allow sufficient time in the schedule for the work to be accomplished; and that the Contractor shall coordinate its activities with the Railroad.

In the unlikely event of a unique project that will not be covered by the requirements of one of the current Maintenance or Construction Work on Railroad Right-of-way specifications, a project specific specification may be required. Contact the Railroad and the Office of Local Systems for assistance.

Railroad Notification and Agreement

If construction or maintenance activities will occur on Railroad properties or within 25 feet of the centerline of the outer most track, the Railroad must be notified.

For maintenance projects let by the Iowa DOT, the Notification and Agreement of Maintenance Work in Railroad Right-of-Way (see Attachment A to this I.M.) shall be submitted to the Railroad a minimum of 2 months before the Final Plan submittal to the Iowa DOT, as specified in I.M. 3.005, Project Development Submittal Dates and Information. This submittal shall include a set of plans and a copy of the current Maintenance Work on Railroad Right-of-Way specification.

On LPA let maintenance projects where the Standard Specifications are going to be used, the Notification and Agreement of Maintenance Work in Railroad Right-of-Way, a set of plans, and a copy of the current Maintenance Work on Railroad Right-of-Way specification should be submitted a minimum of 2 months before the letting. On LPA let maintenance projects where the Standard Specifications are not going to be referenced, a notification letter should be sent to the Railroad with a copy of the plans and specifications that the project will utilize, a minimum of 4 months before the letting.

For construction projects let by the Iowa DOT, the Notification of Construction Work in Railroad Right-of-Way (see Attachment B to this I.M.) must be submitted to the Railroad as soon as the Contracting Authority is aware the project will impact the Railroad in such a way that a construction agreement will be necessary. This submittal shall include a set of plans and a copy of the current Construction Work on Railroad Right-of-Way with A+B for Bidding Railroad Flaggers specification. This specification will cover the Contractor requirements, but the LPA must negotiate an agreement for such things as right-of-way purchases, percent Railroad will pay for the project, and who will maintain the crossing after construction. The agreement will be between the LPA and the Railroad; the Contractor shall never be required to enter into, or sign, any agreement with the Railroad to complete work required by the contract documents so long as the Contractor does not need to enter the Railroad's property outside the limits of the area authorized by the public's easement. If the Contractor needs to enter the Railroad's property outside of the area authorized by the public's easement, the Contractor is responsible for obtaining a permit of entry from the Railroad. The Contractor shall be required to enter into an agreement with the Railroad for a temporary crossing not included in the contract documents. For Federal-aid projects, this agreement shall comply with the requirements of Title 23 of the Code of Federal Regulations, Part 646 (23 CFR 646). For more information, refer to I.M. 3.680, Federal-aid Projects Involving Railroads.

On LPA let construction projects that will reference the Standard Specifications, the Notification of Construction Work in Railroad Right-of-Way, a set of plans, and a copy of the current Construction Work on Railroad Right-of-Way with A+B for Bidding Railroad Flaggers specification should be submitted as soon as possible. On LPA let construction projects where the Standard Specifications are not going to be referenced, a notification letter must be sent to the Railroad with a copy of the plans and specifications that the project will utilize, as soon as possible.

After each Iowa DOT letting, the Office of Contracts will automatically send a report notifying the Railroad of pertinent project information for all projects let through the Iowa DOT.

The LPA should notify the Railroad of the following, immediately after awarding the contract on LPA let projects:

1. Federal Railroad Administration (FRA) crossing number*
2. LPA project number
3. Contractor's name, mailing information, and phone number
4. Contractor's contact person
5. Anticipated start date
6. Number of working days
7. Number of days it is believed the Contractor will impact the railroad.

* For help in identifying the FRA number, refer to the Iowa DOT Office of Rail Transportation's Highway-Railroad Crossing Identifiers web page.

Flagging

Flaggers may not be requested until after insurance is submitted to the Railroad.

Flagging fees will be at the rate stated in either the Maintenance or Construction Work on Railroad Right-of-way specification.

On maintenance projects, the Contractor will be required to pay the flagging fees.

On construction projects, the LPA will be required to pay the flagging fees. If the LPA desires Federal-aid participation in any costs paid to the Railroad, refer to I.M. 3.680, Federal-aid Projects Involving Railroads.

Shop Drawings

Shop drawings will be required by the Railroad on construction of all over and under passes.

> The Contractor's submittals required for construction materials and shop drawings shall be outlined in the contract documents. The LPA shall review the Contractor's submittals and forward them, including their comments, to the Railroad. The submittal and the LPA's review comments will be reviewed by the Railroad. Review of the submittals will not be conducted until after review by the LPA. Railroad review of the submittal items will require a minimum of 4 weeks after receipt from the LPA.

Site Inspections by Railroad's Designated Representative and Scheduling

In addition to the office reviews of construction submittals, site inspections may be performed by Railroad's Designated Representative at significant points during construction, including those applicable but not limited to the following:

1. Preconstruction meetings.
2. Pile driving, drilling of caissons or drilled shafts.
3. Reinforcement and concrete placement for railroad bridge substructure and/or superstructure.
4. Erection of precast concrete or steel bridge superstructure.
5. Completion of the bridge structure.

Site visits to check progress of the work may be performed at any time throughout the construction as deemed necessary by Railroad.

Railroad Contact Persons

All submittals to the Railroad shall be made to the appropriate contact person(s) listed below, unless otherwise directed by the Railroad.

Union Pacific Railroad Company:

Union Pacific Railroad
Attn: Manager Industrial and Public Projects
1400 Douglas Street Stop 0910
Omaha, NE 68179

Notification and Agreement of Maintenance Work in Railroad Right-of-Way

FRA Number:
Route/Road name:
County:
Iowa DOT Project Number:

[Railroad company name]
Attn: [Railroad contact person name and / or title]
[street address]
[city, state zip]

Dear [Railroad contact person name and / or title],

We desire to enter the right-of-way of the [Railroad company name] (Railroad) for a maintenance project. This project will not require additional railroad right-of-way or railroad facility adjustment, as shown on the attached set of plans. If Federal-aid funds are used for this project, the applicable portions of 23 CFR 646, Subpart B, and 23 CFR 140, Subpart I, shall apply.

The attached specification will be included in the contract documents. All flagging charges should be submitted to contractor within 90 days of the contractor's completion notice. The contractor will be responsible to pay the Railroad directly for all flagging charges associated with this project within 30 days of receipt of the Railroad's billing. If the contractor fails to pay the Railroad for all flagging charges, the Railroad will notify us at the address below within 30 days. We assume and agree to pay all such charges within 30 days of receipt of the contractor's non-payment from the Railroad.

If the proposed work is acceptable to the Railroad, please sign and return this letter. The Railroad may request changes to the plans after award of the contract, but such changes are subject to approval by the [city or county name] and the Iowa Department of Transportation.

Thank you for your consideration.

_____ Date: _____, _____
[LPA contact person name]
[LPA contact person title]
[street address]
[city, state zip]
[Phone number] [E-mail address]

Approved,

By: _____ Date: _____, _____
(signature)

_____ Railroad agreement file number: _____
(printed name)

Attachments: Plans
Maintenance Work on Railroad Right-of-Way specification

Notification of Construction Work in Railroad Right-of-Way

FRA Number:
Route/Road name:
County:
Iowa DOT Project Number:

[Railroad company name]
Attn: [Railroad contact person name and / or title]
[street address]
[city, state zip]

Dear [Railroad contact person name and / or title],

We desire to enter the right-of-way of the [Railroad company name] (Railroad) for a construction project. This project requires additional railroad right-of-way or railroad facility adjustment, as shown on the attached set of plans.

The attached specification will be included in the contract documents. All flagging charges should be submitted to the address below within 90 days of the contractor's completion notice. We assume and agree to pay all such flagging charges within 30 days of receipt of the Railroad's billing.

We will submit as-built plans to the Railroad within 1 year of completion of the project. These records shall consist of the following items:

<u>Underpass Projects</u>

1. Electronic files of all structure design drawings with as-constructed modifications shown, in MicroStation J or Acrobat .PDF format.
2. Hard copies of all structure design drawings with as-constructed modifications shown.

<u>Overpass Projects</u>

1. Electronic files of all structure design drawings with as-constructed modifications shown, in MicroStation J or Acrobat .PDF format.
2. Hard copies of all structure design drawings with as-constructed modifications shown.
3. Final approved copies of shop drawings for concrete and steel members.
4. Foundation Construction Reports.
5. Compaction testing reports for backfill at abutments.

Please find attached a draft agreement for your review. The Railroad may request changes to the plans after award of the contract, but such changes are subject to approval by the [city or county name] and the Iowa Department of Transportation.

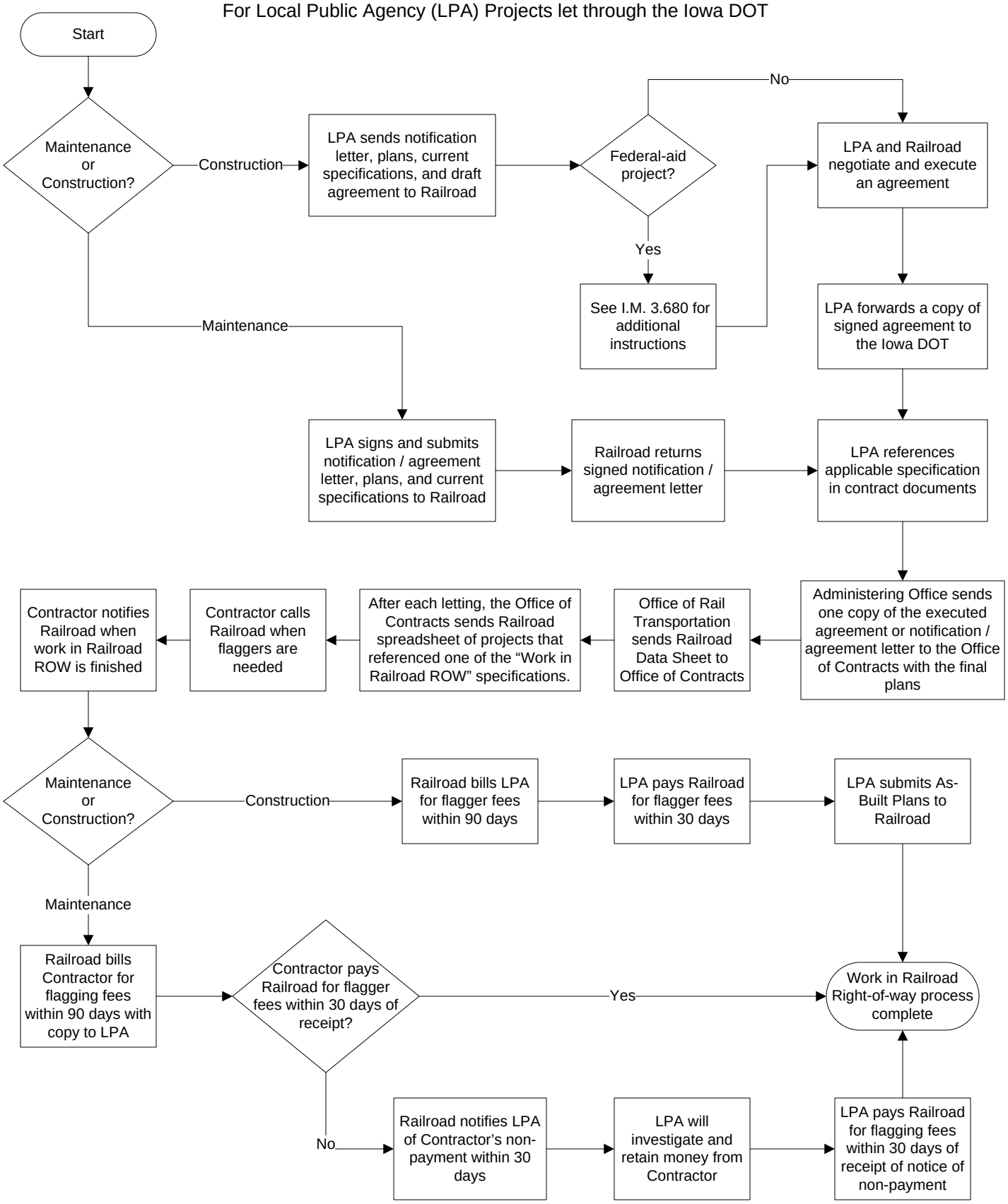
Thank you for your consideration.

_____ Date: _____, _____
[LPA contact person name]
[LPA contact person title]
[street address]
[city, state zip]
[Phone number] [E-mail address]

Attachments: Plans
Construction Work on Railroad Right-of-Way with A+B for Bidding Railroad Flaggers specification
Draft agreement

Work on Railroad Right-of-Way Flowchart

For Local Public Agency (LPA) Projects let through the Iowa DOT



INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: May 1, 2007
From:	Office of Local Systems	I.M. No. 3.680
Subject:	Federal-aid Projects Involving Railroads	

Contents: This Instructional Memorandum (I.M.) provides a summary of the requirements and procedures for Federal-aid transportation projects that involve work on railroad right-of-way or adjustments to railroad facilities, as specified in Title 23 of the Code of Federal Regulations, Part 646 (23 CFR 646). Topics addressed include design requirements, railroad agreements, and Federal participation in railroad costs. This I.M. includes the following attachment:

Attachment A – FHWA Authorization of Railroad Costs Flowchart

Note: For additional instructions and procedures for projects that involve railroad crossings, refer also to I.M. 3.670, Work on Railroad Right-of-Way.

Project Design

Standards Used:

When the facility to be designed will be maintained and operated by the railroad, the design shall comply with the railroad's normal design standards and practices. When the facility will be maintained and operated by the LPA, the design shall comply with the applicable Federal-aid design guidelines, as outlined in Section 3.2 of the I.M.s. For structural or other design criteria not included in the I.M.s, refer to the applicable American Association of Highway Officials (AASHTO) design guidelines.

Specific Requirements:

For grade crossing projects, the project design shall comply with the following:

1. All traffic control devices shall comply with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD), as adopted by 761 Iowa Administrative Code (IAC), Chapter 130.

2. The project shall not be opened to unrestricted traffic or accepted as complete until adequate warning devices are operational at all highway-rail crossings within or adjacent to the project limits. Adequate warning devices shall include automatic gates and flashing lights when one or more of the following conditions exist:
   - multiple mainline tracks are present;
   - multiple tracks are present which may be occupied by a train or locomotive so as to obscure another train approaching the crossing;
   - high train speeds with limited sight distance;
   - high train speeds and moderately high volumes of train and highway traffic;
   - a high volume of highway traffic, a high number of train movements, substantial numbers of school buses or trucks carrying hazardous materials, unusually restricted sight distance, or recurring crashes; or
   - a diagnostic team recommends them.

   Otherwise, the determination of what type of warning device to install will be made by the LPA and / or the railroad, subject to approval by the Iowa Department of Transportation (Iowa DOT).

For projects on full access control highways (freeways), at-grade crossings shall be eliminated, regardless of the train or highway traffic volumes.

Performance of Design Work:

The engineering design work required for rail-highway projects may be accomplished by one of the following methods, subject to mutual agreement between the railroad and the LPA:

1. The LPA's or the railroad's own engineering staff; or
2. An engineering consultant. The consultant contract may be procured and administered either by LPA, with approval of the railroad; or by the railroad, with approval of the LPA.

Railroad Agreements

The Federal regulations require an agreement between the LPA and the railroad for any Federal-aid project that requires work on railroad right-of-way or adjustments to railroad facilities. It is the responsibility of the LPA to initiate the agreement process with the railroad. Some railroad agreements can take a long time to negotiate and execute, especially for projects that involve a significant amount of work on railroad property or facilities (e.g., construction or reconstruction of overpasses or underpasses, or projects that require relocation or adjustment of grade crossings or other railroad facilities). Therefore, the LPA should contact the railroad as early possible in the project development process.

Agreement Content:

For maintenance-type projects (as defined in I.M. 3.670, Work on Railroad Right-of-way), the Notification and Agreement for Maintenance Work in Railroad Right-of-Way (see Attachment A to I.M. 3.670) shall be used as the agreement between the LPA and the railroad. This form meets the Federal requirements for maintenance-type projects.

For construction-type projects (as defined by I.M. 3.670), a more formal, detailed agreement will need to be negotiated between the railroad and the LPA. Most railroads have standardized agreements that may be used for this purpose. Regardless of the particular form of agreement used, all railroad agreements for construction-type projects must provide the following, where applicable:

1. The provisions of 23 CFR 646, Subpart B, and 23 CFR 140, Subpart I, incorporated by reference.

2. A detailed statement of work to be completed by each party.

3. The method of payment for railroad costs. The preferred method of payment is based on actual costs. However, subject to approval by the Iowa DOT, the lump-sum method may be used for work done by railroad forces for any of the following:
   - installation or improvement of grade crossing warning devices and / or grade crossing surfaces;
   - any eligible railroad work where the estimate cost to the LPA does not exceed $100,000; or
   - when the Iowa DOT concurs it is in the public's best interest to use this method.

   Note: Usually, the Iowa DOT will not approve payment on a lump-sum basis because the historical cost data necessary to justify use of a lump-sum method is not available. If a lump-sum method is used, the Iowa DOT will require periodic reviews of the methods and cost data used by the railroad to develop lump-sum estimates.

4. If the project is not a safety project to eliminate a grade crossing, the extent to which the railroad is obligated to move or adjust its facilities at its own expense.

5. The railroad's share of project costs.
   - In general, the railroad is not required to share in the project costs when there is no ascertainable net benefit to the railroad.
   - When the project will eliminate an existing grade crossing at which active warning devices are either in place or have been ordered to be installed by a State regulatory agency, the railroad is required to pay a minimum of 5 percent of the project costs, within the limits set by 23 CFR 646.210(c).
   - Railroads may voluntarily contribute a greater share of project costs than are required, and other parties may also voluntarily assume the railroads share of project costs.

6. An itemized estimate of the cost of work to be completed by the railroad.

7. The method for performing railroad work. Railroad construction may be accomplished by any of the following methods:
   - force account (work done by railroad forces),
   - a competitive contract award,

- a contractor retained as part of an existing continuing railroad contract, provided the cost is reasonable, or
- a non-competitive contract award for minor work, provided the cost is reasonable.

8. The maintenance responsibilities of each party.

9. The form, duration, and amounts of any needed insurance. Such insurance shall comply with the requirements of 23 CFR 646, Subpart A.

10. References to the plans and specifications that describe the proposed work.

11. Provisions that specify the type of protective services (such as railroad flaggers) the railroad will provide or require, the conditions under which they are required during the performance of the work, and the method of payment to the railroad for these services.

12. Provisions that address the inspection of any recovered materials. These provisions shall allow the LPA to inspect any materials salvaged by the railroad in order to agree upon the credit (if any) to be applied toward the Federal participation in the cost of the railroad work, as required by 23 CFR 646.216(c)(2).

Federal Participation in Railroad Costs

To request FHWA authorization for railroad costs, follow the process illustrated in the flowchart included as Attachment A to this I.M. Like any other type of project work, FHWA Authorization must be obtained prior to beginning any railroad work which will be reimbursed with Federal funds. Additional details and guidance concerning this process is provided below.

Federal Share:

The pro-rata share of eligible railroad costs shall be determined by the Federal program that is supplying the Federal funds for the project.

Eligible Costs:

The criteria governing the eligibility of specific cost elements (e.g., labor, overhead, materials, equipment, etc.) incurred by the railroad are given in 23 CFR 140, Subpart I. If a pre-audit is requested, the eligibility of these costs will be reviewed by the Iowa DOT (see the “Pre-audit Procedures” section below).

Eligible Activities:

Engineering

The cost of Preliminary Engineering (PE) work required for the design of railroad facilities may be eligible for Federal reimbursement.

- When LPA procures the services of an engineering consultant, a qualifications-based selection process shall be followed, as described in I.M. 3.305, Federal Participation in Consultant Costs.
- In-house engineering services provided by the LPA must be reviewed and approved in accordance with I.M. 3.310, Federal-aid Participation in In-House Engineering Costs.
- When the railroad is not adequately staffed to perform the required engineering work, Federal funds may participate in the costs of engineering or other consultants hired by the railroad, provided that such consultant fees are reasonable and are not based on a percentage of construction cost. The railroad may contract for the required engineering work on a project-specific basis, or as part of an existing continuing contract when such work is regularly performed for the railroad.

Right-of-Way

When required by the highway project, the cost of acquiring railroad right-of-way or providing replacement right-of-way for the railroad may be eligible for Federal reimbursement. To be eligible, such right-of-way acquisitions must meet the same eligibility criteria and follow the same procedures as any other Federal-aid project. For more information, refer to the I.M. 3.605, Right-of-Way Acquisition.

Construction

In general, Federal funds may participate in the cost of adjustments or construction of railroad facilities that are required to construct the highway project, but Federal funds may not participate in costs incurred solely for the benefit of the railroad.

Federal funds may participate in the portion of project costs required to provide the normal horizontal and vertical clearances required by the railroad, subject to the limitations provided in the Appendix to Subpart B of 23 CFR 646, or as required by the Iowa DOT.

For grade separation projects, Federal funds may participate in the costs associated with providing additional space to accommodate future tracks, if the railroad provides documentation to show that plans to add such tracks are included in its 5-year improvement plan. The LPA shall forward this documentation to the Iowa DOT Administering Office with its request for FHWA authorization.

FHWA Authorization Request Submittal:

To request FHWA authorization for railroad costs, submit the following to the Administering Office:

1. The draft railroad agreement, including the proposed plans and specifications, and an itemized estimate of railroad costs to be paid by the LPA.
2. If the cost of acquiring railroad right-of-way is requested, include the information specified by I.M. 3.605, Right-of-Way Acquisition.
3. If the cost of engineering services is requested, include the information specified by either I.M. 3.305, Federal Participation in Consultant Costs, or I.M. 3.310, Federal-aid Participation in In-House Engineering Costs, as appropriate.

Pre-audit Procedures:

If the estimated total railroad cost to be paid by the LPA is greater than $100,000, the Administering Office will forward 1 copy of the draft railroad agreement to the Iowa DOT Office of Finance, External Audits, and request a pre-audit. If the estimated cost is less than $100,000, a pre-audit is usually not required, unless:

- the railroad is to be paid on a lump-sum basis;
- there is insufficient knowledge of the railroad's accounting system;
- there is previous unfavorable experience regarding the reliability of the railroad's accounting system;
- the railroad agreement involves procurement of new equipment or supplies for which cost experience is lacking; or
- the Administering Office has concerns about any item in the proposed cost estimate.

External Audits may waive the need for a pre-audit based on its knowledge of the railroad and its past audit history. A pre-audit typically includes:

- an analysis of the railroad's cost proposal and financial records for the method of accounting in place to assure that the railroad has the ability to adequately segregate and accumulate reasonable and allowable costs to be charged against the project; and
- an analysis of the railroad's proposed direct costing rates and indirect overhead factors to assure their propriety and eligibility for Federal reimbursement, as required by 23 CFR 140, Subpart I.

If there are any questions about the pre-audit procedures, the LPA or Administering Office may contact External Audits for assistance.

Reimbursements:

The LPA may request reimbursement for approved and authorized railroad costs anytime after payments have been made to the railroad. Each request for reimbursement shall include:

- 1 cover letter that identifies the project number, the railroad work for which reimbursement is being requested, and the total amount claimed for reimbursement.
- If the railroad is performing the work with its own forces, include 1 copy of the railroad's estimate of work completed to date.
- If the railroad is using a contractor or consultant to perform the work, 1 copy each of the contractor or consultant invoice, and any applicable subcontractor or subconsultant invoices.
- 1 copy of the canceled check or check register to verify that the LPA has made payment to the railroad.

Completion of Railroad Work:

After all the railroad's work is completed, the LPA shall submit a request for final reimbursement to the Administering Office. The final reimbursement request shall include:

- 1 cover letter that identifies the project number, the railroad work for which reimbursement is being requested, and the total amount claimed for reimbursement. The cover letter shall also include a statement by the LPA that the work performed by the railroad was completed in general conformance with the railroad agreement.
- If the railroad is performing the work with its own forces, include 1 copy of the railroad's final costs.
- If the railroad is using a contractor or consultant to perform the work, 1 copy each of the contractor or consultant final invoice, and any applicable subcontractor or subconsultant final invoices.
- 1 copy of the canceled check or check register to verify that the LPA has made final payment to the railroad.
- 1 set of four color photos of showing the finished crossing from both roadway and railroad approaches (recommended but not required – these photos are used for the Iowa DOT's railroad database).

