

INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties and Cities	Date: February 10, 2023
From: Local Systems Bureau	I.M. No. 1.100
Subject: Highway Bridge Programs for Cities and Counties	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for the Local Public Agency (LPA) Federal-aid Swap and State bridge programs for highways. This I.M. also includes the following attachments:

- [Attachment A](#) – City Bridge Priority Point Rating Worksheet ([Word](#))
- [Attachment B](#) – County Bridge Priority Point Rating Worksheet ([Word](#))
- [Attachment C](#) – Touchdown Points and Limits of Participation
- [Attachment D](#) – County HBP Fiscal Constraint Requirements

GENERAL

Cities and counties in Iowa are provided dedicated funding for bridges through Federal-aid and State programs. The purpose of these programs is to reduce the number of “Poor” bridges (formerly known as Structurally Deficient (SD) and Functionally Obsolete (FO) bridges) on the local jurisdiction roadway systems. These bridge programs are administered by the Iowa Department of Transportation (Iowa DOT) Local Systems Bureau in accordance with [761 Iowa Administrative Code \(IAC\), Chapter 161](#). Likewise, the State programs are administered in accordance with [761 IAC, Chapter 160](#). In both cases, these programs are developed and administered in consultation with city and county officials through their representative organizations. Cities are represented by the Iowa Chapter of the American Public Works Association (APWA). The counties are represented by the Iowa County Engineers Association (ICEA). This I.M. documents the results of that consultation by describing each program in detail and providing additional guidance concerning eligible bridges and eligible project costs.

DEFINITIONS

A bridge, for purposes of this I.M., is considered to be a bridge if it is recognized by the [National Bridge Inspection Standards \(NBIS\)](#). The NBIS regulations apply to all publicly owned highway bridges longer than 20 feet located on public roads.

Off-system bridges - An off-system bridge is defined by the Federal Functional Classification system as a bridge located on a rural minor collector or a local roadway. Federal Functional Classification Maps can be found [here](#).

On-system bridges - An on-system bridge is defined by the Federal Functional Classification system as a bridge located on a rural major collector route, urban collector, or higher classification. Federal Functional Classification Maps can be found [here](#).

FEDERAL-AID HIGHWAY BRIDGE PROGRAM

The Infrastructure Investment and Jobs Act (IIJA) added the Bridge Formula Program (BFP), which sets aside funding for bridge replacement, rehabilitation, preservation, protection, and construction projects. Additionally, Congress has occasionally apportioned bridge funding through the Highway Infrastructure Program for Bridge Replacement and Rehabilitation. These funds will continue to be referred to in this I.M. as Highway Bridge Program (HBP) funds and are exclusively for city and county bridges. The amount of HBP funds set aside and the distribution of these funds between cities and counties is calculated by the Iowa DOT Local Systems Bureau, as detailed in the [HBP Fund Allocation Method](#). This method is periodically reviewed by the ICEA and APWA and revised, typically after the passage of a new multi-year Federal transportation act. The portions of HBP funds allocated for cities and counties are administered differently, as outlined below.

Cities

Cities may request to add a bridge to the City Bridge Candidate List at any time, but the deadline for the next Federal Fiscal Year’s funding is October 1. Such requests shall be submitted in writing on city letterhead, or via email with a city official’s signature block, to the Iowa DOT Local Systems Bureau and shall include the

below information. The letter shall either be emailed by 11:59 P.M. on October 1 or mailed and postmarked on or before October 1, to the Iowa DOT Local Systems Bureau's Urban Engineer. Refer to the Iowa DOT [Local Systems website](#) for contact information. Any highway bridge within the corporate limits, whether in whole or in part, may be submitted for consideration. This includes bridges on Farm-to-Market extensions within the city limits of cities less than 500 population. The City Bridge Candidate list, including the priority points, is available on the Local Systems Bureau [website](#). The following items must be included in the submittal to the Iowa DOT Local Systems Bureau:

- Federal Highway Administration (FHWA) bridge number
- route carried
- feature crossed
- most recent replacement cost estimate available
- contact information for the city official
- confirmation that the bridge, either whole or in part, is within the corporate city limits

During the month of November each year, the Local Systems Bureau selects bridges from the Proposed City Bridge Candidate List based on their ranking and available funding. Candidates are ranked in descending order according to their priority points (see [Attachment A](#) to this I.M.). Cities are limited to one bridge per city per fiscal year. The total HBP limit per bridge is set at \$1,500,000, and funding is available for construction only.

Priority points will be calculated using the data shown on the SI&A form, as of the October 1 deadline each year. If the data on the SI&A form does not reflect the most recent inspection, the priority points will not correctly reflect the status of a bridge when the Iowa DOT's Proposed City Bridge Candidate List computer program is run.

Each city with a selected bridge is sent a letter offering Federal-aid or State bridge funding (See STATE BRIDGE PROGRAMS - City Bridge Construction Fund section below) for the next Federal Fiscal Year. State funds are typically offered to only one or two small bridges per year. The city then decides if they have adequate funds to proceed and sends a letter or email back to the Urban Engineer accepting or rejecting the funding. If accepted, the city provides an updated cost estimate and information on who will administer the project. The Local Systems Bureau will then prepare the appropriate agreement for the project, which is distributed by the Local Systems Urban Engineer. This agreement will indicate if the project will receive Federal-aid or State funding, as determined by the Local Systems Bureau. The city must sign and return the agreement to the Urban Engineer within 90 days of receipt. If a city does not return an agreement within 90 days, the Local Systems Bureau will treat the offer as declined by the city.

After the agreement is approved, the city may begin project development. Project development activities shall be carried out as outlined in the associated I.M.s.

Projects must meet all the requirements listed in the agreement and be let at the Iowa DOT within 3 years of signing the agreement. If requested by the city, a 6-month extension may be granted by the Local Systems Bureau.

City HBP Funds are awarded in anticipation of receiving Federal-aid STBG Program and BFP funds for the next Federal Fiscal Year, which begins on October 1. These funds are not available until the corresponding Federal appropriation bill is passed. While this generally occurs in advance of the Federal Fiscal Year, delays have and may continue to occur.

Counties

The Local Systems Bureau does not select county bridges for County HBP funding. Instead, county bridge projects are selected by the County Engineer in cooperation with the County Board of Supervisors. County HBP funds are allocated to each county according to the following formula:

1. One-third (33 percent) on the county Road Use Tax (RUT) fund distribution, weighted 32 percent on the Farm-to-Market Factor and 68 percent on the Secondary Road Factor, as calculated by the Iowa County Engineers Service Bureau.

2. Two-thirds (67 percent) on a qualifying deficient bridge factor. This factor is the percent of square footage of Poor bridges with ADTs greater than or equal to 25 within each county, as compared to the total square footage of all county bridges with those same parameters.

After receiving the notification of the County HBP funds available, the Local Systems Bureau will notify the counties of their allocations based on the latest factors. Counties then select their own bridges for programming and development. Any eligible bridge may be programmed, provided the counties' HBP program as a whole is fiscally constrained in the Statewide Transportation Improvement Program (STIP). For additional information regarding the fiscal constraint requirements and procedures, see [Attachment D](#) to this I.M.

Beginning with the May 2021 letting, no county will be allowed to accumulate more than 4 years of HBP funds. In December of each year, the years of funds accumulated is calculated by taking an average of the last 4 years' allocations and dividing that into the current balance of unobligated HBP funds. Projects let in the Iowa DOT's December letting or before, will be considered as obligated for purposes of this calculation. Counties with more than 4 years of accumulated funds after the December letting will have the amount that exceeds 4 years accumulated funds redistributed to those counties with less than 4 years accumulated funds.

Counties may also borrow ahead up to 4.5 years' worth of funds, essentially exceeding their accumulated annual HBP allocations by 4.5 years. This is provided that HBP funds statewide are available and the total project cost does not exceed their anticipated 4.5 year borrow ahead allowance in the current year. Since Counties may "borrow ahead" in this manner, saving up for a large project generally may not be used to obtain a waiver from the 4-year accumulated funds limit, except for extenuating circumstances of very large bridges; this shall be asked for in advance of receiving notification that the funds were to be reallocated.

The allocation system described above is designed to maximize utilization of all the available County HBP funds but does not guarantee that a county will be able to let an HBP funded bridge project each and every year or be able to utilize its entire allocation.