Because the final audit process can require a significant amount of time, and the final audit will need to be complete before the project as a whole can receive final Federal-aid reimbursement, the LPA should submit their request for final reimbursement of railroad work as soon as possible.

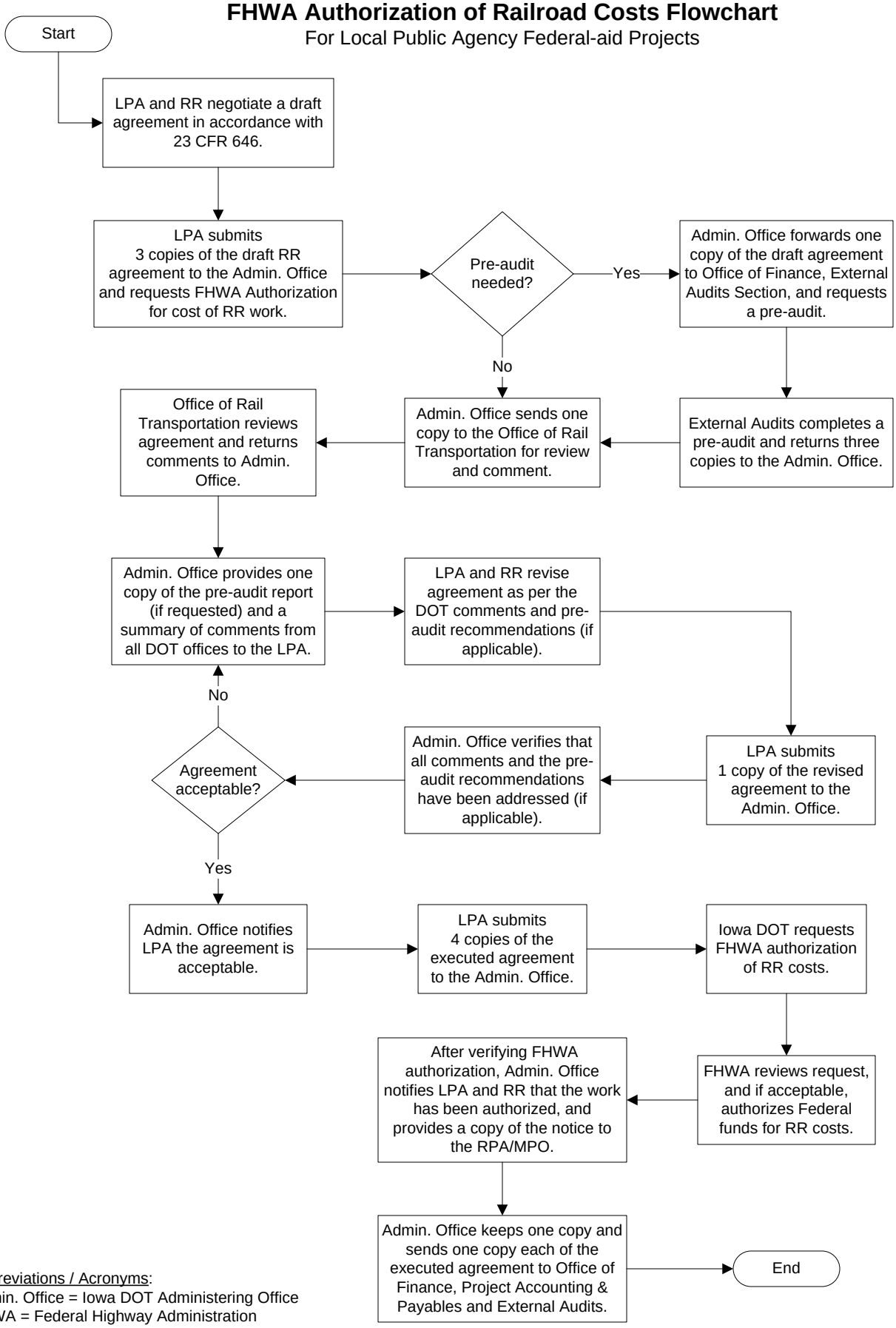
Upon receipt of a request for final reimbursement of railroad costs, the Administering Office will forward a request for a final audit or final review to the Office of Finance, External Audits. Lump sum agreements do not need a final audit, but may have a final review. External Audits may waive final audit requirements on railroad agreements less than $100,000. Final reimbursement for lump sum agreements or hourly rate agreements under $100,000 can be made prior to the final audit or review (reimbursement set by agreement).

If a final audit is conducted, External Audits will review all invoiced charges to assure that the charges are adequately supported and are eligible for reimbursement. After the final audit is complete, External Audits will return the audit report to the Administering Office, which in turn will pass the report on to the LPA and the railroad.

- If the final audit report finds that a balance is due to the railroad, the railroad may invoice the LPA for the balance due and the LPA may request reimbursement for the additional payment. Upon receipt of such a request, the Iowa DOT will reimburse the LPA for the appropriate Federal share.
- If the final audit report finds that the railroad has been overpaid, the Iowa DOT will invoice the LPA for the appropriate Federal share or deduct this amount from the balance of reimbursement that is due to the LPA for other project costs. Likewise, the LPA may request reimbursement from the railroad for the amount of overpayment.

FHWA Authorization of Railroad Costs Flowchart

For Local Public Agency Federal-aid Projects



Abbreviations / Acronyms:
Admin. Office = Iowa DOT Administering Office
FHWA = Federal Highway Administration
LPA = Local Public Agency
MPO = Metropolitan Planning Organization
RPA = Regional Planning Affiliation
RR = railroad company

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: June 18, 2007
From:	Office of Local Systems	I.M. No. 3.710
Subject:	DBE Guidelines	

Contents: This Instructional Memorandum (I.M.) includes general guidelines and procedures for a Local Public Agency (LPA) to comply with the Disadvantaged Business Enterprise (DBE) requirements on locally let construction contracts and consultant contracts that will be reimbursed with Federal funds.

Introduction

The DBE program was created to ensure nondiscrimination in the award and administration of United States Department of Transportation (U.S. DOT) assisted contracts. It seeks to create a level playing field for minority and women firms to compete, and to help remove barriers to participation in these contracts. It also aims to help DBE firms grow, so that they may compete successfully outside of the DBE program. It applies only to contracts that include U.S. DOT funds. General regulations for the program are set forth in 49 CFR 26.

The Iowa Department of Transportation (Iowa DOT) is responsible to certify DBE firms, ensure that contract opportunities are provided for DBE firms, and submit a semi-annual DBE report to the Federal Highway Administration (FHWA). For LPA Federal-aid projects, the LPA has the ultimate responsibility for determining contract goals and awards.

For the specific steps and forms needed to address the DBE requirements on Federal-aid consultant contracts, refer to I.M. 3.305, Federal-aid Participation in Consultant Costs. For the specific steps and forms needed to address the DBE requirements on locally let construction contracts, refer to I.M. 3.720, Local Letting Process – Federal-aid.

Which Firms are Certified DBE firms?

The Iowa Directory of Certified Disadvantaged Business Enterprises is the official register of eligible DBE contractor and consultant firms. This directory is available from the Iowa DOT, Office of Contracts, and is also available on the internet. Amendments to this directory are published monthly to coincide with the regular Iowa DOT contract lettings.

When Should a DBE Goal be Set?

DBE goals can only be set on Federal-aid contracts. However, they do not need to be set on all Federal-aid contracts. The Federal regulations require each contract to be analyzed to determine the potential for DBE participation. Following are some issues the LPA should consider when deciding if a DBE goal should be set for a Federal-aid contract:

1. Availability of Firms: The availability of DBE firms, as identified in the Iowa Directory of Certified DBE firms, should be a primary factor in establishing a goal.

2. Multiple ways to Meet a Goal: Contracts that provide more than one opportunity to meet a DBE goal should be given consideration. For example, DBE firms are available to perform three different types of work on the contract; or three different DBE firms are available to perform a single type of work included on the contract.

3. Size of Contract and Subcontracts: The size of the estimated contract and subcontract amounts should also be given consideration. In general, larger contracts provide more opportunities for substantial subcontracts (i.e., those that exceed $10,000). In contrast, small contracts often provide only very limited subcontract opportunities, or none at all. The Iowa DOT has developed the following ranges of estimated contract costs to assist the LPA in determining if a DBE goal should be set:

   - Less than $100,000 – These contracts generally do not provide subcontract opportunities that exceed $10,000. Therefore, DBE goals are usually not set on these small contracts.

- Between $100,000 and $250,000 – These contracts usually have subcontract opportunities that would exceed $10,000. Therefore DBE goals are usually set for these contracts, provided the contract contains work that is normally done by available DBE firms.

- Contracts with estimated costs greater than $250,000 – These contracts almost always present sufficient subcontract opportunities. Therefore, these contracts should always be considered for DBE goals. The Office of Contracts should be consulted for information on availability of DBE firms to perform work on the contract. If no DBE goal is proposed for a contract of this size, the LPA must provide an explanation to support this decision. This explanation should address the special conditions associated with the proposed work and the specific reasons why participation by DBE firms is not feasible.

What Size DBE Goal Should be Set?

The availability of DBE firms and the options available for the prime contractor or consultant to meet the DBE goal should be considered in setting the size of the DBE goal. The items of work on the proposed contract should also be reviewed. Goals on Iowa DOT let contracts are normally established in a range from 0% to 15%, in 2.5% increments. The Iowa DOT recommends use of similar procedures for LPA consultant and locally let construction contracts.

Advertising for DBE Participation

Opportunities to include DBE firms in the contract should be made, even if no DBE goal is set. This can be done by notifying available DBE firms of the upcoming contract and by encouraging the prime contractor or consultant to seek out DBE firms to use as subcontractors or subconsultants.

For consultant contracts, the LPA should consider including the following phrase in the Request for Proposals (RFP) when no DBE project goal was set: "No Disadvantaged Business Enterprise (DBE) goal has been set on this contract. However, use of DBE firms is encouraged."

Demonstration of Good Faith Efforts by Contractors or Consultants

All firms submitting a bid or proposal for contracts with a DBE goal should provide with their bid or proposal sufficient documentation of their good faith efforts to achieve the goal. This information should include: the names of the DBE firms contacted, a list of those DBE firms who submitted a quote or proposal to perform work on the contract, and an explanation of the reasons why any DBE firm that submitted a quote or proposal was not used. The documentation submitted with the bid or proposal should be sufficient for the LPA to determine the reasonableness of the contractor's or consultant's good faith effort.

LPA Review of Contractor or Consultant Good Faith Efforts

If the contractor or consultant has met the DBE goal, no review of their good faith effort is required. But if a contractor or consultant did not meet the established DBE goal, the LPA must review their good faith efforts before a contract can be awarded to such a contractor or consultant.

However, the determination of which contractor is the low bidder (or in the case of professional services, which consultant is best qualified) should be made *without regard* to whether or not the contractor or consultant achieved the DBE goal. The contractor's or consultant's good faith effort to meet the DBE goal is evaluated only *after* it is determined whom the contract would otherwise be awarded to.

To demonstrate a good faith effort, the contractor or consultant must take all steps that would reasonably be expected to achieve the DBE goal. If the contractor or consultant exceeded 80% of the average DBE commitment of other contractors or consultants who submitted a proposal for the contract, this is considered a good faith effort, and no further review is required.

If the contractor's or consultant's DBE commitment was less than 80% of the average noted above, the LPA must make a fair and reasonable judgment as to whether the contractor or consultant made an adequate good faith effort to meet the DBE goal. The LPA should consider the quality, quantity and intensity of the efforts documented by the contractor or consultant to demonstrate an active and aggressive effort to meet the goal. Guidelines to assist the LPA in making this judgment are listed below:

- Past relationships between a prime and a DBE subcontractor or subconsultant may be considered in evaluating good faith efforts, with certain restrictions. A prime may elect not to use a particular DBE subcontractor or subconsultant because of demonstrated and documented difficulties in past working relationships. However, a prime may not elect to avoid a DBE subcontractor or subconsultant solely because they have established a relationship with a non-DBE firm for similar services. One objective of the DBE program is to provide opportunities for DBE firms that they otherwise may not have had. Continuing to use non-DBE firms solely because of familiarity interferes with that objective.

- Proximity to the work site may not be considered as a reason to not select a DBE subcontractor or subconsultant. It is the responsibility of the subcontractor or subconsultant to perform the work. The subcontractor or subconsultant should have the option to travel or take other measures to adequately perform, if they are willing to do so.

- Incompatibility of electronic data systems may be considered when selecting a subcontractor or subconsultant. Primes and subs must have the ability to communicate efficiently and accurately in order to complete the work. However, efforts to overcome these differences must be made similarly for both DBE and non-DBE firms.

- Additional cost that might be associated with utilizing DBE firms is often cited as a reason to not select a DBE firm. However, it is recognized that the DBE program will have some costs in order to meet the Federal government's objective for the program. Therefore, unless the additional cost is unreasonable, cost may not be used as reason for not using a DBE firm.

Disputes Concerning Good Faith Efforts

The Federal regulations require the LPA provide an opportunity for administrative reconsideration to firms that will be denied a contract due to lack of good faith effort to achieve the DBE goal. Administrative reconsideration involves providing the contractor or consultant an opportunity to present their case as to why they were unable to achieve the DBE goal.

The administrative reconsideration meeting *must* be conducted with individuals who were not involved in the original decision to deny the contract award. The *sole* responsibility of the individuals involved in the administrative reconsideration is to confirm that the contractor or consultant did not make reasonable effort to achieve the DBE goal. The individuals conducting the administrative reconsideration cannot revise the project DBE goal, or allow the contractor or consultant to revise the amount of their DBE commitment. For LPA Federal-aid projects, the administrative reconsideration will be conducted by the Iowa DOT.

Good Faith Efforts when a DBE Firms is Unable to Perform the Work

If a DBE is unable to perform the work for which they were committed to perform, the prime contractor or consultant should notify the LPA and the Iowa DOT. The contractor or consultant must make a good faith effort to replace the dollar amount of the lost DBE commitment. No monetary sanction will be imposed if the DBE firm is unable to perform for reasons beyond the control of the prime contractor or consultant, and the prime contractor or consultant made an adequate good faith effort to replace the lost DBE commitment. Monetary sanctions should be imposed if the prime contractor or consultant intentionally fails to meet their original DBE commitment.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: April 12, 2007
From:	Office of Local Systems	I.M. No. 3.720
Subject:	Local Letting Process – Federal-aid	

Contents: This Instructional Memorandum (I.M.) includes the required methods, procedures, documents, and forms that a Local Public Agency (LPA) shall use to procure and administer a Federal-aid construction contract through a local letting or solicitation of quotes. This I.M. also includes the following attachments:

Attachment A – Pre-Award Checklist and Certification
Attachment B – Post-Award Checklist and Certification
Attachment C – Supplemental Agreement

Introduction

In an effort to streamline the delivery of Transportation Enhancement (TE) program projects, on November 12, 1996, the Federal Highway Administration (FHWA) issued a memorandum that permitted additional flexibility in the procurement of construction contracts for TE projects.

This FHWA memo permits an LPA to procure a construction contract for TE projects that are not located on the street or highway right-of-way according to Title 49 of the Code of Federal Regulations, Part 18 (49 CFR 18), also known as the Common Rule. The Common Rule allows the LPA to use State procedures (i.e., State laws, regulations, and policies) to procure a construction contract. *For work that is located on the street or highway right-of-way, in addition to the Common Rule requirements, the competitive bidding requirements of 23 CFR 635, Subpart A must also be satisfied.*

This I.M. describes the State procedures that have been developed by the Iowa DOT and approved by the FHWA. These procedures may be used for qualifying contracts where the work is either on or off the highway right-of-way. Since 1996, the FHWA has also allowed certain other types of Federal-aid contracts to follow these procedures.

Definitions

Qualifying contract – To use these procedures, the proposed contract must meet *all* of the following conditions:

1. The contract work will be reimbursed by one or more of the following Federal transportation programs:
   - Transportation Enhancement
   - Federal Recreational Trails
   - National Scenic Byways
   - Safe Routes to School (infrastructure projects only)

   If the contract work will be reimbursed by *any other* type of Federal funds, the contract shall be let by the Iowa DOT.

2. The contract work is part of a public improvement project.

3. If the contract work includes construction of a bicycle or pedestrian trail that involves grading or hard surface paving, such as asphalt or concrete, the estimated contract cost is less than $100,000.

Public improvement – As defined in Section 26.2 of the Code of Iowa. In summary, this includes any building or construction work which is constructed under the control of a governmental entity and is paid for in whole or in part with funds of the governmental entity. However, this definition excludes several specific types of work, such as: work that is part of a road, bridge, or culvert project; and repair or maintenance work performed by government employees.

Public improvement project – A project that involves construction, reconstruction, or improvement that results in a betterment to a facility by improving its original design or function.

Procurement Methods

The LPA shall procure a construction contract by using either competitive bids or competitive quotes in accordance with Chapter 26 of the Code of Iowa, as described below.

Competitive quotes

This relatively simple procurement method shall be used for securing services or supplies that do not cost more (in aggregate) than the current applicable competitive bid thresholds, as specified by the Code of Iowa. The required procedures for competitive quotations are specified by Section 26.14 of the Code of Iowa and 761 Iowa Administrative Code, Chapter 180 (761 IAC 180).

In summary, this method requires the LPA to:

1. make an oral or written solicitation for quotes that describes the work to be performed, including plans and specifications, if applicable, and all other required terms, conditions, and pertinent information;
2. make a good faith effort to obtain at least two quotes from contractors regularly engaged in the type of work to be performed; and
3. award a firm, fixed-price (lump sum or unit price) contract to the responsible quoter whose quote, conforming with all the material terms and conditions of the solicitation for quotes, is the lowest in price; or reject all quotes.

Note: Some of the procedures allowed by Chapter 26 of the Code of Iowa and 761 IAC 180 are not allowed for Federal-aid contracts procured under the procedures outlined in this I.M. These restrictions include:

- As a minimum, competitive quotes shall be used, even if not required by the Code of Iowa.
- For projects located on a public road right-of-way, no public agency shall be allowed to submit quotes for the proposed contract work.

Competitive bids

This procurement method shall be used for contracts with estimated costs in excess of the current applicable competitive bid thresholds, as specified by the Code of Iowa. The required procedures for a public letting are specified by Sections 26.3 through 26.13 of the Code of Iowa.

In summary, this method requires the LPA to:

1. publish a public advertisement for sealed bids;
2. hold a public hearing on the proposed plans, specifications, and estimate;
3. at the time and place specified in the notice to bidders, open, announce the amount of the bids, and file all proposals received; and
4. pass a resolution to either: award a firm, fixed-price (lump sum or unit price) contract to the responsible bidder whose bid, conforming with all the material terms and conditions of the invitation for bids, is the lowest in price; or reject all bids.

Bid Thresholds

The bid thresholds specified by the Code of Iowa are updated regularly. For the current thresholds, refer to the Office of Local Systems' Bid and Quote Thresholds for Iowa Cities and Counties web page. Contracts that qualify for the procedures outlined in this I.M. shall use the bid thresholds for Vertical Infrastructure, as listed on this web page.

Division of Contract Work

Work of the same type (i.e., typically done by a certain construction trade) shall not be arbitrarily broken into separate contracts in order to avoid the competitive bid threshold or to qualify for use of the local procurement procedures outlined in this I.M.

Example: If the project involves trail construction with an estimated total cost of $150,000, the project work may not be broken into two separate contracts of $75,000 each.

Work of different types may be divided into separate contracts and may be considered independently under the qualifying contract criteria, provided all of the following conditions are met: a) all resulting contracts will be procured using at least competitive quotes; b) at least one of the resulting contracts will be procured using

competitive bids, and c) all resulting contracts with an estimated cost in excess of the competitive bid threshold will be procured by competitive bids.

Example: A depot renovation project has an estimated total cost of $215,000 and will procure separate contracts for the roofing work (estimated at $20,000), exterior brick tuck-pointing (estimated at $70,000) and interior finish woodwork (estimated at $125,000). In this example, the finish woodwork must be let for bids, because the estimated cost for this contract still exceeds the competitive bid threshold. The roofing and tuck-pointing contracts may be procured using either bids or quotes.

Procedures

To satisfy and document the State and Federal requirements for locally procured Federal-aid contracts, the following procedures have been developed. The LPA shall thoroughly review all of these procedures and associated documents before beginning the process for locally procured Federal-aid contracts. Note: *Failure to follow these procedures may jeopardize Federal-aid reimbursement of the work*.

Instructions and Checklists

Attachment A – Pre-Award Checklist and Certification describes the step-by-step process that the LPA must follow to ensure compliance with the applicable State and Federal regulations related to procurement of the construction contract. Prior to awarding a contract, this checklist and certification shall be completed by the LPA and submitted to Iowa DOT to document compliance with these regulations.

Attachment B – Post-Award Checklist and Certification describes the step-by-step process that the LPA must follow to ensure compliance with the applicable State and Federal regulations related to performance of the construction contract. Prior to requesting final reimbursement for the contract work, this checklist and certification shall be completed by the LPA and submitted to Iowa DOT to document compliance with these regulations.

Agreement

Because of the additional responsibilities assumed by the LPA under these procedures, an additional agreement must be executed, as shown in Attachment C – Supplemental Agreement. This agreement between the LPA and the Iowa DOT specifies the LPA's responsibilities in procuring a Federal-aid construction contract. This agreement must be executed before advertising for bids or quotes.

Documents and Forms

The bid / quote documents and construction forms listed below are not included as an attachment to this I.M. However, all of these documents are available on the Internet in either Adobe Acrobat's Portable Document Format (PDF) or Microsoft Word format, or in some cases, both. These documents may be downloaded individually by clicking on the links below, or as a group in the Forms Packet.

To download the Forms Packet:

1. Click here.
2. When prompted, click on "Save."
3. Specify a location on your computer or network.
4. At the "Download Complete" dialogue box, click "Open Folder."
5. Double click on the file named "forms.exe."
6. At the WinZip Self-extractor dialogue box, click on "Browse," select a folder, and click "OK."
7. Click on the "Unzip" button.
8. After the extraction is complete, click "OK," then "Close."

Bid / Quote Documents

The following forms and contract documents shall be used when obtaining bids or quotes, as outlined in Attachment A - Pre-Award Checklist and Certification:

- *Bidding Proposal for County / City Projects (Form 740384)* (PDF) (Word). This Iowa DOT form must be used for taking sealed bids for qualifying contracts.

- *Request for Quotation (Form 740386)* (PDF) (Word). This Iowa DOT form must be used for receiving quotes for qualifying contracts.

- *Proposal Notice* (PDF). This document lists and summarizes the Federal-aid contract provisions that shall apply to the contract work. As a condition of the bid or quote, the person or firm submitting the bid or quote agrees to the certifications and regulations set forth in this document.

- *DBE Contract Provisions* (PDF). If a Disadvantaged Business Enterprise (DBE) goal will be set for the contract, these additional contract provisions shall also be included as part of both the bid documents and the signed contract documents. This document specifies the Contractor's DBE obligations related to the DBE program.

- *Statement of DBE Commitments (Form 517012)* (PDF). If a DBE goal was set for the contract, this form must be completed by the bidder and signed by the LPA to document the amount of DBE commitment for the contract. Even if a goal was not set, the LPA shall complete the applicable portions of the form and submit it to the Administering Office. For more information, refer to the instructions included with the form.

- *Bulletin Reporting Form (Form 650013)* (PDF) (Word). Qualifying contracts that involve highway type work must be advertised in the Iowa DOT's Weekly Letting Report, published by the Office of Contracts. This form may be used to supply the necessary information to the Iowa DOT so the project may be advertised in the Weekly Letting Report. If the contract will be obtained using quotes, or is for non-highway type work, advertisement in the Weekly Letting Report is encouraged, but not required.

Construction Forms

The following forms must be used in administering the construction contract, as outlined in Attachment B – Post-Award Checklist and Certification:

- *Project Engineer's EEO Project Site Inspection / Wage Report (Form 650170)* (PDF) (Word) This form is used for verification and documentation of compliance with Equal Employment Opportunity (EEO) and minimum wage rate requirements.