Project development activities shall be carried out as outlined in the I.M.s. All County HBP projects must be let by the Iowa DOT. After the bid letting, the county makes initial project payments either from their Farm-to-Market or Secondary Road funds, depending on whether the bridge is located on the Farm-to-Market system or the Area Service (local) system. Reimbursement to the appropriate fund will occur after the payment has been made.

STATE BRIDGE PROGRAMS

City Bridge Construction Fund

[Iowa Code Section 312.2](#), 12.b provides \$500,000 annually off-the-top from the Road Use Tax Fund to the city bridge construction fund for the reconstruction or replacement of highway bridges within or touching a city's corporate limits, regardless of who owns the bridge. This includes bridges on Farm-to-Market extensions within the city limits of cities less than 500 population. State participation in qualifying projects will be 100 percent of the eligible construction costs, up to the limit specified in the project funding agreement. Some previous agreements may not allow 100 percent of eligible construction costs, and those previous agreements will govern.

The City Bridge Construction funds are allocated to cities in the same manner as the City HBP funds described above.

Project development must comply with State law and the agreement provisions. Projects involving only City Bridge Construction Funds or other non-Federal-aid funds may be let locally by the city.

County Bridge Construction Fund (CBCF)

[Iowa Code Section 312.2](#), 12.a provides \$2 million annually off-the-top from the Road Use Tax Fund to the county bridge construction fund for the construction, reconstruction, or replacement of highway bridges on the Secondary Road System. State participation in qualifying projects will be 80 percent of the eligible costs, up to a maximum of \$2 million per project.

During the month of November each year, the Iowa DOT Local Systems Bureau requests one candidate from each county for County Bridge Construction Funds (CBCF). To assist counties in selecting candidates for funding, the Local Systems Bureau prepares a current listing of each county's bridges along with an approximation of priority points, based on the latest information in [Structural Inventory and Inspection Management System](#) (SIIMS) and calculated in accordance with County Bridge Priority Point Rating factors (see [Attachment B](#) to this I.M.). A list of all county bridges including their priority points is available on the Local Systems Bureau [website](#).

One of the factors included in the priority point calculations is the detour length. The detour length to be used is the out-of-distance travel. See [Attachment B](#) to this I.M. for those instructions. This detour length is frequently different than the detour length shown in SIIMS.

Another one of the factors included in the scoring of the CBCF applications is estimated cost. The whole cost of the project within the limits of the touchdown points shall be used for purposes of applying for this funding.

Candidates are ranked in descending order according to their priority points. Projects are selected from the listing until the available funds are obligated. The successful county candidates are notified of funding in January.

Project development must comply with State law and the agreement provisions. Projects involving only County Bridge Construction Funds or other non-Federal-aid funds may be let locally by the county; however, if the match funding being utilized is Federal-aid HBP funding, Federal-aid Swap HBP funding, or Farm-to-Market funding, the projects shall be let at the Iowa DOT.

ELIGIBLE BRIDGES

In general, to be eligible for either HBP or State bridge funding, a bridge must be classified as "Poor" and have an Average Daily Traffic (ADT), as determined by the Iowa DOT, greater than or equal to 25. Each of these criteria are explained in more detail below, as are city specific requirements, and an additional county specific resource.

"Poor" Bridge Classification

For a bridge to be classified as Poor, one of the following conditions must be met on the Structural Inventory and Appraisal (SI&A) form:

A condition rating of 4 or less for:

- Item 58 - Deck; or
- Item 59 - Superstructures; or
- Item 60 - Substructures; or
- Item 62 - Culvert and Retaining Walls.¹

¹ Item 62 applies only if the last two digits of Item 43 are coded 07 or 19.

Average Daily Traffic (ADT)

The current Average Daily Traffic (ADT) must be greater than or equal to 25 vehicles per day (vpd), as determined by the Iowa DOT. If the LPA disagrees with the Iowa DOT's ADT, Item 29 on the SI&A, the LPA may request an update, provided new count data is submitted and the data collection methods are verified by the Iowa DOT, Systems Planning Bureau. The Iowa DOT loans traffic counting equipment to local agencies on an as-available basis. For equipment availability and other questions, please contact the Systems Planning Bureau at 515-239-1323.

If there is evidence that the deteriorating condition of the bridge caused the low ADT, the LPA may submit a request for consideration to waive this requirement to the Local Systems Bureau. The most effective documentation are old traffic counts that show higher volumes when the bridge was in better condition. However, if old traffic counts are not available, other factors may be considered, such as progressively more restrictive load postings over an extended period of time.

City HBP and City Bridge Construction Fund Additional Requirement

As noted above, to be considered for the City HBP and/or State City Bridge Construction Fund, the bridge shall be within the city corporate limit, whether in whole or in part. This includes bridges on Farm-to-Market extensions within the city limits of cities less than 500 population.

The Urban Engineer will determine eligibility upon receiving requests to be added to the City Bridge Candidate List based upon the requirements listed in this guidance.

County HBP Resources

The Qualifying Bridge List (QBL) is prepared in the summer of each calendar year. Bridges on the QBL meet the HBP requirements for being classified as Poor and having an ADT of 25 or greater. An "Error" will be shown in TPMS Project Development if a bridge is not on the QBL.

The County **QBL spreadsheet** is also published on the Local Systems Bureau "[County Reports, Funding, & Resources](#)" webpage and also the "[Bridge Information & Resources](#)" webpage. This spreadsheet shows the county structures which meet the definition of Poor and includes ADTs of 25 or greater. (The user may turn off the ADT filter to view bridges with an ADT of less than 25.) The Iowa DOT Local Systems Bureau assembles this listing by filtering the official National Bridge Inventory (NBI) listing by owner code and by the aforementioned Poor and ADT criteria. Bridges that were listed in the County Five Year Program in 2021, that no longer qualify due to the change from SD/FO to Poor bridges, will still be allowed to be replaced utilizing these funding programs. However, this shall not include bridges that were programmed in 2025 and move to subsequent years beyond 2025. City owned bridges are not included in the county QBL list.

The QBL is based on information that may be over one year old; therefore, it is possible that an eligible bridge may not be included on the list. If an LPA wishes to use HBP funds for a bridge not on the QBL, a written request must be submitted to the Local Systems Secondary Roads Engineer. Updated SI&A information and any other documentation needed to justify the request must be attached or uploaded to the Iowa DOT's SIIMS. The Secondary Roads Engineer will review the request and will notify the LPA and the Local Systems Project Development Engineer/Technician (LSPDE/LSPDT) of the decision. This request must be reviewed and approved by the Local Systems Bureau before any HBP funds can be authorized for work on the bridge.

Caution: If the SI&A ratings for the bridge requested have dropped significantly (i.e., 2 points or more in one inspection cycle), Local Systems may require additional information or explanation to justify the sudden change in bridge conditions. Such additional information might include pictures or other documentation provided by the city, county, or consultant that explains why the sudden change occurred. Reasonable care should be taken to verify that the changes to the SI&A ratings are justifiable, especially for those bridges that are close to not qualifying. Questionable SI&A rating information may lead to an audit of the city or county bridge inspection program. Ratings shall not be changed simply to make the bridge qualify for funding.

If a county bridge does not qualify for funding based on the QBL but the county believes the bridge needs to be replaced before it deteriorates enough to be on the QBL, the county may be granted an exception from the ICEA Executive Board. If the county wishes to request an exception, they should email the request to the Secondary Roads Engineer. If necessary, the Secondary Roads Engineer will send a request to the ICEA President to have the exception item placed on the ICEA Executive Board agenda. The county will be copied on this request. If the exception request needs to be brought to the ICEA Executive Board, the county shall write a memo, officially requesting the exception, and attach the most recent SI&A to the memo. The county shall state in the memo why this bridge is in need of replacement before all the other bridges shown on the QBL and should be ready to explain and defend their request to the ICEA Executive Board. If the ICEA Executive Board approves the request, the Secondary Roads Engineer shall provide a copy of the memo to the Local Systems Project Development Engineer and Technician via TPMS Development.

Closed Bridges

If a county or city bridge has been closed for 10 years or more, it is considered not significantly important and is therefore not eligible for HBP funding and will be removed from the QBL, unless the LPA has made reasonable progress in scheduling the rehabilitation or replacement of the bridge, which indicates the bridge was of significant importance.