- *Form FHWA-1391* (PDF) For all open Federal-aid contracts in July, the Contractor must complete this form and submit it to the Iowa DOT in order to document the race and gender of its employees working on the contract during the last week in July.

- *Certification of Subcontractor Payments (Form 518002)* (Word). This form shall be completed by the Contractor and submitted with the request for final payment. It documents the timeliness of payments made to subcontractors in accordance with the prompt payment requirements included in the *Proposal Notice*.

- *Certification of DBE Accomplishments (Form 517013)* (PDF) This form documents the actual amounts paid to DBE firms on all locally procured Federal-aid contracts. Even if a goal was not set or no DBE firms were used, the LPA shall complete the applicable portions of the form and submit it to the Administering Office. For more information, refer to the instructions included with the form.

- *Change Order (Form 830240)* (PDF) (Word) This form shall be used to document any changes to the contract as construction progresses. It must be initiated by the LPA and approved by the Iowa DOT before any change order related work is completed. A final change order form must also accompany the LPA's request for final reimbursement.

- *Certificate of Completion and Final Acceptance of Agreement Work (Form 640003)* (PDF) (Word) This form is also completed by the LPA and forwarded to the Iowa DOT with the LPA's request for final reimbursement. It is used to verify that the LPA and the Iowa DOT have accepted the contract work as complete.

- *Interest Payment Information (Form 830236)* (PDF) (Word) This form must accompany the LPA's request for final reimbursement. This form provides information necessary to determine if interest is due to the Contractor, as required by the Code of Iowa, Section 573.14. If interest is due, the Iowa DOT will return this form to the LPA with the appropriate interest rate. The LPA shall then calculate and make the interest payment that is due the Contractor. For more information, refer to Appendix 2-38 of the Iowa DOT Construction Manual.

Pre-Award Checklist and Certification

For Locally Procured Federal-Aid Contracts

The following checklist describes the procedures and prescribes the sequence of steps that a Local Public Agency (LPA) must follow *prior* to awarding a Federal-aid construction contract. These procedures may only be used for qualifying contracts, as defined in I.M. 3.720, Local Letting Process – Federal-aid.

Note: This checklist is not a complete list of all project development activities, but instead focuses only on those activities that are related to contract procurement. This checklist assumes that the LPA has already completed the applicable project development steps, as outlined elsewhere in the Federal-aid Project Development Guide.

The LPA shall complete and submit this checklist and certification to the Iowa Department of Transportation (Iowa DOT) Administering Office as specified in the steps below. This checklist will also be used by Administering Office staff to review and document the LPA's compliance with the various Federal and State laws, regulations and policies relating to procurement of Federal-aid construction contracts.

Items with an asterisk (*) are the responsibility of the LPA. While the LPA may use the services of a consultant to perform some of these responsibilities, the LPA is ultimately responsible for ensuring that these responsibilities are carried out.

Checklist

☐* 1. LPA requests permission from the Administering Office to procure the contract locally, by means of either sealed bids or quotes. The written request must include the following items:
- the Iowa DOT project number;
- a detailed description of the type and scope of the proposed contract work; and
- an up-to-date cost estimate for the proposed contract work.

☐ 2. The Administering Office reviews the request and verifies that the proposed work qualifies for local procurement of a Federal-aid contract.

☐ 3. If the proposed work qualifies, the Administering Office prepares and sends the LPA an unsigned copy of the Supplemental Agreement for Locally Procured Federal-Aid Contracts, as shown in Attachment C. If the proposed work does not qualify, the Administering Office notifies the LPA accordingly.

☐* 4. If it has not done so already, the LPA thoroughly reviews the Supplemental Agreement and all of the guidance, information and forms contained in I.M. 3.720, Local Letting Process – Federal-aid. If the LPA has questions concerning the procedures or requirements, the LPA contacts the Administering Office for assistance.

☐* 5. LPA signs and returns the Supplemental Agreement to the Administering Office.

☐ 6. The Administering Office signs the Supplemental Agreement and distributes copies to the LPA and other Iowa DOT offices as appropriate.

☐* 7. The LPA checks its file to see if FHWA Environmental Concurrence has been received from the Iowa DOT, Office of Location and Environment. If it has not yet been received, the LPA contacts the Administering Office for assistance. For more information, refer to I.M. 3.112, FHWA Environmental Concurrence Process.

NOTE: The LPA shall not begin right-of-way negotiations until FWHA Environmental Concurrence has been received.

☐* 8. The LPA checks the status of any needed right-of-way (including acquisitions, easements, or any type of property rights). If any needed right-of-way has not been obtained, the LPA contacts the Administering Office for assistance. All right-of-way must be obtained before issuing an advertisement for bids or quotes. Note: Projects that involve Federal-aid in any aspect of the work, even if Federal-aid is not used for the property acquisition itself, must follow the Federal requirements for property acquisition. For more information, refer to I.M. 3.605, Right-of-Way Acquisition.

☐* 9. The LPA reviews the proposed contract work to determine if a Disadvantaged Business Enterprise (DBE) goal will be set, and if so, the level of DBE goal that will be established. For guidance on setting DBE goals, refer to I.M. 3.710, DBE Guidelines.

☐* 10. The LPA prepares a complete set of bid or quote documents for the proposed contract work. This shall include, as a minimum, the following documents:

Notice to Bidders The LPA may use its own form of notice used for other locally let public improvement projects. At a minimum, the Notice to Bidders must contain the following information:

- The time, date, and location for filing and opening of bids or quotes.
- The general nature or description of the proposed contract work.
- In general terms, when the proposed contract work must begin and be completed.
- Whether or not a DBE goal has been set for the contract. If a goal has been set, specify the percentage DBE goal.
- If more than 50% of the work is located within the existing right-of-way of a Federal-aid highway and is estimated to cost more than $2,000, or if any part of the contract work will be reimbursed with Safe Routes to School (SRTS) program funds, include a notification that Davis-Bacon predetermined wage rates will apply to all work under the contract. The notification should be similar to the following example, where "XXXXXX" is the number of the wage rate determination in effect at the time the bid documents are issued:

  "The predetermined wage rates for the State of Iowa, as specified in General Decision Number IAXXXXXX and required by Section XI of the Proposal Notice, are in effect for this contract. The bidder may obtain a copy of this wage rate determination on-line at: http://www.ia.bidx.com/lettings/wage_rates.pdf."

- A notification that sales tax exemption certificates will be issued by the LPA to the successful bidder and its subcontractors so that they may purchase materials and supplies for the contract free of sales tax.

  Note: State law allows the LPA the option of either issuing exemption certificates or requesting a refund of sales tax paid on materials or supplies used for public improvement projects. However, the Iowa DOT *requires* the use of exemption certificates for State or Federally funded contracts. For locally procured Federal-aid contracts, the LPA shall be responsible for obtaining these certificates from the Iowa Department of Revenue, as specified in the 701 Iowa Administrative Code, Chapter 19, Rule 19.12. These certificates shall be used by the successful bidder when purchasing materials or supplies for completion of the contract.

Plans and / or Specifications These shall be developed as appropriate for the complexity and scope of work to be performed. They must provide enough detail to enable a prospective contractor or supplier to prepare an accurate bid or quote. The method of measurement and basis of payment shall be described for each contract bid item. Because of differing Federal requirements, the plans shall also indicate the following:

- if the contract work will be reimbursed in whole or in part by the SRTS program funds; and
- if the contract work is located is located on a Federal-aid highway (Federal-aid highways include all roads shown on the Federal Functional Classification Maps, except those classified as Local and Rural Minor Collectors).

Iowa DOT Bid or Quote Form

- If sealed bids will be used to procure the contract, the LPA shall use the *Bidding Proposal for County / City Projects (Form 740384)* (PDF) (Word). If a DBE goal was set for the contract, the Bidding Proposal must specify the established DBE goal (as a percentage of the total contract amount).
- If quotes will be used to procure the contract, the LPA shall use the *Request for Quotation (Form 740386)* (PDF) (Word).

Iowa DOT Proposal Notice The bid or quote documents shall contain the *Proposal Notice* (PDF) which includes the Federal-aid contract provisions that are applicable for locally procured Federal-aid contracts.

DBE Documents If a DBE goal was set for the contract, the bid documents must also include the following (if no goal was set, these are not required):

- the *DBE Contract Provisions* (PDF), which specifies the DBE requirements that must be satisfied by both the bidder / contractor and the LPA; and
- the *Statement of DBE Commitments (Form 517012)* (PDF), which must be completed by all bidders to indicate their proposed level of DBE involvement on the contract.

☐* 11. After FHWA Environmental Concurrence has been obtained, and any needed right-of-way has been obtained, the LPA sends a request to advertise for bids or solicit quotes to the Administering Office. This request shall include the following:

- the proposed bid or quote documents, as described above;
- a detailed cost estimate, which includes the estimated unit or lump sum costs for each item of work and a total estimated contract cost;
- if the estimated cost exceeds $100,000, and no DBE goal is proposed for the contract work, an explanation as to why no DBE involvement is proposed; and
- a completed and signed *Project Development Certification (Form 730002)* (PDF) (Word), as per I.M. 3.750, Project Development Certification Instructions.

NOTE: The LPA shall not advertise for bids or solicit quotes until after the LPA has received written approval from the Administering Office to do so.

☐ 12. If not already requested, the Iowa DOT requests FHWA authorization for the contract work.

☐ 13. The Administering Office reviews the bid or quote documents. If the documents are not acceptable, the Administering Office works with the LPA to correct any deficiencies.

☐ 14. The Administering Office confirms that FHWA Environmental Concurrence and FHWA authorization have been obtained, and the *Project Development Certification (Form 730002)* has been reviewed and approved by the appropriate Iowa DOT offices.

☐ 15. If these are complete, the Administering Office notifies LPA that it may proceed to advertise for bids or solicit quotes. If any of these are not complete, the Administering Office contacts the LPA and explains what additional steps are necessary in order to proceed.

☐* 16. If using competitive bids, the LPA shall advertise the project in accordance with Code of Iowa Section 26.3. In addition, the LPA shall:

- Make a good faith effort to obtain at least 3 bids. This may include contacting prospective contractors or publishing the notice to bidders in a relevant contractor organization publication or a relevant plan room service.
- If the contract is for highway type work, advertise the project in the Iowa DOT's Weekly Letting Report. If the contract is for non-highway type work, advertisement in the Weekly Letting Report is encouraged, but not required. The LPA may send a request to the Iowa DOT, Office of Contracts for advertisement in the Weekly Letting Report via letter, e-mail, or by using the *Bulletin Reporting Form (Form 650013)* (PDF) (Word). For additional instructions, refer to I.M. 3.720, Local Letting Process – Federal-aid.
- After the local advertisement for bids is published, send a copy of the local advertisement to the Administering Office.

☐* 17. If using competitive quotes, in accordance with Code of Iowa Section 26.14 and 761 Iowa Administrative Code, Chapter 180 (761 IAC 180), the LPA shall make a good faith effort to obtain at least 2 quotes from contractors or suppliers that are regularly engaged in providing the type of work or supplies that are being requested.

☐* 18. If using competitive bids, the LPA shall hold a public hearing in accordance with Code of Iowa Section 26.12.

☐* 19. If using competitive bids, the LPA shall open bids in accordance with Code of Iowa Section 26.10. If the estimated contract cost is greater than $100,000, an Administering Office representative may attend the public letting.

NOTE: The LPA shall not award a contract until receiving written approval from the Administering Office to do so.

☐* 20. Within 5 business days after bids are opened or quotes are received, the LPA shall review all bids or quotes received for conformity with the bidding requirements. Note: The LPA shall keep copies of all quotes or bids received, regardless of whether the bids or quotes will be accepted or rejected.

If a DBE goal was set for the contract, the LPA shall complete the following additional steps:

- Review the DBE commitment of the otherwise lowest responsive bidder and determine if that bidder made a good faith effort to achieve the DBE goal. Good faith efforts shall be judged in accordance with the criteria set forth in the *DBE Contract Provisions* (PDF) and in I.M. 3.710, DBE Guidelines.
- If the lowest responsive bidder made a good faith effort, proceed to Step 24.
- If the otherwise lowest responsive bidder did not make a good faith effort, the LPA informs the otherwise lowest responsive bidder and offers an opportunity for an administrative reconsideration of its good faith effort.
- If the otherwise lowest responsive bidder requests an administrative reconsideration of its good faith effort within three (3) business days of the LPA's offer, proceed to the next step. If administrative reconsideration is not requested, proceed to Step 24.

☐* 21. The LPA notifies the Administering Office of the bidder's request for administrative reconsideration and forwards the following information to the Administering Office:

- The LPA's reasons for finding that the bidder did not make a good faith effort.
- The bidder's *Statement of DBE Commitments (Form 517012)* (PDF). Note: the bidder is not allowed to modify their original DBE commitment.
- Additional written documentation provided by the bidder to justify their good faith efforts to meet the DBE goal.

☐ 22. The Iowa DOT's Administrative Reconsideration Committee evaluates the bidder's request and makes a determination of the bidder's good faith effort. The Administering Office notifies the LPA and the bidder of its decision.

☐* 23. If the Iowa DOT approves the bidder's request, the LPA shall consider the bidder responsive with respect to the DBE good faith effort requirement. If denied, the LPA returns to Step 20 and reviews the good faith effort of the next lowest bidder.

☐* 24. If the LPA intends to award a contract to the lowest responsible and responsive bidder or quoter, the LPA notifies the Administering Office in writing and requests concurrence in award of the contract. This request shall include the following:

- a completed and signed Pre-Award Checklist and Certification (this document)
- a tabulation of all bids or quotes received (if a DBE goal was set for the contract, the tabulation of bids shall also specify the DBE commitment submitted by each bidder)
- copies of all bids or quotes received
- if a DBE goal was set, signed copies of all *Statement of DBE Commitments (Form 517012)* received; if a DBE goal was not set, one signed copy of this form with only the applicable parts completed by the LPA.

If all bids or quotes will be rejected, the LPA shall explain in writing why all bids or quotes will be rejected and its future plans for the project (i.e., whether it will be re-let, revised in scope, cancelled, etc.).

☐ 25. The Administering Office reviews the bid tabulation and the copies of bids or quotes received, including the *Statement of DBE Commitments (Form 517012)* (PDF). The Administering Office also reviews the Pre-Award Checklist and Certification and verifies all the necessary steps have been completed.

If acceptable, the Administering Office signs and dates the Pre-Award Checklist and Certification and notifies the LPA of its concurrence in award of the contract. If there are irregularities or problems with the bids or quotes, or if all the necessary steps have not been completed, the Administering Office works with the LPA to correct any deficiencies.

LPA Certification

As the duly authorized employee of the local public agency named below, having responsible charge of the project named below, I hereby certify, under penalty of perjury under the laws of the United States and the State of Iowa, that the above noted responsibilities assigned to the local public agency have been completed.

Project No.: _____ Local Public Agency: _____

Description of Proposed Contract Work: _____

Name: _____ Title / Position: _____

Signature: _____ Date: _____

Iowa DOT Review

As the authorized representative of the Iowa Department of Transportation, I have reviewed this checklist and found the local public agency named above to be in substantial compliance with its responsibilities as assigned above. I have also verified the responsibilities assigned to the Iowa DOT have been completed. The local public agency hereby receives Iowa DOT concurrence in award of the above described contract.

Name: _____ Iowa DOT Office: _____

Signature: _____ Date: _____

Post-Award Checklist and Certification

For Locally Procured Federal-Aid Contracts

The following checklist describes the procedures and prescribes the sequence of steps that a Local Public Agency (LPA) must follow *after* receiving Iowa Department of Transportation (Iowa DOT) Administering Office concurrence in the award and *prior* to receiving final reimbursement for a Federal-aid construction contract. These procedures may only be used for qualifying contracts, as defined in I.M. 3.720, Local Letting Process – Federal-aid.

Note: This checklist is not a complete list of all project development activities, but instead focuses only on those activities that are related to contract procurement. This checklist assumes that the LPA has already completed the applicable project development steps, as outlined elsewhere in the Federal-aid Project Development Guide.

The LPA shall complete and submit this checklist and certification to the Administering Office as specified in the steps below. This checklist will also be used by Administering Office staff to review and document the LPA's compliance with the various Federal and State laws, regulations and policies relating to procurement of Federal-aid construction contracts.

Items with an asterisk (*) are the responsibility of the LPA. While the LPA may use the services of a consultant to perform some of these responsibilities, the LPA is ultimately responsible for ensuring that these responsibilities are carried out.

Checklist

☐* 1. After receiving Administering Office concurrence in award of the contract, the LPA takes formal action to award the contract, as required by Code of Iowa Section 26.9 and Section 26.10, and forwards an unsigned set of contract documents to the successful bidder or quoter for signature. The contract documents shall include:
- the form of contract used by the LPA (if sealed bids were used)
- *Bidding Proposal for County / City Projects (Form 740384)* (PDF) (Word) or *Request for Quotation (Form 740386)* (PDF) (Word)
- *Proposal Notice for Locally Procured Federal-Aid Contracts* (PDF)
- *Certification of Subcontractor Payments (Form 518002)* (Word)

If the contract included a DBE goal, the following additional contract documents shall be included:
- *DBE Contract Provisions* (PDF); and
- a completed *Statement of DBE Commitments (Form 517012)* (PDF), signed by representatives of the contractor and the LPA.

☐* 2. After receipt of the signed contract documents from the contractor, the LPA signs the contract. The LPA also obtains the tax exemption certificates for the contractor and any subcontractors from the Iowa Department of Revenue. The LPA signs the tax exemption certificates and returns them to the contractor with the executed contract documents.

☐* 3. Within thirty 30 calendar days of taking formal action to award the contract, the LPA provides 2 copies of the fully executed contract documents to the Administering Office. In addition to those listed in Step 1 above, the contract documents shall include the following:
- all bonds required by the contracting authority, such as the bid bond, payment bond, or performance bond;
- all insurance certificates required by the contracting authority;
- a copy of the tax exemption certificates issued to the contractor and subcontractors.

☐ 4. The Administering Office reviews the contract documents. If the contract documents are not acceptable, the Administering Office works with the LPA to correct any deficiencies. If the contract documents are acceptable, the Administering Office notifies the LPA and distributes copies of the contract documents to other Iowa DOT offices as appropriate.

☐* 5. The LPA monitors the work progress and the contractor's compliance with the contract documents. The LPA's inspection and construction administration activities shall include, but are not limited to:
- At least once every six months, the LPA shall perform a site inspection and wage rate interview, complete the *Project Engineer's EEO Project Site Inspection / Wage Report (Form 650170)* (PDF) (Word), and place a copy of this form in its project file.
- If change orders are necessary, the LPA shall prepare change orders using the *Change Order (Form 830240)* (PDF) (Word) and obtain written approval from the Administering Office before authorizing the contractor to begin any change order related work.

☐ 6. During the last week in July, the Administering Office sends a copy of *Form FHWA-1391* (PDF) and instructions to all contractors with open locally procured Federal-aid contracts. Copies of these letters are provided to the LPAs. The contractors complete the forms and return them to the Administering Office. If a contractor fails to submit the form by mid-August, the Administering Office sends a reminder letter and provides a copy to the LPA. If the contractor fails to comply by the last working day of August, the Administering Office notifies the LPA that Federal-aid reimbursement for contract costs will be withheld until the contractor complies.

☐* 7. As work progresses, the LPA makes payments to the contractor and the contractor makes payments to its subcontractors in accordance with the contract documents.

☐* 8. After payments to the contractor are made, the LPA may periodically submit requests for Federal-aid reimbursement to the Administering Office. Upon receipt, the Administering Office reviews and processes the billings received from the LPA for reimbursement.

☐* 9. Upon completion of the project, the LPA verifies the project was completed in accordance with the contract documents. If so, the LPA sends a request for final reimbursement to the Administering Office. This request shall include the following forms and documentation, completed as appropriate:
- Post-Award Checklist and Certification (this document)
- *Certification of Subcontractor Payments (Form 518002)* (Word)
- *Certification of DBE Accomplishments (Form 517013)* (PDF), even if no DBE goal was set or no DBE firms were used
- *Certificate of Completion and Final Acceptance of Agreement Work (Form 640003)* (PDF) (Word)
- The final *Change Order (Form 830240)* (PDF) (Word), if any
- The final construction progress voucher (including all approved change orders)
- The *Interest Payment Information (Form 830236)* (PDF) (Word), completed in accordance with Appendix 2-38 of the Construction Manual.

☐ 10. The Administering Office reviews the LPA's request for final reimbursement. If the Administering Office concurs, the Administering Office begins processing the final reimbursement request and requests Federal Highway Administration (FHWA) approval. If there are problems or discrepancies, the Administering Office works with the LPA to correct them.

☐ 11. After receiving approval of the final voucher from the FHWA, the Administering Office makes the final Federal-aid reimbursement and distributes copies of the approved final voucher to the LPA, the appropriate Metropolitan Planning Organization (MPO) or Regional Planning Affiliation (RPA), and other Iowa DOT offices as appropriate.

LPA Certification

As the duly authorized employee of the local public agency named below, having responsible charge of the project named below, I hereby certify, under penalty of perjury under the laws of the United States and the State of Iowa, that the responsibilities assigned the local public agency as noted above have been fulfilled.

Project No.: _____ City or County Name: _____

Name: _____ Title / Position: _____

Signature: _____ Date: _____

Iowa DOT Review

As the authorized representative of the Iowa Department of Transportation, I have reviewed this checklist and found the local public agency named above to be in substantial compliance with its responsibilities as assigned above. I have also verified the responsibilities assigned to the Iowa DOT have been completed.

Name: _____ Iowa DOT Office: _____

Signature: _____ Date: _____

Supplemental Agreement

For Qualifying Locally Procured Federal-Aid Contracts

Recipient: _____

Project Number: _____

Original Agreement No: _____

This is a supplemental agreement between _____ (hereinafter referred to as Recipient) and the Iowa Department of Transportation (hereinafter referred to as the Iowa DOT).

Pursuant to the terms of the original agreement, and subject to the conditions and requirements set forth in Instructional Memorandum (I.M.) 3.720, Local Letting Process – Federal-aid, the Iowa DOT agrees to allow the Recipient to locally procure a construction contract or contracts for this project or portions of the project.

The Federal regulations that apply to a project vary significantly depending on the funding source and whether the project is located on or off the right-of-way of a public highway or street. Accordingly, the requirements are addressed separately below.

Requirements for all Projects

The Recipient shall procure all construction contracts according to the requirements listed in paragraphs 1 through 3 below:

1. The Recipient shall comply with all laws, administrative rules and procedures for public purchasing and contracting as applicable to political subdivisions of the State of Iowa. Procurement shall be accomplished by competitive quotes or competitive bids, unless some other cost effective method, such as the use of Recipient local forces, is proposed by the Recipient and approved by the Iowa DOT.

2. Prior to awarding a locally procured Federal-aid contract, the Recipient shall: (a) follow the procedures listed in I.M. 3.720, Attachment A – Pre-Award Checklist and Certification, and (b) complete, sign and return this checklist and certification to the Iowa DOT.

3. Prior to requesting final reimbursement for a locally procured Federal-aid contract, the Recipient shall: (a) follow the procedures listed in I.M. 3.720, Attachment B – Post-Award Checklist and Certification, and (b) complete, sign and return this checklist and certification to the Iowa DOT.

Additional Requirements for Selected Projects

If any part of the contract work is physically located within the boundaries of a public highway or street right-of-way, or if any part of the contract work will be reimbursed with Safe Routes to School (SRTS) program funds, the Recipient shall procure the construction contract(s) according to the following requirements, which are in *addition* to those listed in the paragraphs above.

4. The Recipient shall procure the contract(s) by means of sealed bids as specified in I.M. 3.720, Attachment A – Pre-Award Checklist and Certification, unless some other means of accomplishing the work, such as force account, can be shown to be more cost effective. Before procuring the work by any other means than competitive bidding, the Recipient shall request and receive Iowa DOT approval, in accordance with the procedures outlined in I.M. 3.810, Federal-aid Construction by Local Agency Forces.

5. As required by 23 CFR 635.117(a), if any part of the project work is located within the right-of-way of a Federal-aid highway, or if any part of the contract work will be reimbursed with SRTS funds, the Recipient shall not use convict labor for construction, unless it is labor performed by convicts who are on parole, supervised release, or probation

6. As required by 23 CFR 635.117(b), the Recipient shall not impose procedures or requirements which will operate to discriminate against the employment of labor from any other state, possession or territory of the United States.

7. The Recipient shall not use publicly owned equipment in construction work to be reimbursed with Federal-aid, unless use of such equipment is shown to be cost-effective. If the recipient desires to use publicly owned equipment, either as part of force account work or as a rental to the contractor, the requirements of 23 CFR 635.106 must be met. The Recipient shall also request and receive Iowa DOT approval for such use, as specified by I.M. 3.760, Public Interest Findings.

8. If the construction contract requires the contractor to purchase equipment, and ownership of such equipment will be transferred to Recipient at the end of the project, Federal-aid participation in the costs of such equipment will be limited to the portion of the amortized equipment cost that is directly attributable to the time the equipment is used on the project. The initial cost of the equipment shall be amortized over the useful life of the equipment. "Equipment" shall be as defined in 49 CFR 18.3.

9. As required by 23 CFR 635.409, the Recipient shall not impose any requirement or enforce any procedure which operates to require the use of, or provides a price differential in favor of, articles or materials produced within the State of Iowa. This policy also applies to materials of foreign origin, except as otherwise permitted by Federal law (such as the Buy America provisions).

10. As required by 23 CFR 635.112(e), no public agency shall be allowed to bid in competition or enter into subcontracts with private contractors. However, this restriction does not preclude the Recipient from performing highway construction work on a force account basis, subject to the requirements set forth in I.M. 3.810, Federal-aid Construction by Local Agency Forces.

11. As required by 23 CFR 635.110, the Recipient shall not implement procedures or requirements for bonding, insurance, prequalification, qualification, or licensing which restricts competition or prevents submission or consideration of a bid by a responsible contractor.

12. As required by 23 CFR 635.105, the Recipient agrees that it has adequate staff and is suitably equipped to satisfactorily complete the project work. A full-time employee of the Recipient shall have responsible charge of the project. Responsible charge means that the employee is: aware of the day-to-day operations of the project; involved with decisions regarding change orders; aware of the qualifications, assignments, and performance of the consultant staff; and visiting the project site on a frequency that is appropriate for the size and complexity of the project.

In witness whereof, each of the parties hereto has executed this Supplemental Agreement as of the date shown opposite its signature below.

RECIPIENT:

Signature: _____ Date: _____, 20_____

Name:_____ Title:_____

IOWA DEPARTMENT OF TRANSPORTATION:

Signature: _____ Date: _____, 20_____

Name:_____ Office:_____

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.730
Subject:	Iowa DOT Letting Process	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing document, which is included on the pages immediately following this placeholder page:

- County Engineers I.M. 3.44, Letting of County Projects by the Iowa Department of Transportation
- Packet, Flow Charts, Chart 12 – DOT Pre-letting Process
- Packet, Flow Charts, Chart 13 – DOT Post-letting Process

When I.M. 3.730 is complete, this placeholder page and the existing document referenced above should be removed and replaced with the new I.M 3.730.

Form 740001WD
4-96

Iowa Department of Transportation

INSTRUCTIONAL MEMORANDUMS
To County Engineers

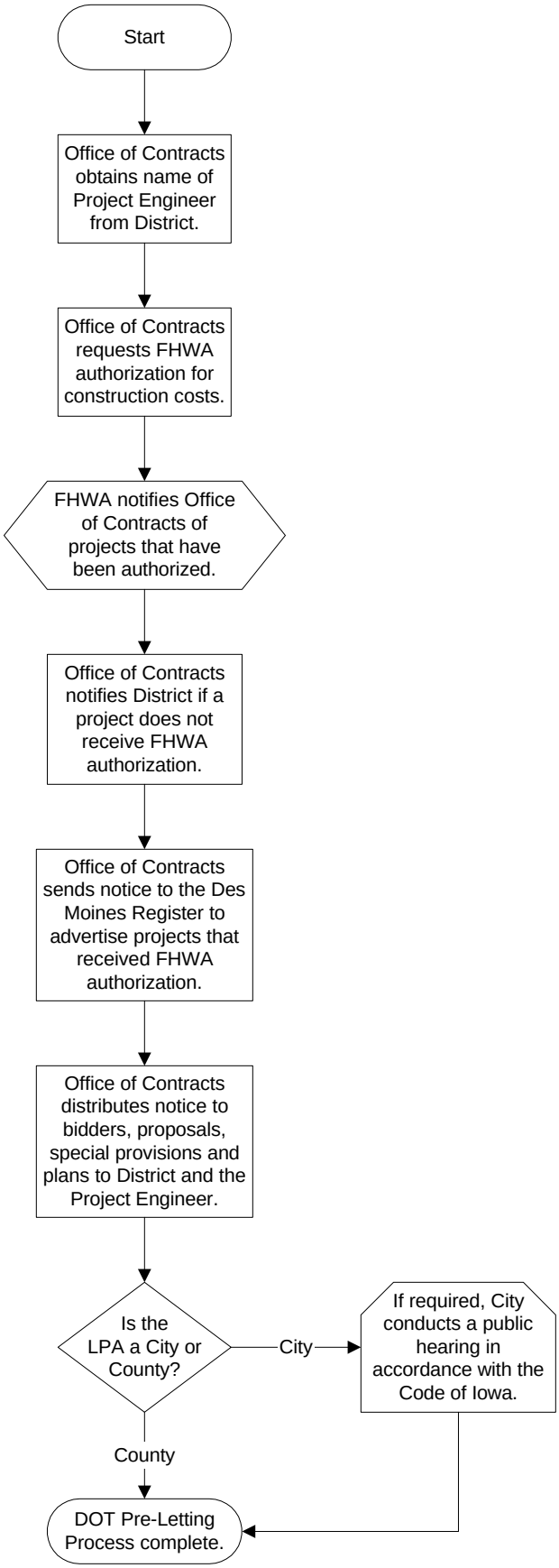
To	Date
County Engineers	September 2005
From	**IM No.**
Office of Local Systems	3.44

Subject
Letting of County Projects by the Iowa Department of Transportation

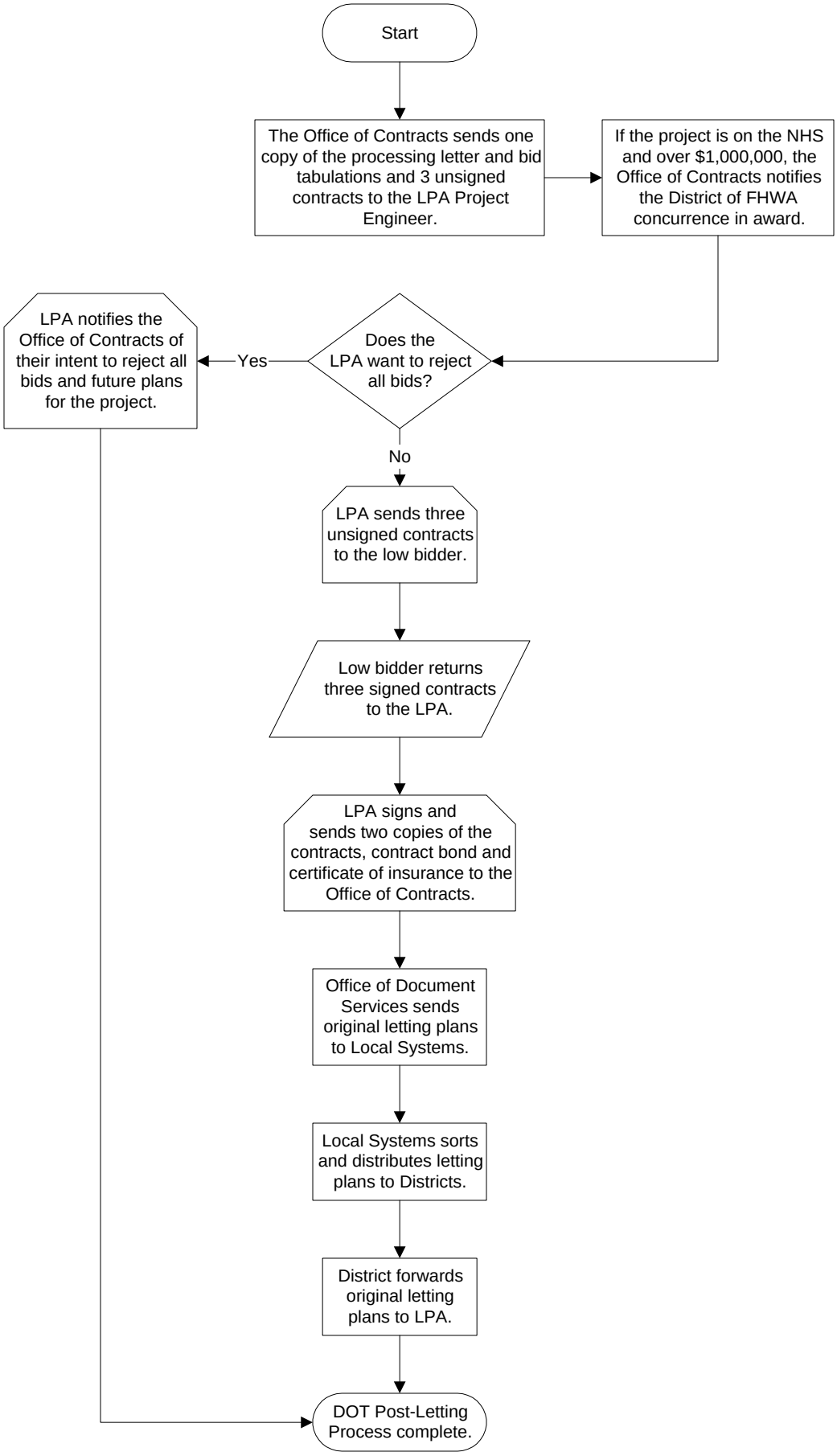
This I.M. explains the procedures that are followed when a county project is submitted to the Iowa Department of Transportation (Iowa DOT) for letting. The procedures to prepare the project for letting and then to obtain an executed contract between the county and the low bidder are described.

1. The county submits signed original final plans, a detailed cost estimate, a Project Development Certification (PDC), a cover letter, and all other required information, as per the Critical Path for Project Development Memorandum. **Any revisions or changes to the project record in the Transportation Project Management Systems (TPMS) should also be completed at this time.**
2. The Administering Office reviews the submittal to verify that all the required information has been submitted and that all review comments from earlier submittals have been properly addressed. After determining that all review comments have been addressed and the PDC is properly filled out, the Administering Office forwards the original final plans and the PDC to the Office of Contracts to prepare the letting documents for the scheduled letting.
3. The Office of Contracts completes the following steps to include the county project in the scheduled letting:
    a. Prepare proposals
    b. Advertise the letting
    c. Distribute proposals to prequalified bidders
    d. Open and analyze bids to determine lowest responsive bidder
    e. Mail contract documents and tabulation of bids to the county engineer along with an instruction letter for processing the contract documents
4. After receiving the tabulation of bids and contract documents from the Office of Contracts, the county engineer should schedule the proposed contract for action at the next Board of Supervisors meeting. Specific guidelines on the process to either reject all bids or award a contract are included in the cover letter from the Office of Contracts. Please note that within 30 days of receipt of the contract documents, the county should send to the Office of Contracts either the signed original contract documents or a notification that all bids have been rejected .
5. After the county returns the contract documents to the Iowa DOT, the Office of Contracts will furnish a signed original copy of the contract to the County Auditor and the contractor.

DOT PRE-LETTING PROCESS



DOT POST-LETTING PROCESS



INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: December 3, 2007
From:	Office of Local Systems	I.M. No. 3.750
Subject:	Project Development Certification Instructions	

Contents: This Instructional Memorandum (I.M.) provides information related to the *Project Development Certification* (PDC) (Form 730002, available in Word or PDF). It includes a description of its purpose, submittal and review procedures, and instructions for completing the form. This I.M. also includes the following attachments:

Attachment A – Project Development Certification Process Flowchart

Attachment B – Sample Project Development Certification Form

Purpose

This form is used by Iowa Department of Transportation (Iowa DOT) to verify that a Local Public Agency (LPA) project is ready to begin the letting process. It is required for any LPA project let by the Iowa DOT. This form is also required for any LPA Federal-aid project that is let locally. It is the responsibility of the LPA to ensure that the information submitted on this form is accurate. If inaccurate information is submitted, serious consequences can result, including project delays, increased costs, and possible loss of Federal funding. The LPA or their authorized representative should review this form and these instructions carefully before it is signed and submitted.

If there are any questions regarding right-of-way acquisition or relocation issues (Items 4 and 5), please contact the Local Public Agency Coordinator in the Iowa DOT Office of Right of Way for assistance. For any other questions related to this form, please contact the Administering Office.

Submittal and Review Procedures

The steps involved in the PDC review and approval process are shown on Attachment A – Project Development Certification Process Flowchart.

For projects let by the Iowa DOT, the PDC form should be received by the Iowa DOT Administering Office by the date listed in I.M. 3.005, Project Development Submittal Dates and Information. However, if the Railroad, Utility, Right-of-Way, and Relocation clearances listed on this form have not been obtained by the submittal date shown in I.M. 3.005, the PDC may be submitted to the Administering Office as late as the Thursday before the 1st Tuesday, 2 months prior to the Iowa DOT letting date. If these clearances have not been obtained by this date, the project will not be submitted for letting, unless a Public Interest Finding to enter the letting process without the remaining project clearance has been requested by the LPA and approved by the Administering Office. Refer to I.M. 3.760, Public Interest Findings, for guidance concerning justification of Public Interest Findings for project clearances.

For Federal-aid projects that are let locally, the PDC form should be submitted with the LPA's request to advertise for bids or solicit quotes. For more information, refer to I.M. 3.720, Local Letting Process – Federal-aid.

Instructions for Completing the PDC Form

The LPA shall complete the PDC form according to the following instructions. For a sample form, refer to Attachment B to this I.M.

Instructions - Page 1

Railroads:

1.a. Check "Yes" if any railroad crossings or property are within or adjacent to the project limits. Crossings or property are considered adjacent to the project limits if any construction equipment, personnel, or materials will be located within 50 feet of the centerline of the outermost track.

1.b. Check "Yes" if the project requires any work on railroad facilities or railroad right-of-way.

Work on railroad facilities includes construction, reconstruction, relocation, or modification to any of the following: rails, ties, ballast, crossing material, railroad signals and / or crossing gates, or any other equipment owned or operated by the railroad company.

Work on railroad right-of-way includes construction, reconstruction, relocation, or modification to any features located on property owned by the railroad. Examples of such features include, but are not limited to: roadway, trail, or sidewalk pavement, grade separation structures (either over or under the tracks, regardless of who owns the structure itself), drainage structures, or utilities.

Note: If question 1.b is checked "Yes," the LPA shall contact the railroad company to determine what type of an agreement is needed. Depending on the railroad company and the type of work proposed, the agreement may be a simple letter of permission signed by the appropriate officials from the railroad company and the LPA, or it may be a formal agreement between the LPA and the railroad company. For additional guidance, refer to I.M. 3.670, Work on Railroad Right-of-Way.

1.c. Check "Yes" only if the agreement between the LPA and railroad company has been signed by all parties. If "Yes," include a copy of the fully signed railroad agreement along with the PDC.

If "No," the project will not be submitted for letting at the Iowa DOT unless a Public Interest Finding is requested and approved to justify submitting the project for letting without a signed railroad agreement. Because railroad agreements can take a considerable amount of time to be developed and approved, the Iowa DOT will not usually accept a project for letting that has a railroad agreement pending. However, if negotiations for a railroad agreement are underway and it is likely that an agreement will be fully executed before the 1st Tuesday, 1 month prior to letting, the Administering Office may approve the LPA's Public Interest Finding for this condition. Otherwise, the project will be rescheduled for a later letting.

For a Federal-aid project let locally, the Iowa DOT will not grant approval to advertise for bids or solicit quotes until the railroad agreement is signed.

Utilities:

2.a Check "Yes" for any utility relocations or adjustments, regardless of whether they are publicly or privately owned.

2.b Check "Yes" only if all the affected utilities have been physically relocated so that construction may proceed without any foreseeable utility conflicts.

2.c. Check "Yes" only if all the affected utility companies involved have been notified in writing of the proposed improvements. If multiple notices have been issued, give the earliest date.

2.d. Check "Yes" only if the affected utility companies must relocate their facilities, as required by an existing permit, franchise agreement, or executed relocation agreement between the affected utility and the LPA.

If "No," the project will not be submitted for an Iowa DOT letting unless a Public Interest Finding is requested and approved to justify submitting the project for letting without a signed utility relocation agreement.

Usually, privately owned utilities are allowed on public right-of-way because of an existing permit or franchise agreement. These typically specify that if relocation of these utilities is required due to roadway work, the costs of such relocation shall be borne by the utility owners.

Privately owned utilities located in private easements (i.e., not in the existing public right-of-way) are usually not required to relocate at their own expense, but instead the LPA shall bear these costs. When such utilities must be relocated to accommodate roadway work, a separate utility relocation agreement between the LPA and the affected utility will be required. This agreement shall address the costs and proposed schedule for the relocation work.

For public utilities that are owned and operated directly by the LPA (e.g., water lines, sanitary sewers, storm sewers, etc.), this question shall be answered "Yes" since these utilities are under the direct control of the LPA. No formal permit or agreement is required.

Municipal utilities that are publicly owned, but are operated separately from the LPA's governing authority should, for the purposes of this question, be regarded as private utilities. In such cases, the utility will usually be required to move at its own expense according to the existing permit or franchise agreement with the agency having jurisdiction over the roadway. If no such permit or agreement exists, a separate utility relocation agreement will be required between the municipal utility and the LPA.

If all the affected utilities have not been relocated, the project may enter the letting process, provided that both of the following conditions are met:

1. All affected utilities have been notified.
2. All of the affected utilities are required to relocate by an existing permit, franchise agreement, or an executed utility relocation agreement with the LPA.

If these conditions are not met, the Iowa DOT will not usually accept the project for an Iowa DOT letting. However, if negotiations for a utility relocation agreement are underway and it is likely that an agreement will be fully executed before the 1st Tuesday, 1 month prior to letting, the Administering Office may approve the LPA's Public Interest Finding for this condition. Otherwise, the project will be rescheduled for a later letting.

For a Federal-aid project let locally, the Iowa DOT will not grant approval to advertise for bids or solicit quotes until all required utility agreements have been signed.

Primary Highway:

3.a Check "Yes" if the contractor will need access to primary highway right-of-way at any time during construction, including the installation of traffic control devices or for use as a staging area. "Yes" should also be checked if entrances to a primary highway are added, removed, or relocated.

3.b Check "Yes" if all the applicable permits for work on Iowa DOT rights-of-way, including extensions of primary highways within cities, have been obtained. For assistance in determining what type of permit is required, contact the appropriate District Engineering Operations Technician. All necessary permits must be approved prior to any work beginning on primary highway right-of-way. If the anticipated date of the permit cannot be confirmed with the appropriate District office, the project may not be submitted for an Iowa DOT letting. For a Federal-aid project let locally, the Iowa DOT may not grant approval to advertise for bids or solicit quotes until an anticipated date of the permit is confirmed with the appropriate District office.

Right-of-Way:

4.a Check "Yes" if any type of property rights (permanent or temporary) are required for the project.

4.b. Enter the **number** of parcels that have been acquired or have been scheduled for condemnation that require permanent right-of-way, easements, or access rights. If none, enter zero. **Complete both blanks**.

4.c. Enter the **number** of parcels that have been acquired or have been scheduled for condemnation that require temporary easements. If none, enter zero. **Complete both blanks**.

A parcel is considered "acquired" only when the LPA has physical possession of the parcel. In other words, the LPA presently has legal right to use or occupy the parcel. In the case of condemnation, a parcel is considered acquired when the payment of just compensation has been deposited with the county Sheriff. Otherwise, the parcel is considered acquired as of the possession date specified in the executed agreement between the property owner and the LPA.

If any parcels are not either acquired or scheduled for condemnation, the Iowa DOT will usually not accept the project for an Iowa DOT letting. However, if negotiations are underway for a parcel that is not being condemned and it is likely that an acquisition agreement will be fully executed before the 1st Tuesday, 1 month prior to letting, the Administering Office may approve the LPA's Public Interest Finding for this condition. Otherwise, the project will be rescheduled for a later letting.

For a Federal-aid project let locally, the Iowa DOT will not grant approval to advertise for bids or solicit quotes until all required parcels have been acquired or scheduled for condemnation.

4.d Check "Yes" only if all of the property acquisitions were accomplished using the Appraisal Waiver (or Compensation Estimate) process. The Appraisal Waiver process may only be used for minor, uncomplicated acquisitions where compensation to the property owner does not exceed $10,000 (not including damages for fence, crops, etc.). For additional guidance and instructions concerning the Appraisal Waiver process, refer to I.M. 3.605, Right-of-Way Acquisition.

Relocation:

5.a Check "Yes" if any persons, personal property, or businesses must be relocated because of the proposed project.

5.b. Enter the **number** of residential and business relocatees. If none, enter zero. Also enter the number of residential and business relocatees that have not yet been relocated. If none, enter zero. **Complete all three blanks**.

LPA Certification:

The LPA or their authorized representative must sign and date this form. Since the certification is important to the project development process and serious consequences may result from inaccurate or incomplete information, the Iowa DOT recommends that this form be signed by the LPA official responsible for the project. However, if the LPA has delegated this authority to a consultant, the consultant may sign on behalf of the LPA.

Instructions - Page 2 (Exception Status)

The information on this page will be provided to bidders to inform them which parcels have not yet been acquired and / or when they will be acquired. After the project is advertised, bidders may inspect the project site; therefore, it's critical that this information be complete and accurate.

Right-of-Way Acquisition Exceptions:

Parcel No.: Enter the parcel number, as shown on the plans, of any parcels scheduled for condemnation. If parcel numbers are not used, leave this field blank.

Station to Station / Side: Enter the approximate station ranges and side (left or right) of any parcels scheduled for condemnation.

Date of Condemnation Hearing: Enter the date of each parcel's condemnation hearing. The date of the condemnation hearing shall be at least 2 weeks prior to the letting date. If for any reason the hearing is canceled or rescheduled to a date less than 2 weeks prior to letting, the project will be rescheduled for a later letting.

Date Warrant Will be Deposited and Physical Possession Will Occur: Enter the estimated date when the payment of just compensation will be deposited with the county Sheriff. This date indicates when the contractor may have access to the parcel. This date shall be prior to the letting date.