DESIGN GUIDELINES

Any road or bridge projects that are located on the Primary System, Interstate System, or National Highway System (NHS), regardless of funding source, shall use the design guidelines in the [Iowa DOT Design Manual](#). Bridge replacement and rehabilitation projects should be designed to meet the design guidelines referenced in [I.M. 3.500](#), Bridge or Culvert Plans. Additionally, for all bridge projects, refer to the guidelines listed below:

- All bridge replacement projects shall be designed to HL-93 loading.
- For projects involving new construction or complete reconstruction within urban areas, refer to Iowa Statewide Urban Design and Specifications (SUDAS) [Design Manual](#), Chapter 5.
- For projects involving new construction or complete reconstruction on rural collectors and rural local roads, refer to [I.M. 3.210](#), Rural Design Guidelines.
- For projects with a rural cross section (e.g. shoulders with open ditches, no curbs) in urban areas or projects in transition areas between rural and urban areas, refer either to the SUDAS [Design Manual](#) or [I.M. 3.210](#).
- For guidance concerning the use and placement of guardrails and bridge rails, refer to [I.M. 3.230](#), Traffic Barriers (Guardrail and Bridge Rail).
- For guidance in providing a safe recovery area, refer to [I.M. 3.240](#), Clear Zone Guidelines.

PEDESTRIAN AND BICYCLE ACCOMMODATIONS

Under 23 U.S.C. 217(e), all projects with Federal financial participation that replace or rehabilitate a highway bridge deck are required to provide safe accommodation of pedestrians or bicyclists, as applicable, on the bridge, when both of the following conditions are met:

- the bridge is located on a highway on which pedestrians or bicyclists are allowed to operate at each end of the bridge, and
- FHWA determines that safe accommodation can be provided at reasonable cost.

The standard shoulder widths shown in the Design Tables in [I.M. 3.210](#) and [I.M. 3.215](#) should be sufficient in most circumstances to provide the necessary bike and pedestrian accommodation for Federal-aid participation. Where the need has been identified for additional shoulder width or pedestrian accommodation, it should be provided at a reasonable cost.

BRIDGE INSPECTIONS

All public highway bridges must be inspected in accordance with the National Bridge Inspection Standards (NBIS), as required by 23 CFR 650, Subpart C. If the Iowa DOT determines that an LPA is not in at least conditional compliance with NBIS requirements that LPA is not eligible to receive any type of Federal-aid, Federal-aid Swap, or State bridge funds, even if it has bridges that meet the eligibility requirements outlined above. For additional guidance concerning the NBIS requirements, refer to [I.M. 7.020](#), Bridge Inspections.

RAILROAD BRIDGES

The new NBIS now applies to private bridges that are connected to a public road on both ends of the bridge. Bridges carrying public highway traffic over a railroad may be owned by a railroad company. However, if the railroad company owns the bridge, it had previously not been subject to the inspection requirements of the NBIS. As a result, these bridges are not listed in the National Bridge Inventory (NBI) or QBL and is not eligible for HBP funding, unless the following steps are taken:

1. The bridge is inspected according to NBIS requirements.
2. Any rehabilitation or replacement of the bridge includes the requirement that ownership of the bridge is transferred to a public agency that will be responsible for maintaining the structure.

ELIGIBLE PROJECT COSTS

Types of Costs

City HBP Funds (Federal-aid) - Within the Limits of Participation (see below), City HBP Funds may only be used for construction. 100% of development and administrative costs, including design engineering, construction engineering and inspection, right-of-way acquisition, permit requirements, utility relocation costs that are not part of the construction contract, and railroad related costs shall be paid by the LPA.

- Off-system bridges: 100% of eligible construction costs will be reimbursed with Federal-aid up to a maximum reimbursement of \$1,500,000.
- On-system bridges: 80% of eligible construction costs will be reimbursed with Federal-aid and the 20% match will be Federal-aid Swap, with a maximum total reimbursement of \$1,500,000.