Relocatee Exceptions:

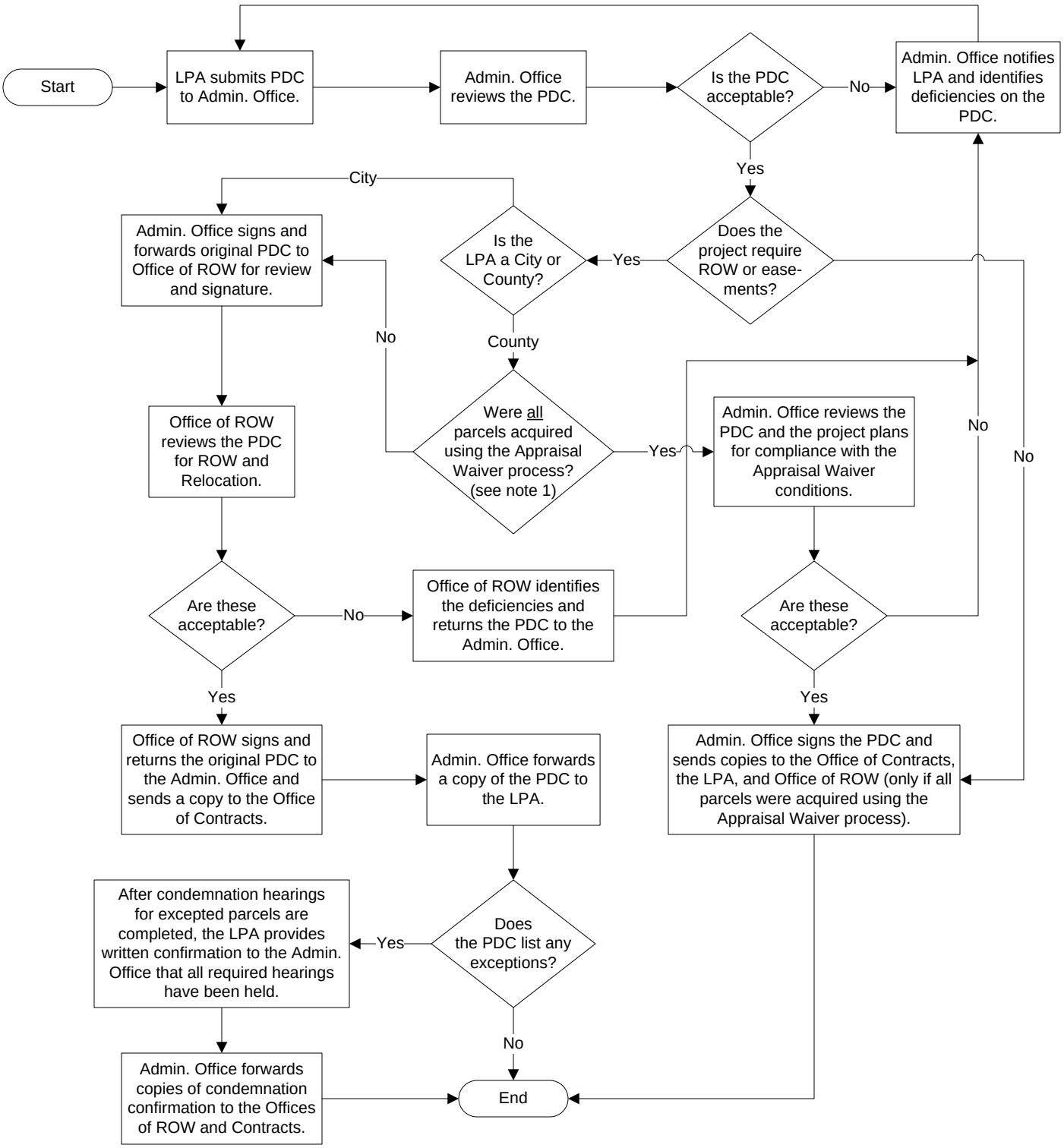
Parcel No.: Enter the parcel number for each relocatee. If parcel numbers are not used, leave this field blank.

Name / Owner or Tenant?: Enter the name of each relocatee and indicate if they are the owner of the parcel or a tenant.

Station to Station / Side: Enter the approximate station ranges and side (left or right) for each parcel with relocatees.

Vacation Date Per Notice: Enter the vacation date given to the relocatee by the LPA. Iowa law requires that at least 90 days notice be provided. The vacation date shall be prior to the letting date.

Project Development Certification Process Flowchart



Notes:
1) The Appraisal Waiver process, also known as the Compensation Estimate process, may only be used for minor, uncomplicated acquisitions for less than $10,000. For more information, refer to I.M. 3.605, Right-of-Way Acquisition.

Abbreviations:
Admin. Office = Administering Office
LPA = Local Public Agency
PDC = Project Development Certification (Form 730002)
ROW = Right-of-Way

PROJECT DEVELOPMENT CERTIFICATION

Note: For instructions, refer to Instructional Memorandum (I.M.) 3.750, Project Development Certification Instructions.

City Cedar Falls Project Number STP-U-1185(603)--70-07

County Black Hawk

1. RAILROADS

a. Is there a railroad crossing or railroad property within or adjacent to the project limits? ☒ Yes ☐ No (If No, skip to No. 2)
b. Is any work on railroad facilities or railroad right-of-way required? ☒ Yes ☐ No (If No, skip to No. 2)
c. Has the railroad agreement been fully signed? ☒ Yes ☐ No (If Yes, attach a copy of the railroad agreement. If No, the project will not be submitted for letting, unless a Public Interest Finding is requested and approved for this condition – see instructions for more information.)

2. UTILITIES

a. Are any utility relocations or adjustments required by this project? ☒ Yes ☐ No (If No, skip to No. 3)
b. Have all the known affected utilities been relocated? ☐ Yes ☒ No (If Yes, skip to No. 3)
c. Have all the known affected utilities been notified? ☒ Yes ☐ No (If Yes, give date of notice) June 15, 2007
d. For any affected utilities not yet relocated, are all required to relocate by an existing permit, franchise agreement, or executed relocation agreement? ☒ Yes ☐ No (If No, the project will not be submitted for letting, unless a Public Interest Finding is requested and approved for this condition – see instructions for more information.)

3. PRIMARY HIGHWAY

a. Will work be performed on Iowa DOT right-of-way or will access to Iowa DOT right-of-way be affected? ☐ Yes ☒ No (If No, skip to No. 4)
b. Have the applicable permits for work on Iowa DOT right-of-way been obtained? ☐ Yes ☐ No
(If No, when are they anticipated?)_____
(approximate date)

4. RIGHT OF WAY

a. Is additional right-of-way (permanent or temporary easements, fee title) required? ☒ Yes ☐ No (If No, sign and date this form in the space provided below)
b. Permanent right-of-way and/or access rights for 5 parcels have been acquired, except the 1 parcels scheduled for condemnation listed on page 2.*
c. Temporary construction easements for 2 parcels have been acquired, except the 0 parcels scheduled for condemnation listed on page 2.*
d. Were all of the parcels acquired using the Appraisal Waiver process? ☐ Yes ☒ No

*Note: Exceptions should only be listed for Items 4.b or 4.c if the parcel is scheduled for condemnation. Possession of all other parcels and / or access rights shall be acquired by the date this form is submitted. After the condemnation hearings for the parcels listed on page 2 are complete, provide written confirmation to the Iowa DOT that the condemnation hearings were held. This confirmation shall be received as soon as possible, but no later than 10 days prior to letting; otherwise the project may be withdrawn from the letting.

5. RELOCATION

a. Will any persons or businesses be displaced by this project? ☒ Yes ☐ No (If No, sign and date in the space provided below)
b. If yes, all eligible relocatees, 2 residential and 0 businesses, except those 1 parcels listed on the reverse side have obtained and relocated into replacement housing and business locations. An inspection of the project was made on site. Decent, safe, and sanitary housing has been offered and is available to residential relocatees. Barring unforeseen circumstances beyond our control, the listed occupants will relocate by the date and manner indicated.

LPA CERTIFICATION

As the authorized representative of the LPA named above, I hereby certify the following: (1) I have read and understand the instructions for this form and the information supplied on this form is correct. (2) The LPA has complied with all applicable Federal and State laws, rules, and policies related to the development of this project. (3) All of the necessary railroad and utility work has either been completed or the necessary arrangements have been made to complete this work concurrent with the project construction without undue delay or additional cost to the project. (4) If any exceptions are listed for Items 4 or 5 above, it is in the public's best interest for this project to enter the Iowa DOT letting process. The LPA shall provide the notice(s) required for Item 4 above and is aware of the possible consequences for failing to do so.

Name John Q. Public Signature John Q. Public

Title City Engineer Date September 18, 2007

FOR IOWA DOT USE ONLY

Iowa DOT Office of Right of Way Based upon the information provided by the LPA for Items 4 and 5 above, I believe all necessary property rights for this project have been acquired or listed as exceptions. The DOT reserves the right to further review the LPA's procedures for the right-of-way acquisitions and relocations to ensure compliance with the applicable Federal and State laws, rules and policies.

Signature _____

Date _____

Iowa DOT Administering Office I have reviewed all items above and have determined that this project is ready to enter the letting process, subject to approval by the Office of Right of Way if needed. If applicable, I concur with the LPA's public interest finding for Items 4 or 5.

This form (☐ is) (☐ is not) being routed to the Office of Right of Way:
(☐ for review of Items 4 and 5) or (☐ for information).

Signature _____

Date _____

SAMPLE

EXCEPTION STATUS

RIGHT-OF-WAY ACQUISITION EXCEPTIONS:

Parcel No.	Station to Station	Side	CONDEMNATION INFORMATION Date of Condemnation Hearing (must be at least two weeks prior to letting)	Date Warrant Will Be Deposited & Physical Possession Will Occur (must be prior to letting)
3B	15+25 to 18+00	Right	December 4, 2007	December 11, 2007

RELOCATEE EXCEPTIONS:

Parcel No.	Name	Owner or Tenant?	Sta. to Sta.	Side	Vacation Date Per Notice (must be prior to letting)
10	Bill and Mary Citizen	Owner	13+00 to 13+50	Left	December 11, 2007

SAMPLE

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: December 3, 2007
From:	Office of Local Systems	I.M. No. 3.760
Subject:	Public Interest Findings	

Contents: This Instructional Memorandum (I.M.) provides guidance and information about Public Interest Findings. It includes a description of what they are, conditions that require them, and procedures for their submittal, review, and approval. Except where noted otherwise, the guidance contained in this I.M. applies to any Local Public Agency (LPA) project let by the Iowa Department of Transportation (Iowa DOT), regardless of its funding source(s) or road system classification.

Introduction

There are many State or Federal rules, policies, or procedures that apply to construction contract lettings conducted by the Iowa DOT. For LPA projects, the Iowa DOT is responsible for monitoring the LPA's compliance with these rules, policies, and procedures. However, a limited number of these rules, policies, and procedures contain provisions that permit them to be waived under certain circumstances. A Public Interest Finding (PIF) is an approval by the Iowa DOT to allow such an exception.

As its name suggests, these exceptions are approved if it is in the public's best interest to do so. Usually, an exception is deemed to be in the public's best interest if it is more cost effective than following the established rule, policy, or procedure. Cost effectiveness means that the proposed action results in the lowest overall cost. However, in some situations, other factors may also be considered. A PIF, by its very nature, is an unusual situation. Therefore, the Iowa DOT will approve a PIF only after careful consideration of the specific situation and the precedent that may be set.

Conditions that Require a Public Interest Finding

For each condition listed below, the explanation describes why a PIF is required. In addition, guidance for justification of each type of PIF request is provided. The type and amount of justification required will vary, depending on the nature of the request. Whenever possible, the justification should be objective or quantifiable, such as a cost comparison or product research. The typical conditions that require a PIF include, but may not be limited to, the following:

1. *All of the applicable project clearances will not be obtained by the 1st Tuesday, 2 months prior to letting.*

   Explanation: Projects let without the necessary clearances have an increased risk of delays and increased construction costs. To help minimize the potential for delays and increased costs, the Iowa DOT's policy is to ensure that all projects have the necessary clearances prior to this date. This date is when the Administering Office submits the project plans and specifications to the Office of Contracts. It marks the beginning of the letting process.

   Project clearances, for the purposes of this document, shall include:

   a) Project Agreement (applicable to Federal-aid and State-aid projects only): This item is considered clear when the appropriate officials of both the Iowa DOT and the LPA have signed the project agreement.

   b) FHWA Environmental Concurrence (applicable only to Federal-aid projects processed as a Categorical Exclusion): This item is considered clear as of the date of notification from the Iowa DOT, Office of Location and Environment.

   c) An approved Project Development Certification (PDC): This certification addresses several project clearances, including: railroads, utilities, permits for work on Primary Highways, and right-of-way acquisitions and relocations. These items are considered clear when the PDC has been approved (signed) by the appropriate Iowa DOT office(s). For more detailed guidance on each of the clearances addressed by the PDC, refer to I.M. 3.750, Project Development Certification Instructions.

d) U.S. Army Corps of Engineers 404 Permit (if applicable): This item is considered clear when the Corps has approved the applicable 404 permit application.

e) Iowa DNR Floodplain Permit (if applicable): This item is considered clear when the Iowa DNR has approved the permit application.

The LPA should contact the Iowa DOT Administering Office for assistance in determining which clearances apply to a specific project.

Guidance: If a PIF is requested for this condition, the LPA's request shall address several things:

a) Identify the project clearance that is not yet obtained.

b) Explain the special circumstances that have prevented the LPA from obtaining the needed clearance in accordance with the established processes and typical timeframes. The LPA must be able to demonstrate that the circumstances were not reasonably foreseeable or are beyond their control. Lack of planning is not acceptable justification for approving a PIF for this condition.

c) List the steps being taken to obtain the needed clearance. The LPA must be able to show that aggressive efforts are being made to obtain the needed clearance and their chances of success are high.

d) Provide an estimate of when the needed clearance will be obtained. This estimate must be reasonable, given the typical timeframes for the clearance in question. A request that requires an accelerated process may not be approved.

e) Explain the nature of and quantify, if possible, any anticipated negative impacts that are likely to result from delaying the project. The LPA should also explain why those potential impacts outweigh the additional risk of allowing the project to proceed in the letting without the clearance.

All of the applicable clearances must be obtained by the 1st Tuesday, 1 month prior to letting. Otherwise, the project will be rescheduled for a later letting.

The 1st Tuesday, 1 month prior to letting is when the Iowa DOT begins requesting Federal Highway Administration (FHWA) authorization of projects for letting. As required by the Federal regulations (23 CFR 635.309), the Iowa DOT's request contains assurances that all of the necessary project clearances have been obtained. The Iowa DOT is responsible to the FHWA for ensuring that all Federal-aid projects comply with these regulations. While non-Federal-aid projects don't require FHWA authorization, the same procedure will be used for all projects let by the Iowa DOT.

2. *The contract documents direct the contractor to provide a single proprietary product*.

Explanation: Federal regulations (23 CFR 635.411) and the Iowa DOT's policy requires procurement of construction contracts through a competitive bidding process. Specifications that direct the contractor to provide a single proprietary product (i.e., only one brand-name product is allowed) do not allow competition by other acceptable products. Use of such specifications may unnecessarily add to the project cost.

Guidance: Generic, end-result specifications are always the preferred method because they promote competition. A less desirable but acceptable specification may include proprietary products if at least three acceptable products are listed along with the phrase, "or approved equal." However, if only one product is listed, there are several situations that may be used to justify a PIF. These are listed below:

a) The product is necessary to ensure compatibility with existing facilities or systems. For example, improvements to a traffic signal system may require a certain model of controller because other controllers would not be compatible with the existing traffic signal system.

b) No alternative products exist that adequately meet the project requirements.

c) The product is part of a research project approved by the Iowa DOT which is designed to test or evaluate new or experimental products.

3. *The LPA will directly perform some or all of the construction work using its own labor, materials, or equipment; and the LPA will request Federal-aid participation in this work*.

Explanation: Federal regulations (23 CFR 635.114(a) and 23 CFR 635 B) prohibit competition by LPAs with private contractors for award of Federally funded construction work. By completing the construction work with its own labor, materials, or equipment, the LPA is in essence competing with private contractors for this work.

Guidance: There may be situations where it is in the public's best interest for the LPA to complete the work using its own labor, materials, or equipment. This determination is made either on the basis of cost effectiveness or that an emergency situation exists. To justify this condition on the basis of cost effectiveness, refer to the instructions and procedures contained in I.M. 3.810, Federal-aid Construction by Local Agency Forces.

To justify this condition on the basis of an emergency, the LPA must be able to show that a major element or segment of the highway system has failed and immediate action is needed to:

a) minimize the extent of damage,

b) protect the remaining facilities, or

c) restore essential travel.

Work that meets this criteria may proceed prior to FHWA authorization. However, before such work may be reimbursed with Federal funds, the Iowa DOT and FHWA must concur in the emergency determination and FHWA authorization must be received.

4. *The contract documents make publicly owned equipment available for use by the contractor and the LPA will request Federal-aid reimbursement for the use of this equipment.*

Explanation: Federal regulations (23 CFR 635.106) do not allow competition of publicly owned equipment with privately owned equipment in the completion of a highway construction contract.

Guidance: In some cases, it may be in the public's best interest to approve such a use of publicly owned equipment. This determination is made exclusively on the basis of cost effectiveness.

Therefore, the LPA must be able to substantiate the costs associated with use of its equipment and compare those to the costs that would be incurred by a contractor for similar use. In calculating its own equipment costs, the LPA must take into consideration the initial purchase price, as well as maintenance and operational costs. As an alternative to calculating its own equipment costs, the LPA may use the current Iowa DOT Schedule of Equipment Rates provided by the Iowa DOT Office of Local Systems.

If a PIF is approved for this condition, the contract documents must also contain the following information:

a) a statement clearly indicating that publicly owned equipment will be made available for use by the contractor;

b) a clear identification of the specific pieces of equipment that will be made available, the rates to be charged by the LPA (if any), and the locations where the equipment will be made available or delivered; and

c) a statement giving the contractor the option of either using the publicly owned equipment or providing the necessary equipment to complete the work.

If the LPA charges a rental rate for such equipment, it shall not make a profit. If, due to unforeseeable circumstances, the use of publicly owned equipment is not approved until after the work has started, such use shall not be a basis for an increase in project costs, or Federal or State reimbursement.

5. *The contract documents for a Federal-aid contract specify that the contractor shall incorporate into the project materials or products provided by the LPA*.

Explanation: Federal regulations (23 CFR 635.407) require that all materials to be incorporated into the project be acquired through a competitive bidding process. Similar to the above conditions, competitive bidding usually delivers the project at the lowest possible cost to the public. Requiring the contractor to use materials provided by the LPA does not allow contractors to select their own sources for materials or products, and may result in higher project costs.

Guidance: When considering the justification for this condition, materials or products furnished by the LPA will be evaluated on the basis of two general categories, as described below:

a) Manufactured materials (products): Examples include items such as street lights, utility accesses or covers, water mains, fire hydrants, etc.

   Justification of a PIF for this condition should be based on cost effectiveness or existing facilities / systems compatibility.

   If a PIF is approved for the LPA to furnish manufactured materials or products to the contractor, or one of the exceptions below applies, their use must be made mandatory. Optional use is not permitted because this in effect allows the LPA to compete with private suppliers. Also, to be eligible for Federal participation, the LPA must be able to demonstrate that the product was previously acquired through a competitive bidding process, unless another method has been approved by a separate PIF for a non-competitive contract award (see no. 2 above).

b) Local natural materials: Examples include earth material (borrow), recycled pavement materials, sand, or gravel.

   Justification of a PIF for this condition should be based on cost effectiveness. When calculating its cost for local natural materials, the LPA must account for all costs incurred in obtaining and providing the materials, such as their cost to acquire a borrow or quarry source, and their labor and equipment costs in transporting or stockpiling the material.

   If a PIF is approved for the LPA to furnish local natural materials, or if one of the exceptions listed below applies, the contract documents must clearly specify how and where they will be provided. If the LPA elects to deliver the materials to the project site, the method, frequency, and location of the delivery must be specified. Or, if the LPA chooses to make its stockpile, borrow, or quarry areas available for the contractor's use, their locations must be identified. Also, the unit price (if any) that will be charged for the materials must be stated in the contract documents. If Federal participation is requested in the cost of local natural materials, the Federal share will be limited to the LPA's actual costs, or the fair market value, whichever is less.

Exceptions: Certain established contracting practices of state, county, and city highway authorities in Iowa may be subject to this condition. However, for projects not located on the National Highway System (NHS), the Iowa DOT has determined that the following contracting practices are always in the public's best interest. The NHS includes all Interstate and certain other Principal Arterial highways (see NHS map). For the following exceptions, a PIF is not required:

Exception for manufactured materials (products):

a) The product will be supplied from the LPA's existing inventory and the total amount of product to be provided is valued at less than 5% of the estimated contract cost or $5000, whichever is less. This exception is only applicable when the LPA did not acquire the product specifically for the project, but is providing the product out of their existing inventory. For example, if a project requires replacement of a few utility access covers and castings, providing these products out of the LPA's existing inventory will always be more cost effective than bidding such a small quantity.

Exceptions for local natural materials include:

a) The local natural materials will be provided for optional use by the contractor at no cost to the contractor.

b) The local natural materials were obtained by the LPA as a result of its other regular operations, will be provided at no cost to the contractor, and will be provided to the contractor on-site.

   In the course of its regular operations, it is not unusual for an LPA to obtain local natural materials that may be reused for other road or street construction projects. Examples include, but may not be limited to: earth material obtained from ditch cleaning activities; stockpiled recycled pavement, base or shoulder materials obtained from other street or highway projects; or a borrow area that was originally acquired for other projects or purposes.

   If the local natural materials were obtained by the LPA specifically for the Federal-aid project, this exception does not apply and a PIF is required.

c) The local natural materials were obtained by the LPA as a result of its other regular operations, will be provided at no cost to the contractor, and the materials are located near the project site.

   In the case of stockpiled materials or borrow areas, their proximity to the project site must be close enough that the contractor's cost to haul the material from the stockpile or borrow area is obviously less than what it would cost for the contractor to furnish and haul the material. If the cost difference is not obvious, a PIF is required.

6. *The contract documents for a Federal-aid contract specify a mandatory disposal area for excavated materials*.

Explanation: Federal regulations (23 CFR 635.407) prohibit the contract documents from specifying a mandatory disposal site for excess excavated materials. The excess excavated materials may have some value. Therefore, if the contractor was allowed to dispose of the excavated materials elsewhere, perhaps by selling the excavated materials to another interested party, the contractor may be able to submit a lower bid as a result.

Excavated materials typically include earth, rock, or other local natural materials as defined above. However, this condition is not applicable to salvaged highway appurtenances (e.g., light poles, guard rail etc.).

Guidance: This requirement may be waived if the LPA can demonstrate that use of a mandatory disposal area is cost effective. Use of a mandatory disposal area may also be justified on the basis of environmental considerations, provided that it would not result in excessive extra costs. The findings of the environmental document may be used to substantiate a PIF based on environmental considerations.

If PIF is approved for this condition, or one of the exceptions below applies, the location of the mandatory disposal area shall be clearly identified in the contract documents.

Exceptions: Similar to condition no. 5 above, certain established contracting practices of state, county, and city highway authorities in Iowa may be subject to this condition. However, for projects not located on the NHS, the Iowa DOT has determined that the following contracting practices are always in the public's best interest. For the following exceptions, a PIF is not required:

a) The excavated materials will be stockpiled by the contractor at a mandatory disposal area on the project site, hauled away by the LPA, and re-used by the LPA on other roadways under its jurisdiction.

b) The excavated materials will be stockpiled by the contractor at a mandatory disposal area near the project site and will be re-used by the LPA on other roadways under its jurisdiction.

   In this case, the stockpile location shall be close enough to the project site so that the contractor's cost to haul the excavated materials is obviously less than the fair market value of the excavated materials. If the cost difference is not obvious, a PIF is required.

For both exceptions listed above, the Federal share of the contractor's costs for work associated with stockpiling the excavated materials will only include hauling and dumping the materials. The cost of any additional work associated with the excavated materials (e.g., shaping or compacting excess earth) will not be reimbursed with Federal funds. Any such non-participating work shall be clearly segregated in the contract pay items.

Procedures for Requesting and Approving a Public Interest Finding

1. If the LPA proposes to do something that requires a PIF, the Iowa DOT Administering Office contacts the LPA and explains the reasons why the rule, policy, or procedure is in place. The Administering Office should encourage compliance with the rule, policy, or procedure by suggesting alternatives that do not require a PIF.

2. If, after consultation with the Administering Office, the LPA still feels that a PIF can be justified, the LPA provides a written request for approval (may be a letter, memo, or e-mail) to the Administering Office. This request shall include sufficient information (e.g., cost comparisons, a description of specific project requirements, etc.) to support the PIF.

3. The Administering Office reviews the LPA's request and approves or disapproves the request in writing to the LPA. The Administering Office keeps a copy of the request and approval or disapproval in its project file. If the PIF was for a project clearance (see condition no. 1), the Administering Office's approval will also indicate how far the project may progress in the letting without the needed clearance.

4. When the project plans and specifications are turned-in to the Iowa DOT Office of Contracts, the Administering Office includes a copy of the LPA's PIF request and the Administering Office's written approval. If the need for a PIF is discovered after the plans are turned-in, the approved PIF documentation shall be submitted to the Office of Contracts as soon as possible, but no later than the 1st Tuesday, 1 month prior to letting. Otherwise, the project will be rescheduled for a later letting.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

To:	Counties and Cities	Date: N/A
From:	Office of Local Systems	I.M. No. 3.805
Subject:	Construction Inspection	

NOTICE:
This Instructional Memorandum (I.M.) to Local Public Agencies is under construction.

This I.M. is not yet complete; however, some of the information that will be contained in this I.M. is currently part of the following existing document, which is included on the pages immediately following this placeholder page:

- County Engineers I.M. 3.51, Construction Forms

When I.M. 3.805 is complete, this placeholder page and the existing document referenced above should be removed and replaced with the new I.M 3.805.

Form 740001WD
4-96

Iowa Department of Transportation

INSTRUCTIONAL MEMORANDUMS
To County Engineers

To	Date
County Engineers	September 2002
From	**IM No.**
Office of Local Systems	3.51
Subject	
Construction Forms	

Forms needed for construction documentation are listed and described in Section 2.60 of the Iowa Department of Transportation (Iowa DOT) Construction Manual. The Construction Manual is a part of the Iowa DOT's Electronic Reference Library (ERL) and is available on the internet at: http://www.state.ia.us/dot/specifications/.

The ERL is also available in CD-ROM format from the Iowa DOT Specification Section and may be ordered by calling (515) 239-1742. The ERL CD-ROM may also be ordered on-line at:

http://www.dot.state.ia.us/specifications/erl_cd_order_form.htm

Construction forms may be obtained in hardcopy format from the Iowa DOT Offices listed in Section 2.60 of the Construction Manual. Most of these forms may also be downloaded from the Iowa DOT forms page at: http://www.dot.state.ia.us/forms/index.htm.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: December 11, 2008
From:	Office of Local Systems	I.M. No. 3.810
Subject:	Federal-aid Construction by Local Agency Forces	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures to receive Federal-aid reimbursement for the costs of construction performed by Local Public Agency (LPA) forces. Topics addressed include eligible costs and activities, submittal requirements, and the procedures for requesting, reviewing, and authorizing Federal funds for such use.

Introduction

Federal regulations (23 CFR 635.114(a)) require Federal-aid projects to be constructed by contracts awarded on the basis of competitive bidding. However, in rare cases, this requirement may be waived if the LPA finds it is more cost effective to use some other method, as provided for in 23 CFR 635, Subpart B. One such method is the use of LPA forces to perform the construction. The LPA's finding of cost effectiveness shall be reviewed and approved by the Iowa Department of Transportation (Iowa DOT) before construction by LPA forces can proceed.

The term "cost effective" means the efficient use of labor, equipment, materials, and supplies to assure the lowest overall cost. A "finding of cost effectiveness" must demonstrate two things:

1. completing the proposed construction work using LPA forces will be cost effective; and
2. there are special or unique circumstances that justify deviating from the competitive bidding process.

Eligible Costs

Subject to the approvals and procedures outlined in this I.M., Federal funds may participate in the direct costs of labor, equipment, materials, or supplies provided by LPA to complete the project construction, either in whole or in part. Labor costs include salaries, wages, and other related payroll expenses, such as leave, holidays, social security, retirement, and other payroll benefits.

Federal funds may also participate in the associated indirect costs, provided such costs have been allocated to the Federal-aid project in accordance with an approved cost allocation plan that meets the requirements of 2 CFR 225 (previously OMB Circular A-87). Such cost allocation plans must be reviewed and approved on annual basis by the Iowa DOT. The Federal Highway Administration (FHWA) may also elect to review the LPA's cost allocation plan. If reimbursement of indirect costs is desired, the LPA should contact the Administering Office for additional assistance.

Submittal Requirements

To receive Federal-aid reimbursement for construction by LPA forces, the LPA must submit the following information to the Iowa DOT Administering Office to support its finding of cost effectiveness:

1. An explanation, including supporting documentation, of the reasons or special circumstances that justify using LPA forces in lieu of traditional competitive bidding. Examples of supporting documentation may include things such as:

   a) a failed attempt to accomplish the proposed work by competitive bidding due to lack of bids or unreasonable bids; or
   b) a history of failed competitive bidding in the local area on similar work due to lack of bids or unreasonable bids, including reasons why competitive bidding, if attempted, would be unlikely to succeed for the requested work.

   There may be other reasons or situations that justify the use of LPA forces. However, in all cases, they must be unusual and are unlikely to recur.

2. Identification of the project in the Statewide Transportation Improvement Program (STIP), a description of the project, and the kind of work to be performed by LPA forces.

3. An estimate of the construction costs to be performed by LPA forces that includes the following:
   (a) Staff time (hours) for each different phase of the work. Staff time should be estimated separately for each employee or classification of employees.
   (b) Wage rates for each employee or classification of employee including any payroll expenses that are part of the wage rate, such as IPERS, FICA, employee benefits, etc.
   (c) Equipment type, hours of use, and unit costs (such as the rental rate per hour or per mile). Note: If an LPA must acquire or rent substantially more equipment than required for its normal operations, it may be difficult to justify the use of LPA forces.
   (d) Costs of materials and supplies to be incorporated in the project. Include sources and suppliers, if known.
   (e) Source documentation for the unit costs (labor, equipment, and materials) used to prepare the estimate.

4. A cost estimate of the work that assumes the work will be competitively bid. This estimate is for comparison purposes with the estimate described in item 3 above. Source documentation for the unit costs should also be included with this estimate. Unit bid price averages maintained by the Iowa DOT may be used as source documentation for this estimate.

5. The amount of Federal funds requested.

Procedures

The necessary procedures to request, review and approve Federal participation in construction by LPA forces are summarized below:

1. The LPA submits a finding of cost-effectiveness and a request for Federal-aid participation in construction by LPA forces to the Administering Office, including a cost estimate and all supporting documentation, as described above.

2. The Administering Office reviews the cost estimate and completeness of submittal. If the submittal is incomplete or is not acceptable, the Administering Office works with the LPA to address any concerns. The Administering Office also verifies that Environmental Concurrence has been obtained. If not, the Administering Office reminds the LPA that construction work by LPA forces may not proceed until Environmental Concurrence and FHWA Authorization has been obtained.

3. The Administering Office requests a pre-audit from the Office of Finance (External Audits).

4. External Audits reviews the pre-audit request and either performs a pre-audit or notifies the Administering Office that the pre-audit has been waived. If a pre-audited is conducted, External Audits sends 2 copies of the pre-audit report to the Administering Office and 1 copy to Office of Finance (Project Accounting and Payables).

5. The Administering Office sends 1 copy of the pre-audit report (if completed) to the LPA. If the pre-audit report requires modifications of the LPA's submittal, the LPA must respond to the findings of the pre-audit report. The Administering Office will work with the LPA and External Audits until the LPA's request is acceptable.

6. Once the LPA's request is acceptable, and after verifying that Environmental Concurrence has been obtained, the Administering Office requests FHWA authorization. The Administering Office's request shall indicate its concurrence with the LPA's finding of cost-effectiveness and include all supporting documentation.

   Note: The Administering Office shall also provide a copy of the request and all supporting documentation to the FHWA prior to initiating action in the Fiscal Management Information System (FMIS). In addition, the "State Remarks" of the FMIS document shall indicate the request is for construction by LPA forces.

7. After FHWA authorization is received, the Administering Office notifies the LPA and provides the effective date of FHWA authorization. The Administering Office sends 1 copy of this notice to External Audits,

Project Accounting and Payables, and the appropriate Metropolitan Planning Organization (MPO) or Regional Planning Affiliation (RPA).

8. After incurring construction costs by LPA forces, the LPA may submit periodic requests for reimbursement to the Administering Office. The requests shall document the actual costs incurred, including: staff hours and rates, equipment usage and rates, and costs of materials or supplies.

9. The Administering Office reviews and processes the requests for reimbursement as appropriate.

10. Upon completion of construction by LPA forces, the LPA notifies the Administering Office and requests final reimbursement for such costs.

11. The Administering Office requests a final audit from External Audits.

12. External Audits reviews the final audit request and either performs a final audit or notifies the Administering Office that the final audit has been waived. If a final audit was conducted, External Audits sends 2 copies of the final audit report to the Administering Office and 1 copy to Project Accounting and Payables.

13. The Administering Office provides a copy of the final audit report to the LPA. If additional reimbursement is due, the Administering Office processes the final reimbursement. If the final audit finds the LPA has been over-reimbursed, the Administering Office will request the Office of Finance, Financial Management and Reporting, to invoice the LPA for the appropriate Federal share or deduct this amount from the balance of Federal reimbursement that is due to the LPA for other project costs.

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: December 3, 2007
From:	Office of Local Systems	I.M. No. 3.910
Subject:	Final Review, Audit, and Close-out Procedures for Federal-aid Projects	

Contents: This Instructional Memorandum (I.M.) provides guidelines and procedures for closing-out Local Public Agency (LPA) Federal-aid projects, including field inspections, pre-audits, final audits or reviews, final Federal reimbursement, and records retention. This I.M. includes the following attachments:

Attachment A – Project Close-out Process Overview Flowchart. This attachment illustrates the entire project close-out process. It also directs the reader to the appropriate flow chart for the final review, audit, and payment of construction work, depending on the type of project.

Attachment B – Final Review and Audit Process Flowchart – Highway or Bridge Construction. This attachment illustrates the final review, audit, and payment process for traditional highway and bridge construction contracts that are let by the Iowa DOT and use the Iowa DOT Standard Specifications.

Attachment C – Final Review and Audit Process Flowchart – Non-highway Construction, DOT Specifications. This attachment illustrates the final review, audit, and payment process for non-highway type construction contracts that use the Iowa DOT Standard Specifications. These may be let at the Iowa DOT or locally*. They may include trails or landscaping / scenic improvement projects, such as those funded by the Transportation Enhancement, Federal Recreational Trails, Scenic Byways, and Safe Routes To School programs.

Attachment D – Final Review and Audit Process Flowchart – Non-highway Construction, Non-DOT Specifications. This attachment illustrates the final review, audit, and payment process for non-highway construction contracts that do not use the Iowa DOT Specifications. These may be let at the Iowa DOT or locally*. In addition to the kinds of projects listed for Attachment C above, these may include building restoration or renovation projects.

*For more information on the types of contracts that may be let locally, refer to I.M. 3.720, Local Lettings – Federal-aid.

Attachment E – Pre-audit Checklist. This attachment includes a checklist and instructions to guide the LPA's Project Engineer through the pre-audit process and prepare for a final audit. This checklist will also be used by the Iowa DOT staff when performing the final construction contract audit.

Attachment F – Final Forms Packet Checklist. This attachment includes a checklist and instructions that describe the necessary forms and documents that should accompany the Project Engineer's request for approval of final payment to the Contractor.

Introduction

The primary objective of this I.M. is to document the process for closing-out Federal aid projects and set expectations, for both LPA and Iowa DOT staff, concerning the amount of time required to complete this process. Timely completion of the close-out process is very important because of Federal and State laws or regulations that pertain to prompt payment to contractors and subcontractors. The flowcharts included as Attachments A through D of this I.M. provide an estimate of the *minimum* amount of time required to complete each step. However, depending on the circumstances of each project, more time may be required.

Another important objective of this I.M. is to outline the documentation necessary to ensure that the project was constructed in accordance with the approved plans and specifications. In order to effectively carry-out its responsibilities to oversee the use of Federal funds, the Iowa DOT reviews some of this documentation. If such documentation is lacking, the Iowa DOT has the responsibility and the authority to deny Federal participation in some or all of the project costs.

Besides reviewing the construction documentation, the Iowa DOT is also responsible to ensure that the LPA is adequately staffed and equipped to undertake a Federal-aid project. If the Iowa DOT's reviews of an LPA's

projects during the close-out process consistently indicate that the LPA is not adequately staffed or equipped, the Iowa DOT has the responsibility and the authority to withhold letting of future Federal-aid projects until the LPA makes the necessary corrections.

The best way to make the project close-out process run smoothly and quickly is to ensure that proper documentation and records are kept during construction. Some of the documentation reviewed during the close-out process is discussed in I.M. 3.805, Construction Inspection. Therefore, the information contained in I.M. 3.805 should be thoroughly reviewed before beginning either construction or the project close-out process.

Besides I.M. 3.805, the Iowa DOT's Construction Manual should also be consulted as a resource for construction inspection and close-out procedures. The current version of the Construction Manual is available on-line as part of the Iowa DOT's Electronic Reference Library. In many places throughout this I.M., references to the Construction Manual are provided for additional explanation or information.

> Note: LPA and consultant staff should be aware that the Construction Manual is written primarily for use by Iowa DOT staff. Therefore, the terminology it uses reflects the Iowa DOT's organizational structure. For example, references in the Construction Manual to the Resident Construction Engineer (RCE) should be interpreted as referring to the LPA's Project Engineer. Likewise, references to the District Construction Engineer (DCE) correspond to the District Local Systems Engineer (DLSE), or in the case of projects administered by the Office of Systems Planning, the appropriate Grant Program Manager or their designee. In addition, the LPA should also recognize that some of the procedures described in the Construction Manual are internal to the Iowa DOT and therefore may not be applicable for LPA administered projects. If you have any questions concerning the applicability of procedures in the Construction Manual, contact the Administering Office for assistance.

While not detailed extensively in this I.M., timely completion and review of other non-construction contracts that have Federal participation, such as consultant, railroad, or utility relocation contracts, are also very important to the project close-out process. When such Federal-aid participating work is complete, the LPA should forward a request for final reimbursement for that work to the Iowa DOT as soon as possible. This enables the final review or audit process for such contracts to begin prior to completion of the construction contract, when possible. Sometimes the final reviews or audits of consultant, railroad, or utility work can take a significant amount of time, and therefore have potential to delay close-out of the project as a whole. For more information regarding these procedures, refer to I.M. 3.305, Federal-aid Participation in Consultant Costs; I.M. 3.650, Federal-aid Participation in Utility Costs; and I.M. 3.680, Federal-aid Projects Involving Railroads.

The attachments referenced above provide an outline of the entire process for closing-out a Federal-aid project. The remainder of this I.M. provides additional explanation for each major part of this process. These parts include the following:

Completion of Field Work

The project field work is considered complete when all the Contractor's items of physical work have been completed. In other words, unless some of the work is found to be defective, the Contractor will not need to come back to the project site.

Completion of field work requires some, but not all of the paperwork that will eventually be required from the Contractor. Before accepting the field work as complete, the Project Engineer should obtain the following from the Contractor, as applicable: survey books, the Contractor's Daily Traffic Control Diary, Abandoned Water Well Plugging Record (DNR Form 542-1226), corrected profilometer reports, and plant reports. In addition, any non-compliances related to field work should be resolved before accepting the field work as complete.

Inspection of Field Work

After the Contractor has completed the field work, the Project Engineer shall promptly inspect the work. If any items of work are not complete and in reasonable close conformity to the contract documents, the Project Engineer shall notify the Contractor in writing and specify the corrective action that must be taken. Once the Project Engineer determines all of the work is satisfactorily completed, including any corrective actions, the Project Engineer shall send a copy of the final *Weekly Report of Working Days* (Form 830238, available in Word or PDF) to the Administering Office and request a field inspection.

After receiving the Project Engineer's request, the Administering Office will conduct an on-site inspection to verify completion of the field work. This inspection may occur prior to or concurrent with the Administering Office's final audit, if conducted. The Administering Office staff will notify the Project Engineer in writing if there are any items of work that are incomplete or unsatisfactory. Upon receipt of this information, the Project Engineer shall work with the Contractor as needed to make the necessary corrections.

Statement of Completion and Final Acceptance of Work

After the field inspections have been completed, and any required corrective actions completed, the Project Engineer shall notify the Administering Office in writing. This notice shall specify the corrective actions that have been taken, if any, and include the appropriate form to document the completion and acceptance of the work. The Administering Office staff, at its discretion, may spot check these corrections. The form used to document the completion and acceptance of the work depends on the type of specifications used:

> For projects using the Iowa DOT Standard Specifications, the Project Engineer shall sign and date the *Statement of Completion and Final Acceptance of Work* (Form 830435, available in Word or PDF) and send the original to the Administering Office. Upon receipt, the Administering Office will sign and date Form 830435, return a copy to the Project Engineer, forward the original to the Office of Finance, Project Accounting and Payables Section, and retain a copy for the Administering Office's file. The Project Engineer shall then send a copy to the Contractor.
>
> For projects that use other specifications, the Project Engineer shall sign and date the *top portion only* of the *Certificate of Completion and Final Acceptance of Agreement Work* (Form 640003, available in Word or PDF), send a copy to the Administering Office and the Contractor, and keep the original in the LPA's file. The only purpose of this submittal is to document the date of completion of the work. It is not intended to be the LPA's approval for final payment. Approval for final payment occurs later, at which time the original Form 640003 shall be sent to the Administering Office as part of the Final Forms Packet submittal. For more information, refer to Attachment D and Attachment F.

The date of the Project Engineer's signature on Form 830435 or 640003 is important, because this date marks the beginning of a 50 day count that is used to determine whether interest may be due to the Contractor. For more information, refer to I.M. 3.930, Interest Payment Procedures.

A County Board of Supervisors may authorize its County Engineer to sign either the Form 830435 or 640003 on its behalf, provided, that it has passed and executed a resolution authorizing the County Engineer to do so. For more information, refer to I.M. 3.940, County Engineer Resolution.

Pre-audit Process

Prior to requesting a final audit from the Administering Office, the Project Engineer shall conduct a pre-audit. The pre-audit consists of a thorough review of the construction contract documentation, as specified on Attachment E – Pre-audit Checklist. The purpose of the pre-audit is to prepare for a possible audit by Administering Office staff. Therefore, when conducting the pre-audit, the Project Engineer should ensure that all of the documentation associated with the construction contract is complete, correct, and well organized. If the Administering Office finds that the documentation is not complete, correct, or well organized, it may defer its final audit until the Project Engineer addresses these issues.

As part of the pre-audit process, the Project Engineer shall also prepare the proposed final quantities, including all applicable price adjustments, such as incentives / disincentives, liquidated damages, or adjustments due to non-compliance with the contract documents. Additional guidance for each of these items is provided in I.M. 3.805, Construction Inspection, and the Construction Manual sections referenced by Attachment E to this I.M.

When the pre-audit is complete, the Project Engineer shall notify the Administering Office that the project is ready for an audit. This notification shall include a completed Pre-audit Checklist, and if applicable, all materials review forms and associated documentation, as specified by Materials I.M. 101. The applicability of the materials audit process is discussed in the Final Audits section below.

Semi-final Voucher or Semi-final Pay Estimate

After the pre-audit is complete, the Project Engineer shall send the proposed final quantities, including any price adjustments, to the Contractor for review and acceptance. For contracts that are paid by the Iowa DOT through

its Contractor Pay System (CPS), this submittal consists of the semi-final voucher, which is documented using the *Construction Contract Progress Voucher* (Form 181013, available in PDF), or if the Field Manager software is used, a similar computer generated form. For contracts where the LPA makes payment to the Contractor directly, this submittal consists of a semi-final pay estimate, which may be documented using either the *Final Estimate of Road or Bridge Work on Non-State Roads / Streets* (Form 181235, available in Word or PDF) or an equivalent form.

The submittal of the semi-final voucher or pay estimate to the Contractor should be made at the same time a final audit is requested from the Administering Office. Therefore, the Project Engineer should make it clear to the Contractor that the proposed final quantities are subject to change by an Iowa DOT audit.

Also as part of the semi-final voucher or pay estimate submittal, the Project Engineer shall provide the Contractor with a complete list of any missing documentation that will be required in order to receive final payment, as determined by the Project Engineer's Pre-audit.

If any quantities or price adjustments are in dispute, the Project Engineer and the Contractor shall negotiate a mutually acceptable resolution. If the parties are unable to reach an agreement, the Project Engineer or the Contractor may contact the Administering Office for assistance. If requested, the Administering Office will attempt to mediate an acceptable solution to both parties.

After the Project Engineer and the Contractor have reached agreement on the semi-final voucher or pay estimate, the Project Engineer shall approve the semi-final voucher or pay estimate and the Contractor should be paid in full, less any retainage withheld.

Final Audits

The Administering Office, at its discretion, may audit any construction contract. Some Administering Offices have elected to audit all contracts; others have elected to select contracts using a systems approach.

Using the systems approach, from among those contracts that are let for a given Federal fiscal year, the Administering Office will select at least one contract for each LPA. If the LPA only has one contract, that contract will be selected. If the LPA has more than one contract, the contract will be selected at random. If the audit of the selected contract does not reveal any significant problems, the Administering Office may waive the final audits for the LPA's other contracts let during that Federal fiscal year.

If a project is not selected for an audit, the Administering Office will simply review the Pre-audit Checklist for completeness, notify the Project Engineer that a final audit will not be conducted, and send a completed copy of the Pre-audit Checklist to the Project Engineer.

If a contract is selected for a final audit, the Administering Office will forward the materials review forms and associated documentation to the District Materials staff. The materials and construction audits will proceed as follows:

Materials Audit Process (highway and bridge projects only)

A materials audit will be performed for highway or bridge projects only. Materials audits will not be performed for non-highway projects, such as those funded by the Transportation Enhancement, Federal Recreational Trails, Scenic Byways, and Safe Routes to School programs.

After receipt of the materials review forms and associated documentation, the District Materials staff will perform a materials audit in accordance with procedures outlined in Materials I.M. 101 and 103. After their audit is complete, District Materials staff will notify the Project Engineer of any deficiencies in the materials testing, certification, or other required documentation and specify the corrective action that must be taken. If needed, the District Materials staff will provide a copy of this request to the Administering Office.

After the requested corrective actions have been taken and / or obtaining the requested documentation, the Project Engineer shall forward this information to the District Materials staff.

Construction Audit Process

The Administering Office staff will review the Pre-audit Checklist submitted by the Project Engineer. For selected items, the Administering Office will examine samples of the supporting documentation contained in the Project Engineer's files in order to verify that the item was completed as indicated on the Pre-audit Checklist. Those items for which supporting documentation was reviewed will be noted as such on the Pre-audit Checklist by the Administering Office staff. Any deficiencies identified by their review will be recorded on the *Audit of Final Pay Estimate* (Form 830301, available in Word or PDF). The Administering Office staff will provide a partially completed Form 830301 to the Project Engineer. If needed, the Administering Office staff will provide a copy of Form 830301 to the District Materials staff. The Administering Office staff will also sign and date the Pre-Audit Checklist, provide a copy to the Project Engineer, and retain the original for the Administering Office's file.

After the requested corrections have been completed, the Project Engineer shall indicate the date corrective actions were taken, and sign and date Form 830301. A copy of the completed form shall be returned to the Administering Office, along with any requested documentation, as part of the Final Forms Packet submittal (see Attachment F). The original Form 830301 shall be retained in the LPA's file.

Preparation of the Final Voucher or Pay Estimate

After the materials and construction audits are complete, or upon notice by the Administering Office that a final audit will not be conducted, the Project Engineer may begin preparing the final voucher or pay estimate. The final voucher or pay estimate shall incorporate the corrections to final quantities or price adjustments, if required by the final materials or construction audits.

Note: For counties using the Field Manager software on contracts paid through the CPS, any changes to quantities required by the final audits will require re-issuing a semi-final voucher before preparing a final voucher. This is because the final voucher is only used to release retainage; it cannot process changes in quantities.

The Project Engineer shall send the final voucher or pay estimate to the Contractor and request the Contractor's approval of the final quantities, including any price adjustments that may apply. If acceptable, the Contractor signs the final voucher or final pay estimate and returns it to the Project Engineer. The Contractor shall also submit to the Project Engineer all required paperwork for final payment, if not already provided. This submittal marks the beginning of a 30 day count, referred to as the Day Zero count, that is used to determine when interest may begin to accrue. For more information, refer to I.M. 3.930, Interest Payment Procedures. If all required paperwork is not provided, the Project Engineer shall promptly inform the Contractor which items are still needed and that final payment will not be processed until those items are received.

Submittal of Final Forms Packet

After the Contractor has signed the final voucher or pay estimate and provided all the required paperwork, the Project Engineer shall submit the Final Forms Packet to the Administering Office. The Final Forms Packet includes the final voucher or pay estimate and all other required documentation for final payment. Refer to Attachment F – Final Forms Packet Checklist, for a complete list of required forms and documentation.