City Bridge Construction Funds (State-aid) - Within the Limits of Participation (see below), City Bridge Construction Funds may only be used for construction. 100% of development and administrative costs, including design engineering, construction engineering and inspection, right-of-way acquisition, permit requirements, utility relocation costs that are not part of the construction contract, and railroad related costs shall be paid by the LPA.

- All bridges: 100% of eligible construction costs will be reimbursed with a maximum reimbursement of \$500,000.

County HBP Funds (Federal-aid) - Within the Limits of Participation (see below), County HBP Funds may only be used for construction. 100% of development and administrative costs, including design engineering, construction engineering and inspection, right-of-way acquisition, permit requirements, utility relocation costs that are not part of the construction contract, and railroad related costs shall be paid by the LPA. 100 percent of eligible construction costs will be reimbursed for County HBP projects as noted below, unless 100% exceeds the county's 4.5 year borrow-ahead maximum.

- Off-system bridges: 100% of eligible construction costs will be reimbursed with Federal-aid, up to a maximum reimbursement equal to the county's 4.5 year borrow ahead.
- On-system bridges: 80% of eligible construction costs will be reimbursed with Federal-aid and the 20% match will be reimbursed with Federal-aid Swap, with a maximum total reimbursement equal to the county's 4.5 year borrow ahead. Both the Federal-aid and Federal-aid Swap shares will be deducted from the County's HBP balance.

County Bridge Construction Funds (Federal-aid and/or State-aid) - Within the Limits of Participation (see below), County Bridge Construction Funds may only be used for construction. 100% of development and administrative costs, including design engineering, construction engineering and inspection, right-of-way acquisition, permit requirements, utility relocation costs that are not part of the construction contract, and railroad related costs shall be paid by the LPA.

- All bridges: Up to 80% of eligible construction costs will be reimbursed with a combination of Federal-aid and County Bridge Construction Funds. The maximum total reimbursement will be \$2,000,000.

Limits of Participation

Replacement cost may include the bridge plus a nominal amount of roadway work sufficient to connect the structure to the existing roadway or return the grade line to an attainable Touchdown Point in accordance with the Iowa Statewide Urban Design and Specifications (SUDAS) [Design Manual](#), Chapter 5, for urban design guidance and [I.M. 3.210](#), Rural Design Guidelines. In most situations, the Touchdown Points and the Limits of Participation are at the same location. However, there are a few situations where the Limits of Participation may extend beyond the Touchdown Points. For more information, see [Attachment C](#).

Limits on Channel Work

Reasonable channel work necessary to improve the stream alignment through the bridge opening is eligible for funding. Typically, a limit of 500 feet is allowed under USACE Nationwide Permit Number 13, therefore, channel realignments exceeding 500 feet are typically not eligible for HBP or State bridge funds. To be eligible the work must be accomplished as part of the bridge project.

REHABILITATION PROJECTS

Bridge rehabilitation projects have some additional requirements and procedures associated with them, as described below.

Future Bridge Program Eligibility

Because HBP funds are allocated to cities and counties in part based on the number of Poor bridges, the Iowa DOT has instituted a “10-year rule” that prevents a bridge from remaining in the Poor classification after being replaced or rehabilitated, regardless of the type of funds used for the replacement or rehabilitation project. Rehabilitation projects are defined as requiring major work to restore the structural capacity of the bridge, as well as work necessary to correct major safety deficiencies. The Iowa DOT also considers bridge deck overlays that meet the requirements outlined below as rehabilitation work.

The effect of this rule is that the Iowa DOT will remove any bridge that has been replaced or rehabilitated in the last 10 years from the Qualifying Bridge List, and as a consequence, such bridges will not be eligible for any Federal or State bridge funds in Iowa. Therefore, the LPA should carefully consider the potential funding impacts when planning any type of bridge replacement or rehabilitation project.

Structural and Safety Deficiencies

The purpose of the bridge programs is to address bridges that are in Poor condition; therefore, a rehabilitation project must correct a bridge’s Poor status (except as noted in the “Design Exceptions” subsection below) and any major safety or structural problems. For example, the project may have to include widening, barrier rail, strengthening, etc. The remaining life of the rehabilitated bridge must be at least 15 years. The structural capacity after the rehabilitation shall be at least HS-20 (operating level).