Upon receipt of the Final Forms Packet, it is reviewed by the Administering Office to ensure all the applicable forms and documentation have been included. If any forms or documentation are missing, the Administering Office will promptly notify the Project Engineer and specify the items that are not complete. Once acceptable, the Administering Office routes the appropriate forms and documentation as needed. For contracts let under the Iowa DOT Specifications, the Iowa DOT documents approval for final payment by signing the *Final Payment* (Form 830436, available in Word or PDF). For contracts let under other specifications, the Iowa DOT documents approval for final payment by signing the bottom part of Form 640003.

Final Payment to the Contractor

After the Administering Office has approved the Final Forms Packet and signed the Form 830436 or 640003, final payment to the Contractor will be processed as follows:

For contracts that are paid by the LPA, the Administering Office notifies the Project Engineer that final payment may be processed and provides a copy of the signed Form 830436 or 640003 as appropriate. Upon receipt, the

LPA makes final payment to the Contractor in accordance with the approved final pay estimate, including release of all retainage that is due.

For contracts paid using the CPS, the Administering Office forwards Form 830436 and the Final Forms Packet to the Office of Finance. Upon receipt, the Office of Finance processes the final payment to the Contractor, including a release of all retainage that is due.

Final Federal Reimbursement

For contracts paid by the LPA, the LPA may request final Federal reimbursement of project costs after all payments have been made, including the construction contract and any other project costs for which Federal reimbursement will be requested. This request shall be made using the reimbursement claim form provided by the Administering Office, if applicable, and shall include copies of all warrants and pay estimates for which reimbursement has not yet been requested. The Administering Office will review the LPA's final Federal reimbursement request, and if acceptable, will forward to the Office of Finance for processing, along with the Final Forms Packet.

For contracts paid by the CPS, the Office of Finance will process the Federal reimbursement of participating contract costs. Federal funds so reimbursed will be deposited in the fund from which payments were originally made (e.g., the county's Farm-to-Market account for a Federal-aid project on the Farm-to-Market System). If there are any other Federal reimbursable project costs that were not paid through the CPS, the LPA shall request final reimbursement for these costs as described in the paragraph above.

Upon receipt of the final reimbursement request from the Administering Office, the Office of Finance will issue a warrant to the LPA for the final amount of Federal reimbursement that is due. If the final audits or reviews reveal that the LPA has been overpaid, the LPA shall reimburse the Iowa DOT accordingly.

Project Close-out and Records Retention

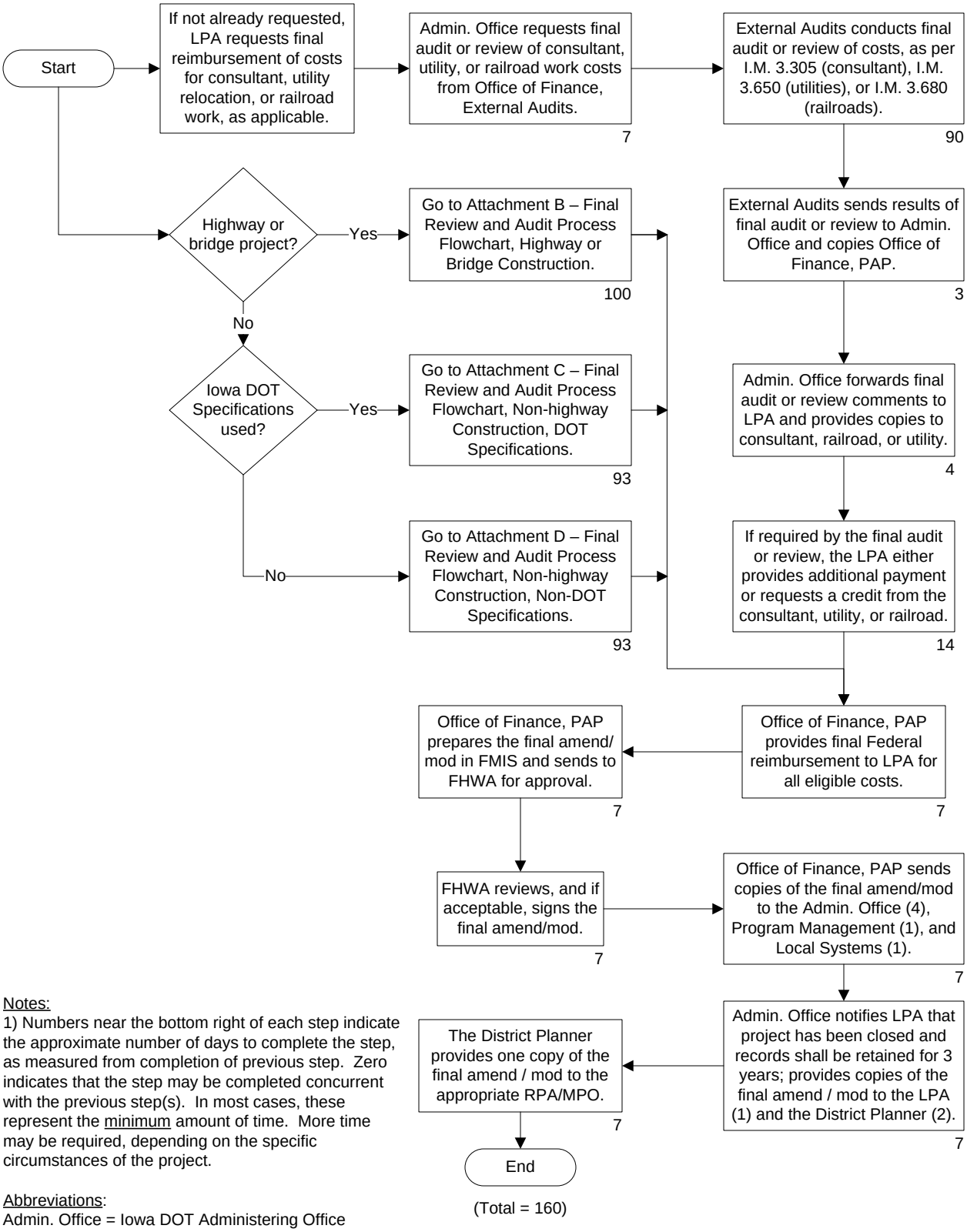
After processing the final Federal reimbursement to the LPA, the Office of Finance will prepare a final amendment / modification (amend / mod) to the project authorization in the Federal Highway Administration's Fiscal Management Information System (FMIS). The final amend / mod is sent to FHWA electronically for its review and approval.

Once approved by FHWA, the Office of Finance distributes copies of the final FMIS amend / mod document to the Administering Office (4), Program Management (1), and the Office of Local Systems (1). In turn, the Administering Office distributes copies to the LPA (1) and the District Planner (2). Finally, the District Planner forwards one copy to the appropriate Metropolitan Planning Organization (MPO) or Regional Planning Affiliation (RPA).

Upon receipt of the final amend / mod, the LPA shall retain its project records for not less than three years from the date of FHWA's signature on the final FMIS amend / mod document. These records shall be available for inspection by authorized Iowa DOT or FHWA personnel at any time during the retention period.

Project Close-out Process Overview Flowchart

For LPA Federal-aid Projects



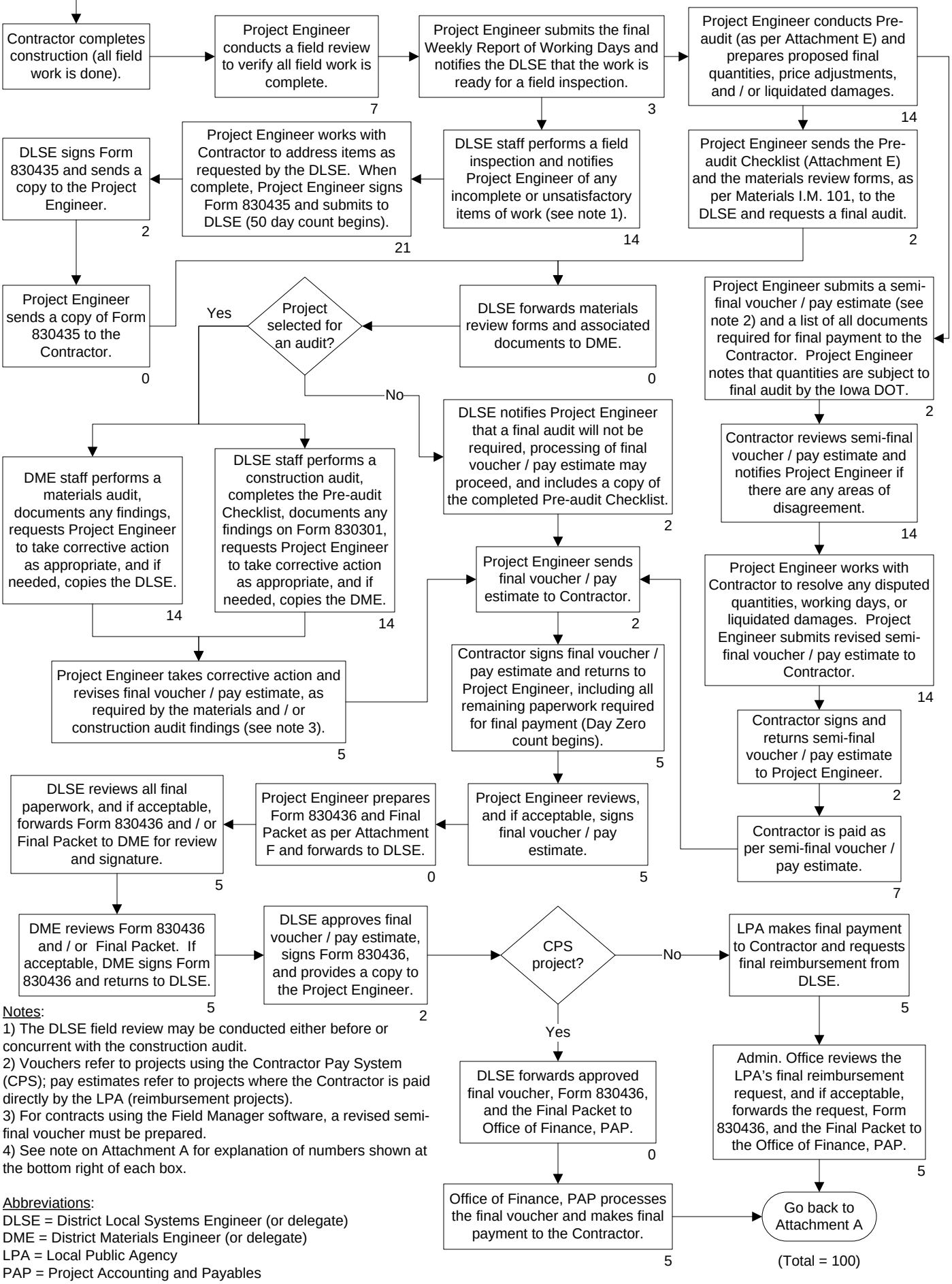
(Total = 160)

Notes:
1) Numbers near the bottom right of each step indicate the approximate number of days to complete the step, as measured from completion of previous step. Zero indicates that the step may be completed concurrent with the previous step(s). In most cases, these represent the minimum amount of time. More time may be required, depending on the specific circumstances of the project.

Abbreviations:
Admin. Office = Iowa DOT Administering Office
Amend / mod = amendment / modification to the project record in FMIS
FHWA = Federal Highway Administration
FMIS = FHWA's Fiscal Management Information System
LPA = Local Public Agency
MPO = Metropolitan Planning Organization
PAP = Project Accounting and Payables
RPA = Regional Planning Affiliation

Final Review and Audit Process Flowchart

Highway or Bridge Construction



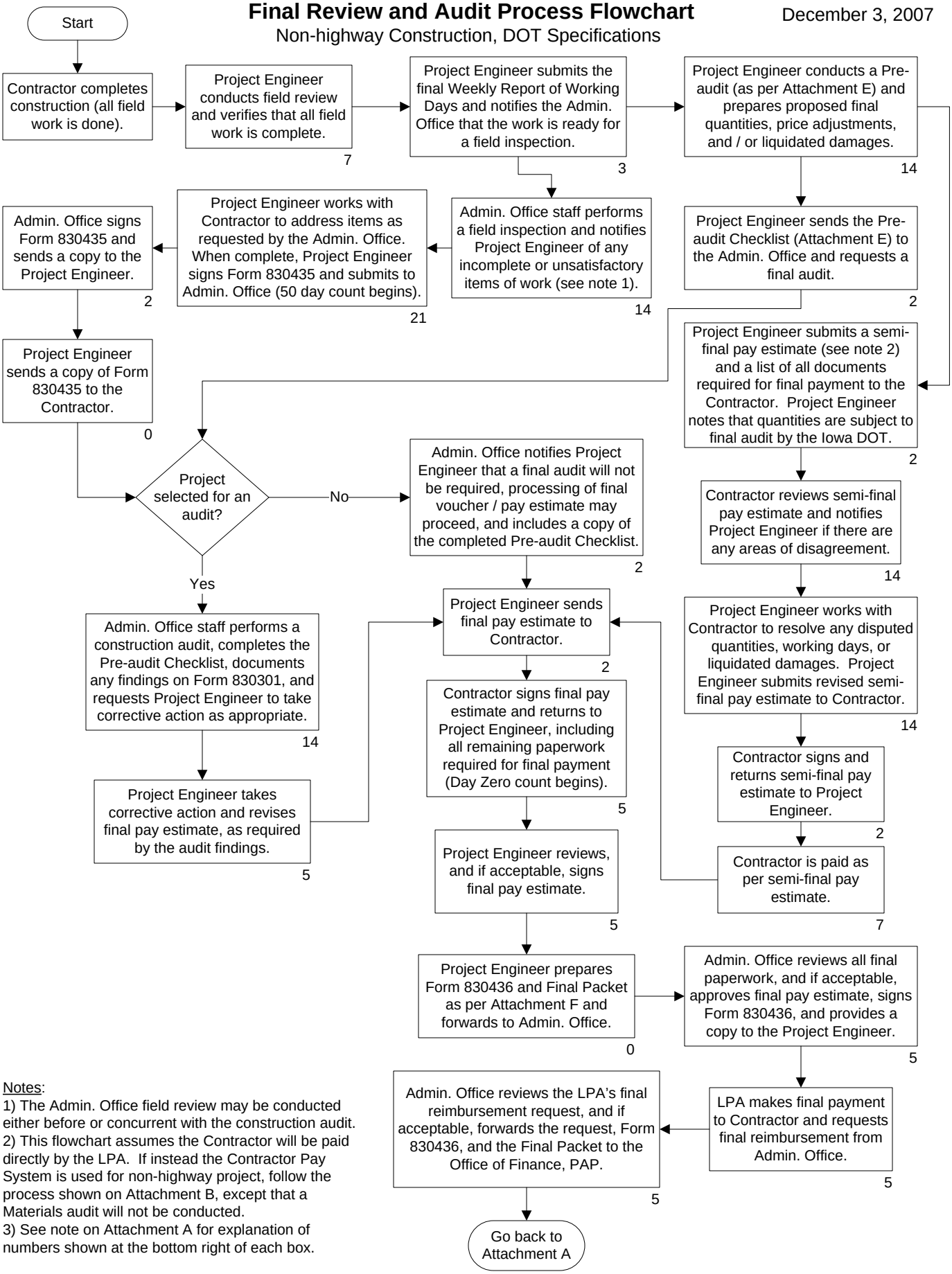
(Total = 100)

Notes:
1) The DLSE field review may be conducted either before or concurrent with the construction audit.
2) Vouchers refer to projects using the Contractor Pay System (CPS); pay estimates refer to projects where the Contractor is paid directly by the LPA (reimbursement projects).
3) For contracts using the Field Manager software, a revised semi-final voucher must be prepared.
4) See note on Attachment A for explanation of numbers shown at the bottom right of each box.

Abbreviations:
DLSE = District Local Systems Engineer (or delegate)
DME = District Materials Engineer (or delegate)
LPA = Local Public Agency
PAP = Project Accounting and Payables

Final Review and Audit Process Flowchart

Non-highway Construction, DOT Specifications



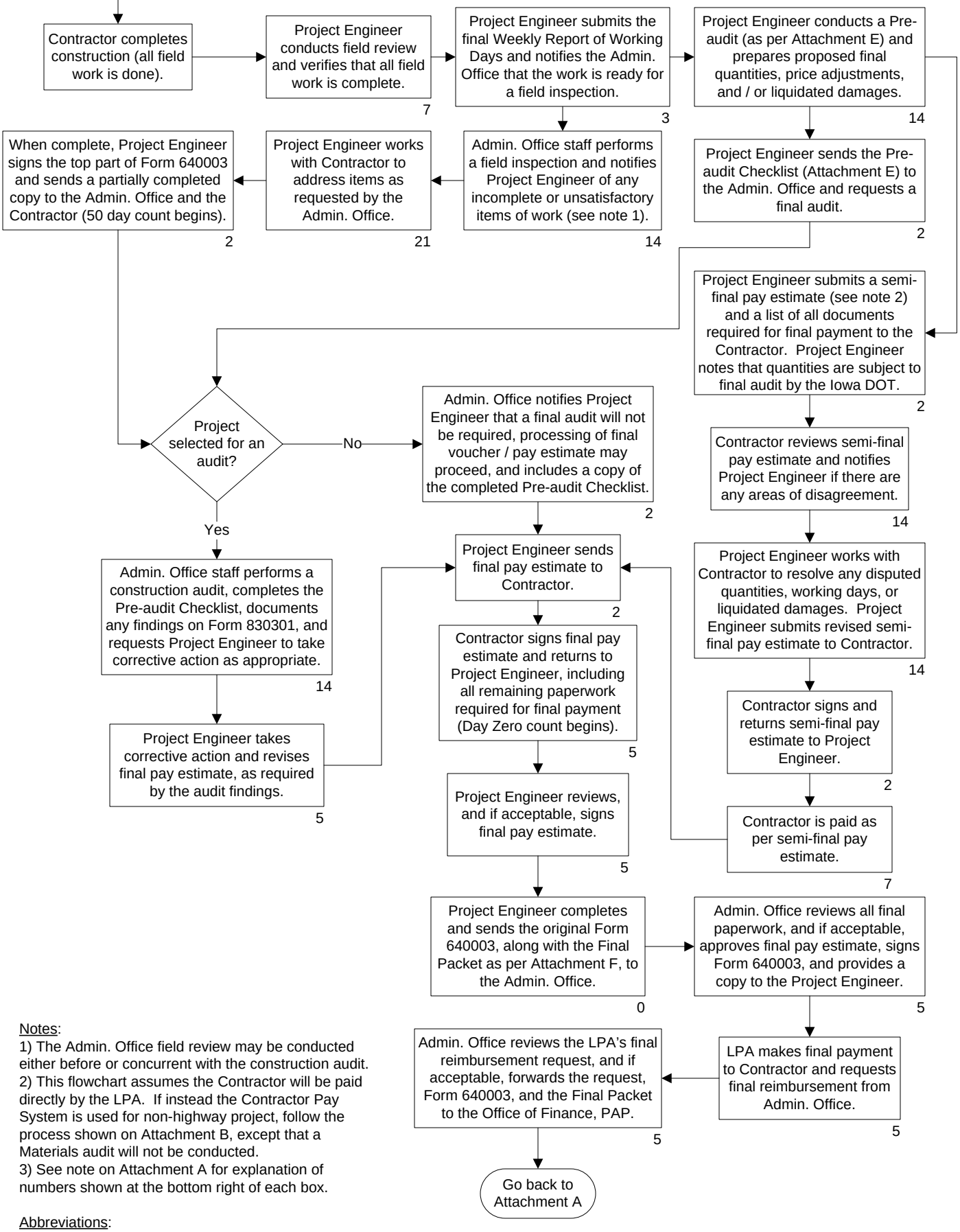
(Total = 93)

Notes:
1) The Admin. Office field review may be conducted either before or concurrent with the construction audit.
2) This flowchart assumes the Contractor will be paid directly by the LPA. If instead the Contractor Pay System is used for non-highway project, follow the process shown on Attachment B, except that a Materials audit will not be conducted.
3) See note on Attachment A for explanation of numbers shown at the bottom right of each box.

Abbreviations:
Admin. Office = Administering Office
LPA = Local Public Agency
PAP = Project Accounting and Payables

Final Review and Audit Process Flowchart

Non-highway Construction, Non-DOT Specifications



(Total = 93)

Notes:
1) The Admin. Office field review may be conducted either before or concurrent with the construction audit.
2) This flowchart assumes the Contractor will be paid directly by the LPA. If instead the Contractor Pay System is used for non-highway project, follow the process shown on Attachment B, except that a Materials audit will not be conducted.
3) See note on Attachment A for explanation of numbers shown at the bottom right of each box.

Abbreviations:
Admin. Office = Administering Office
LPA = Local Public Agency
PAP = Project Accounting and Payables

Pre-audit Checklist

Project Number: _____ Project Name / Location: _____
Contract Number: _____ Contracting Authority: _____
Accounting Number: _____ Prime Contractor: _____

Instructions: All of the applicable documents, steps, or reviews represented by this checklist should be complete and correct before requesting a final audit from the Iowa DOT Administering Office. Review and complete this checklist as indicated below, and as indicated by the instructions for each item:

- If the question(s) associated with an item can be answered "yes", and the project file contains documentation to support this answer, check the box.
- If the item does not apply, write "N/A" over the box.
- If any items need additional explanation, place a note adjacent to that item, add remarks in the "comments" section below, or attach additional documents as necessary.

For many of the checklist items below, references have been provided to the appropriate Iowa DOT form number, Iowa DOT Standard Specifications Section or Article number, Construction Manual (C.M.) section, Materials Instructional Memorandum (Materials I.M.s), or Instructional Memorandum to Local Public Agencies (I.M.). Such references are included in parenthesis immediately after the checklist item title. Consult these references for additional instructions and information.

The Iowa DOT Standard Specifications, Construction Manual, and the Materials I.M.s are all available on-line as part of the Iowa DOT's Electronic Reference Library. Most of the Iowa DOT forms referenced below are also available on the Iowa DOT Forms web page. Finally, some of the forms or documents included in this checklist are also discussed as part of I.M. 3.805, Construction Inspection.

Contract Documents

☐ **Bid Proposal** Does the project file include a copy of the bidding proposal and all attachments to the proposal?

☐ **Addendums** If any addendums were issued during the bid advertisement period, does the project file include copies of each addendum?

☐ **Contract** Does the project file include a copy of the fully executed construction contract?

☐ **Plans** Does the project file include a copy of the plans?

☐ **Plan Revisions** If the plans were revised after the contract award, are copies of such plan revisions, including transmittals to the contractor, included in the project file?

☐ **Specifications** Is a copy (electronic or paper) of the contract specifications (Iowa DOT Standard Specifications plus the applicable General Supplemental Specifications, or other specifications as applicable) located in the project file or in the Project Engineer's office?

☐ **Specification Modifications** If the contract was let using the Iowa DOT Standard Specifications, does the project file include copies of all applicable Special Provisions, Developmental Specifications, and Supplemental Specifications? If the contract was let using other specifications, does the project file include copies of all similar special provisions or modifications to those specifications?

Contract Administration and Inspection Documents

☐ **Detail Estimate and Final Highway Funding Sources** If the contract was let by the Iowa DOT, does the project file include a copy of these documents? These documents are prepared by the Iowa DOT Office of Finance after a contract is awarded by the LPA. Together, these document the awarded contract amount, including bid prices and quantities; the funding sources that will be used to pay for the contract costs, and if applicable, a breakdown of costs and funding by bid item categories.

- ☐ **Pre-construction Meeting Minutes** If a pre-construction meeting was held, does the project file include a copy of these notes, including a list of attendees?

- ☐ **Inspector's Daily Diary** Does the project file contain a copy of the project inspector's daily diary of construction operations, including the date and name or initials for each diary entry?

- ☐ **Property Used by Contractor** (C.M. 2.26) If the contractor requires the use of property, other than the existing right-of-way or easements provided by the Contracting Authority:

  - ☐ Does the project file contain copies of the contractor's agreements for purchase, lease, or temporary easements with the property owner(s)?

  - ☐ If the Contractor acquired the use of property for borrow or waste sites, does the file contain copies of the applicable environmental clearance documents obtained by the Contractor?

- ☐ **Traffic Control Documentation** (C.M. 5.40, Article 2528.01) If the contract required the contractor to provide or maintain temporary traffic control devices, does the project file include:

  - ☐ A copy of the contractor's Traffic Control Daily Diary?

  - ☐ Records to verify that the Contractor has a technician on staff that has attended and passed the exam in an American Traffic Safety Services Association (ATSSA) or International Municipal Signal Association (IMSA) Work Zone Traffic Control training class?

- ☐ **Noncompliance Notice** (Form 830245, C.M. 3.21) If any of the contract items, tests, or work activities were not in compliance with the contract documents, was the contractor issued a noncompliance notice for each, and does the project file include complete copies of this form?

- ☐ **DBE Commitment Report** (C.M. 2.25) If the contract was let by the Iowa DOT, does the project file include a completed copy of this report? This report is provided to the LPA by the Office of Contracts after the contract has been let. It shows a summary of the contractor's DBE commitments, including the proposed DBE subcontractors and the subcontract amounts.

- ☐ **Statement of DBE Commitments** (Form 517012, I.M. 3.720) If the contract was let by the LPA, does the project file include a completed copy of this form?

- ☐ **Subcontract Request and Approval** (Form 830231, C.M. 2.25, Article 1108.01) If the contractor used subcontractors, does the project file include a completed form for each subcontractor used? If any subcontractors were added after the contract award, were copies of these forms forwarded to the Iowa DOT?

- ☐ **Storm Water Permit** (I.M. 3.140) If the contract work required a National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 from the Iowa DNR, does the project file include completed copies of the following:

  - ☐ Iowa DNR's Notice to Proceed form and copies of the required two newspaper notices?

  - ☐ Storm Water Site Inspection Reports (Form 830214), for each week and after every 0.5" rainfall event?

  - ☐ If the seeding or other permanent ground cover has been established, the Iowa DNR's Notice of Discontinuation form? (If the site has not yet been stabilized, this form may be submitted later.)

- ☐ **Iowa DNR Notification of Completion of Construction** (DNR Form 37, I.M. 3.410) If the project required an Iowa Department of Natural Resources (Iowa DNR) Flood Plain Permit, was this form completed and sent to the Iowa DNR and does the project file include a copy of this form?

- ☐ **Weekly Report of Working Days** (Form 830238 or Form 830241, C.M. 2.33) Does the project file include these reports for each week that the contractor or subcontractors performed or should have performed work?

- ☐ **Notice of Suspension or Resumption of Work** (Form 810036, C.M. 3.06) If the contractor was directed to stop work by the Project Engineer at any time during the project, does the project file include a completed copy of this form?

- ☐ **Davis-Bacon Compliance** (C.M. 2.24) If the work was located on a Federal-aid route, does the project file contain the following:

  - ☐ Completed Wage Rate Reports (Form 650170) for all prime contractors and all subcontractors with contracts greater than $10,000 to document the wage rate interviews? The wage rate interviews should be completed at least once, and if the contract extends more than 6 months, approximately once every 6 months for the duration of the contract. Note: Wage rate interviews do not need to be completed for contractors or subcontractors that participate in the Association of General Contractors (AGC) Prevailing Wage Notification Program.

  - ☐ Copies of the Certified Transcript of Labor Payroll (Form 830176) that are:

    - ☐ Signed and dated by the contractor, for each week that the contractor or subcontractor(s) performed work?

    - ☐ Dated by the Project Engineer upon receipt?

    - ☐ Checked and initialed by the Project Engineer for compliance? (This is only required for the first few submitted; if no compliance problems are noted, subsequent submittals may not be checked.)

  Note: Federal-aid routes include all Federal Functional Classifications, except Local Roads and Rural Minor Collectors. This item also applies to contracts for construction of bicycle or pedestrian trails, if at least 50% of the trail is located within the right-of-way of a Federal-aid route. For contracts let by the Iowa DOT, applicability of the Davis-Bacon requirements is indicated on the bid proposal and contract.

- ☐ **Equal Employment Opportunity (EEO) Site Inspections** (Form 650170, C.M. 2.22) Does the project file contain completed copies of this form to document the EEO site inspections? These inspections shall be completed at least once, and if the contract extends more than 6 months, approximately once every 6 months for the duration of the contract. Note: If Davis-Bacon wage rates do not apply for the contract, only the top portion and sections 1 and 2 must be completed for each site inspection.

- ☐ **Log of Piling Driven** (if by formula, Form 830210, if by wave equation, Form 830209; C.M. 11.25, C.M. Appendix 11-22) If the contract included an item of work for driving piles, such as on a bridge project, does the project file include a completed copy of this form? This form should be completed as piles are driven and forwarded to the Administering Office.

- ☐ **Change Order** (Form 830240, C.M. 2.36) If the contract had any change orders, has the following been completed for each Change Order:

  - ☐ Recorded in the appropriate field book?

  - ☐ Marked either “Participating or Non-participating”?

  - ☐ Marked as either “Substantial” or “Non-substantial”?

  - ☐ Supported by attached documentation, if it involved a change in cost? Refer to the “Checklist for Change Orders” included in C.M. Section 2.36 for additional guidance related to supporting documentation. Note: Supporting documentation is not required for changes in cost based on existing contract prices, incentive / disincentive specifications, and liquidated damages.

  - ☐ If any work was performed on a force account basis, does the project file contain a Statement of Force Account with supporting documentation attached? (Form 181213, C.M. 2.35, Article 1109.03 B)

- ☐ **Materials Review** For all materials incorporated into projects let using the Iowa DOT Standard Specifications:

  - ☐ Have all materials been reviewed for compliance with the materials testing, sampling, and acceptance requirements of the Iowa DOT Standard Specifications and Materials I.M.s 101, 204, and 205?

  - ☐ Have the applicable materials review sheets been completed or reviewed by the Project Engineer? (Appendix B to Materials I.M. 101)

- ☐ Has a summary statement of non-compliant tests or measurements of material incorporated into the project been completed by the Project Engineer? (See Appendix 2-33 of Construction Manual for an example.)
- ☐ If the contract included HMA and / or PCC from a plant, does the project file include copies of the HMA and / or PCC Plant Reports?

☐ **As-built Plans** (C.M. 2.72) If the contract involves work on an Interstate or Primary Highway, has the Project Engineer prepared a set of as-built plans and forwarded a copy to the appropriate District Office?

☐ **Statement of Completion and Final Acceptance of Work** (Form 830435, C.M. 2.37) If the contract was let using Iowa DOT Specifications, is a copy of this form included in the project file, signed and dated by the Project Engineer?

☐ **Certificate of Completion and Final Acceptance of Agreement Work** (Form 640003, I.M. 3.720) If the contract was let using non-DOT specifications, is a copy of this form included in the project file, signed and dated by the Project Engineer?

Review of Quantities and Payments

☐ **Field Book(s)** Are the quantities for all items documented in a field book, loose leaf binder, or if recorded electronically, available as a computer print-out or report? Does the item quantity documentation include:

- ☐ Added bid items (8000 series) or modified bid items (7000 series)?
- ☐ Dates and initials of the person who calculated the quantity?
- ☐ Dates and initials of the person who checked the quantity?
- ☐ Locations specified where each quantity was placed?

☐ **Method of Measurement and Basis of Payment** Do all items have a method of measurement and basis of payment specified? This information is usually contained in the specifications (including any applicable Special Provisions, Developmental Specifications, Supplemental Specifications, etc.) but may also be located on the plans. Note: If the bid item number indicates the Standard Specification Section where this information can be found, the bid item number is a sufficient reference for this information.

☐ **Items Paid by Length** Do all items paid on the basis of length show the actual measured quantity, including the date and initials of the person that performed the measurement?

☐ **Items Paid by Count** Do all items paid on the basis of count (per each) show the actual count, including the date and initials of the person that performed the count?

☐ **Items Paid by Weight** (Article 2001.07) Do all items paid on the basis of weight include:

- ☐ Scale tickets that are certified by the producer?
- ☐ Scale tickets that are signed by the originator and the receiver?
- ☐ Ticket totals that are supported by adding machine tapes, computer print-outs, or other documentation?
- ☐ Dates when the material was placed?

☐ **Ready Mix Tickets** If ready mix concrete is used, are copies of all ready mix tickets meeting the requirements of C.M. 9.03 available in the project file?

☐ **Items Paid as Lump Sum** Do all items paid as a lump sum include the date the work was started, the date the work was completed, and initials of the person who verified the work was completed?

☐ **Items Paid by Volume** Do all items paid by volume include supporting calculations, such as original and final cross sections, or other methods that indicate how the volume was calculated?

- ☐ **Items Paid by Area** Do all items paid by area include supporting calculations, such as sketches with dimensions, or other methods that indicate how the area was calculated?

- ☐ **Items Paid by Plan / Contract Quantity** (C.M. 2.27, Article 1109.01) For each item paid for on the basis of plan / contract quantities:

  - ☐ Does each item show the starting and completion dates for the work?

  - ☐ If the item is not plan / contract quantity by specification, does the item have a completed and approved Contract Quantity Agreement (Form 830230)?

- ☐ **Price Adjustments** Have all appropriate price adjustments been documented by a completed Change Order (Form 830240), including those related to:

  - ☐ Non-compliance with the contract documents? (C.M. 2.53)

  - ☐ Incentive / disincentive specifications, including, but not limited to:

    - ☐ Pavement smoothness, if required by the contract documents? (C.M. 3.60)

    - ☐ PCC Pavement thickness? (C.M. 9.65, Materials I.M. 346)

    - ☐ HMA Pavement density? (Section 2303)

    - ☐ Early completion? (Section 1111)

  - ☐ Liquidated damages? (C.M. 2.34)

- ☐ **Progress Vouchers / Pay Estimates** Does the project file contain copies of all progress vouchers or pay estimates prepared by the Project Engineer and approved by the LPA?

- ☐ **Checks or Warrants** If the contractor is paid directly by the LPA, does the project file contain copies of all checks or warrants issued to the contractor to-date?

- ☐ **Proposed Semi-final Voucher / Pay Estimate** Does the project file contain a copy of the a semi-final voucher or pay estimate, including the final quantities and price adjustments proposed by the Project Engineer?

Project Engineer's Comments

Project Engineer's Certification: I have reviewed and verified each of the applicable items shown above. The supporting documentation associated with each applicable item is in the project file. The project file is organized and ready for Iowa DOT and / or FHWA inspection.

Printed Name: _____ Date: _____

Signature: _____

Iowa DOT Review: As the authorized representative of the Iowa DOT:

☐ I have reviewed this checklist and performed a final audit of this contract. For the Davis-Bacon Compliance and EEO Site Inspection items, and for all other items indicated by my initials above, I have reviewed a sample of the supporting documentation and found it to be in substantial conformance with the contract documents and / or project requirements, except as noted on the Audit of Final Pay Estimate (Form 830301).

☐ I have reviewed this checklist only. This contract was not selected for a final audit.

Printed Name: _____ Date: _____

Signature: _____ Initials: _____

Final Forms Packet Checklist

Project Number: _____ Project Name / Location: _____
Contract Number: _____ Contracting Authority: _____
Accounting Number: _____ Prime Contractor: _____

Instructions: Attach the following documents, as applicable, to this checklist and send with your request for approval of the final voucher or pay estimate to the Iowa DOT Administering Office. Check the box to indicate which documents are being submitted. If the document doesn't apply, write "N/A" over the box. Include the original and / or number of copies, as indicated for each item. If any of the items are not complete or correct, the final voucher or pay estimate will not be processed until all applicable documents are provided. Keep a copy of this completed checklist, including all attached documents, in the project file.

For many of the checklist items below, references have been provided to the appropriate Iowa DOT form number, Standard Specification Article number, Construction Manual (C.M.) section, Materials Instructional Memorandum (Materials I.M.s), or Instructional Memorandum to Local Public Agencies (I.M.). Such references are included in parenthesis immediately after the checklist item title. Consult these references for additional instructions and information.

The Iowa DOT Standard Specifications, Construction Manual, and the Materials I.M.s are all available on-line as part of the Iowa DOT's Electronic Reference Library. Most of the Iowa DOT forms referenced below are also available on the Iowa DOT Forms web page. Finally, many of the forms or documents included in this checklist are also discussed as part of I.M. 3.805, Construction Inspection.

Document	Number	
	Original	Copies
Include for all contracts paid directly by the LPA:		
☐ **Final Pay Estimate** (Form 181235 or acceptable substitute) Include if the contractor was paid directly by the LPA. The final pay estimate reflects the final quantities and price adjustments, as corrected by the Iowa DOT final audits (if applicable), and has been signed by the Contractor and the Project Engineer.	1	
Include for all contacts paid by the Iowa DOT using the Contractor Pay System (CPS):		
☐ **Final Contract Construction Progress Voucher** (Form 181013, C.M. 2.37) The final voucher includes all change orders, reflects the final quantities and price adjustments, as corrected by the Iowa DOT final audits (if applicable), and has been signed by the Project Engineer and the contractor. Note: If the Field Manager software is used, the computer generated final voucher may be used instead of Form 181013.	1	
For all contracts that apply:		
☐ **Category Descriptions** Include if the contract uses more than one category. Categories are used to separate bid items that are paid for by different fund types or different public agencies. The applicable categories are identified on the "Final Detail Estimate" prepared by the Iowa DOT Office of finance and distributed by the Administering office after the contract award.		1
☐ **Certification of DBE Accomplishments** (Form 102116, C.M. 2.25) Include if the contract was let by the Iowa DOT, even if no DBE firms were used. If no DBE firms were used, the Project Engineer shall complete the applicable portions of the form.	1	
☐ **Certification of DBE Accomplishments** (Form 517013, I.M. 3.720) Include if the contract was let by the LPA, even if no DBE firms were used. If no DBE firms were used, the Project Engineer shall complete the applicable portions of the form.	1	
☐ **Certification of Subcontractor Payments** (Form 518002) Include if the contractor utilized any subcontractors.	1	
☐ **Contractor Evaluations** (Form 830430, C.M. 2.38) Include for all prime contractors and any subcontractors with subcontract amounts of $20,000 or more. At the Project Engineer's option, these may be included for subcontracts of lesser value.	1	

Document	Number	
	Original	Copies
☐ **Statement of Salvaged Materials** (C.M. 3.05, Appendix 3-1) Include if the contract involved work on a Primary Highway and some materials were salvaged and delivered to an Iowa DOT Maintenance facility.		1
☐ **Interest Payment Information** (Form 830236, I.M. 3.930) Include for all contracts.		1
☐ **Change Order** (Form 830240, C.M. 2.36) Include all additional change orders that may have been processed since submitting the Pre-Audit Checklist, if any.	1	
☐ **Audit of Final Pay Estimate** (Form 830301) Include if the contract was audited by the Iowa DOT. The form identifies the date corrective actions were taken and is signed and dated by the Project Engineer.	1	
☐ **Final Payment** (Form 830436, C.M. 2.37) Include if the contract used the Iowa DOT Standard Specifications.	1	
☐ **Non-compliance Statements** (C.M. 2.37) If any non-compliances were issued, include the associated statements and supporting documentation.	1	

Project Engineer's Certification: I have reviewed and / or approved each of the applicable items shown above and have approved the final voucher or pay estimate. The applicable documents, including supporting documentation as required, are attached.

Printed Name: _____ Date: _____

Signature: _____

INSTRUCTIONAL MEMORANDUMS
To Local Public Agencies

Iowa Department of Transportation

To:	Counties and Cities	Date: December 3, 2007
From:	Office of Local Systems	I.M. No. 3.930
Subject:	Interest Payment Procedures	

Contents: This Instructional Memorandum (I.M.) describes the procedures for a Local Public Agency (LPA) to comply with the interest payment requirements associated with construction contracts. This I.M. includes the following attachments:

Attachment A – Sample Interest Payment Information Form

Note: The procedures outlined in this I.M. are required only for Federal-aid contracts; however, the interest payment requirements of section 573.14 of the Code of Iowa apply to all public agency contracts, regardless of the funding source. Therefore, the Iowa Department of Transportation (Iowa DOT) recommends that LPAs follow a similar procedure for non-Federal-aid contracts; however, no submittals to the Iowa DOT are required for such contracts. If interest is due for non-Federal-aid contracts, the LPA may contact the Iowa DOT Office of Finance, Project Accounting and Payables at 515-239-1703 to obtain the appropriate interest rate.

Introduction

Section 573.14 of the Code of Iowa requires that interest be paid on retained funds under certain conditions. For contracts let by the Iowa DOT, these conditions are specified in Article 1109.09 of the Iowa DOT Standard Specifications (available on-line as part of the Iowa DOT's Electronic Reference Library). For Federal-aid contracts that are let locally, these conditions are specified in the Proposal Notice for Locally Procured Federal-aid Contracts (for more information, see I.M. 3.720, Local Lettings – Federal-aid).

Preparing the Interest Payment Information

The information required to determine if interest will be due shall be documented on the *Interest Payment Information* (Form 830236, available in Word or PDF). A sample form is provided as Attachment A to this I.M. The Project Engineer shall complete Form 830236 according to the instructions provided below:

Project Number, Project Name / Location, Accounting I.D., and Contractor: Complete these fields as appropriate for the contract being submitted.

Final Acceptance Date (FAD): For projects let using the Iowa DOT Standard Specifications, this date is when the LPA's Project Engineer signs the *Statement of Completion and Final Acceptance of Work* (Form 830435, available in Word or PDF). For projects that are let using other specifications, this date is when the LPA's Project Engineer signs the top portion of the *Certificate of Completion and Final Acceptance of Agreement Work* (Form 640003, available in Word or PDF).

Day Zero: This is the date the LPA's Project Engineer receives the final paperwork from the Contractor. The final paper work includes all forms, certifications, Change Orders, or other documentation required by the contract documents for final payment. The Day Zero date cannot occur before the FAD. If the Contractor provides all the final paperwork before the FAD, Day Zero Date will be equal to the FAD.

Suspension Periods in Day Zero Count: Enter each suspension period in the Day Zero count that applies, including the beginning and ending dates of the suspension period and the reason(s) for the suspension. The Day Zero count starts the day following Day Zero and stops as of the date shown on the final payment warrant. After the Day Zero count has started, it may be suspended in the following situations:

1. If at any time after the Contractor submits the final paperwork it is determined, either by the Project Engineer or the Iowa DOT, that any of the required final paperwork is missing. In such cases, the Project Engineer shall notify the Contractor in writing and specify the documentation that must be submitted. The Day Zero count will be suspended as of the date of the Project Engineer's notice to the Contractor and shall be resumed on the date the requested documentation is received by the Project Engineer.

2. If the Project Engineer has not received a signed final voucher or final pay estimate from the Contractor by FAD + 50, the Day Zero count will be suspended on the following day (FAD + 51). It will resume on the date the signed final voucher or pay estimate is received by the Project Engineer.

3. If after receipt of the final paperwork from the Contractor, the Project Engineer initiates a Change Order. In such cases, if the Change Order is not signed and returned to the Project Engineer by within 10 days after it was sent to the Contractor, the Day Zero count will be suspended on the 11th day and resume when the signed Change Order is received by the Project Engineer.

Total Suspension Periods in Day Zero Count: Enter the total number of days the Day Zero count was suspended, as indicated above. If there were no suspensions, enter "None" in the space provided.

If final payment is dated after: Enter the date which is 50 calendar days after the FAD.

Interest will start to accrue on: Beginning with Day Zero, add 31 calendar days, then add the total number of suspension days in the Day Zero Count, if any, and enter this date.

To illustrate how the various dates and suspension periods affect the interest period calculation, consider the following examples:

Example 1:

FAD = Jul 10, 2007
FAD + 50 = Aug 29, 2007
Day Zero = Jul 20, 2007
Day Zero + 31 = Aug 20, 2007
Total Day Zero Count Suspensions = 0 days
Date of Final Warrant = Sep 22, 2007

Result: The final warrant is dated after Aug 29, 2007 (FAD + 50) so interest will be paid for a period of 34 days, beginning Aug 20, 2007 (Day Zero + 31 + 0) and ending Sep 22, 2007 (date of final warrant).

Example 2:

FAD = Jul 10, 2007
FAD + 50 = Aug 29, 2007
Day Zero = Sep 10, 2007
Day Zero + 31 = Oct 11, 2007
Total Day Zero Count Suspensions = 0 days
Date of Final Warrant = Oct 5, 2007

Result: The final warrant is dated after Aug 29, 2007 (FAD + 50), but is before Oct 11, 2007 (Day Zero + 31 + 0), so no interest is due.

Example 3: (as shown on the sample form included as Attachment A)

FAD = Jul 10, 2007
FAD + 50 = Aug 29, 2007
Day Zero = Sep 10, 2007
Day Zero + 31 = Oct 11, 2007
Total Day Zero Count Suspensions = 20 days
Date of Final Warrant = Oct 15, 2007

Result: The final warrant is dated after Aug 29, 2007 (FAD + 50) but is before Oct 31, 2007 (Day Zero + 31 + 20), so no interest is due.

Submittal and Review of Interest Payment Information

After completing Form 830236, the Project Engineer shall submit it to the Iowa DOT Administering Office with the final voucher or pay estimate, along with the other paperwork required for Iowa DOT approval of final payment. Upon receipt, the Administering Office will review Form 830236 for completeness. If any of the information is incorrect or incomplete, the Administering Office will contact the Project Engineer. The Project Engineer shall revise and resubmit the form as required.

Payment of Interest

If the date of the final warrant to the Contractor is 50 calendar days or less from the Final Acceptance Date, no interest will be paid. If it is more than 50 calendar days, interest will begin to accrue as of the date indicated on Form 830236. If interest is due, it will be paid according to one of the following procedures:

1. For contracts paid using the Contractor Pay System (CPS): The Iowa DOT Office of Finance will calculate the appropriate amount of interest to be paid, if any. If the amount is over $25, the Office of Finance will issue a warrant to the Contractor for that amount. An interest payment voucher will not be prepared or sent to the LPA for review and approval. Payment will be made from the same account from which the earlier contract payments were made.

2. For contracts paid directly by the LPA: If Form 830236 indicates that interest is due, the LPA shall calculate the amount of interest to be paid using the interest rate as established by Code of Iowa section 12C.6. The LPA may contact the Iowa DOT Office of Finance, Project Accounting and Payables at 515-239-1703 to obtain the current interest rate, as established by this Code section. After calculating the appropriate interest payment, the LPA shall make payment to the Contractor accordingly.

Note: Regardless of which method is used to make the interest payment to the Contractor, such payments are not eligible for reimbursement with Federal funds.

Retention Release

The process for reviewing the final paperwork can be lengthy. Therefore, to reduce the chance that interest will be due to the Contractor, the Project Engineer should submit the final paper work to the Administering Office on or before FAD + 29. Submittal of the final paperwork on or before this date will usually allow enough time for the Iowa DOT to review and approve the final voucher and make final payment to the Contractor for contracts paid using the CPS; or for contracts paid directly by the LPA, for the Iowa DOT to review and approve the final pay estimate and notify the LPA that final payment to the Contractor can be made.

If at any time it appears that submittal of the final paperwork cannot be made on or before FAD + 29, the Project Engineer should consider preparing a Retention Release Voucher for CPS contracts; or for contracts paid directly by the LPA, pay the retainage due, less an amount double any claims on file. This will reduce or eliminate the amount retained and thereby reduce the amount of interest that may be due.

Iowa Department of Transportation

Form 830236 (11-07)

INTEREST PAYMENT INFORMATION

For County and City Projects

Note: For instructions, refer to Instructional Memorandum (I.M.) 3.930, Interest Payment Procedures.

Project Number STP-U-1945(602)--70-77

Project Name / Location 2nd Street Improvements from Walnut to Main Street.

Accounting ID 77-70-1945-602

Contractor XYZ Construction, Inc.

Final Acceptance Date (FAD): Jul 10, 2007

Day Zero Date: Sep 10, 2007

Suspension Periods in the Day Zero Count: (If there are no suspensions, write "None.")

After the contractor's submittal of the final voucher, it was determined that the material certifications for the PCC pavement tie-bars were missing. The Project Engineer's notice to the contractor was dated Sep 15, 2007. The contractor provided the requested certifications on Oct 5, 2007.

Total Suspension Periods in Day Zero Count (days): 20 (if none, enter zero)

If final payment is dated after Aug 29, 2007 (FAD + 50)

Interest will start to accrue on Oct 31, 2007 (Day Zero + 31 + Total Suspension Days)

SAMPLE