To address possible safety problems, bridge projects should be reviewed according to the safety considerations outlined in [I.M. 3.220](#), 3R Guidelines. Bridge rails and approach guardrails should be reviewed in accordance with [I.M. 3.230](#), Traffic Barriers (Guardrail and Bridge Barrier Rail).

Bridge Deck Overlays

Bridge deck overlays are considered to be maintenance and are not typically eligible for HBP funds, unless the project includes substantial reconstruction of the deck by removing all deteriorated deck concrete. Deteriorated concrete includes areas that are delaminated or spalled; as well as concrete which is contaminated with chloride above the corrosion threshold. The LPA may either remove the entire deck down to the top mat of reinforcement or they may perform chloride testing to determine what, if any, areas of the top mat need to be removed and replaced. When the chloride concentration exceeds 0.6 of the hydroxyl concentration, corrosion is observed, according to a publication by Hausmann, D.A. in 1967 titled “Steel Corrosion in Concrete: How Does it Occur?” *Materials Protection*, **6**, 19-23. Chloride contents in excess of 0.025% per cubic yard of concrete for uncoated mild steel reinforcing bars and 0.1% per cubic yard for epoxy coated bars will cause corrosion to begin. This contaminated concrete must be removed and replaced. For concrete with a density of 150 lb./ft.³ this is 1 pound of chloride per cubic yard of concrete for uncoated steel and 4 pounds of chloride per cubic yard of concrete for epoxy coated bars. If chloride testing is performed instead of removing and replacing the concrete down to the top mat of reinforcing steel, the plan sheets should document the following information: locations where testing was performed, the outcomes of the testing, and what action needs to be taken because of the testing. No specific approval from FHWA is required to perform testing in lieu of replacing the concrete down to the top mat of reinforcing steel.

In lieu of the above overlay method, Iowa DOT [Bridge Standard Detail 1038](#), Deck Repair – Quantities, may be utilized. This method includes milling ¼” below the original surface and performing the necessary Class A and Class B repairs below the mill depth before completing a 1 ¾” PCC overlay, which results in a 1 ½” surface rise.

HS-20 structural capacity is not required to be met for bridge deck overlays because they are considered to be a preventative maintenance project rather than a true rehabilitation. The overlaid bridge needs to meet the original design loading.

Design Exceptions

All bridge projects shall follow the design guidelines shown above. Designing a bridge rehabilitation project for structural capacity less than what the bridge was originally designed for will not be allowed. However, if the LPA can demonstrate that it is not cost effective to upgrade the bridge to meet the geometric design guidelines for a rehabilitation project, a design exception may be utilized as prescribed in [I.M. 3.260](#), Design Exception Process.

If a design exception is utilized for a geometric element on a bridge rehabilitation project, the LPA has determined that for the remaining life of the bridge, it is adequate for the type and volume of projected traffic. Examples of such geometric elements include deck width, vertical clearance over the bridge roadway, vertical and horizontal under clearances, and approach roadway geometry. Since this may affect the future eligibility of the bridge for the bridge programs, LPAs should carefully consider all applicable justification and proposed mitigation items within [I.M. 3.260](#), Design Exception Process before utilizing a geometric design exception.

BRIDGE REMOVAL MITIGATION PROGRAM

The Iowa DOT has established a voluntary program to encourage the removal of low-use DOT-owned bridges that serve any non-interchange, grade-separated crossing of a county road with a primary or interstate highway. This includes county bridges over mainline primary or interstate highways, as well as mainline bridges over a county road.

A proposal to remove a bridge may be initiated by either the Iowa DOT or a county at any time. For each bridge removed, the Iowa DOT will provide a \$1,500,000 credit to the county HBP balance. This credit may be used on any bridge(s) on any public road in the county. A credit provided to a county will be exempt from the 4-year accumulation rule, since these funds are not part of the county's regular allocation.

If a county elects to take advantage of this program, the county shall hold a public hearing for the proposed bridge removal. After the public hearing, the county and the Iowa DOT shall execute an agreement for the bridge(s) utilizing this program. The crossing may remain open until its removal by the Iowa DOT at the earliest opportunity. Reversal of the agreement shall result in rescinding the credit to the county's HBP balance.