



Subject: Revisions to Chapter 3: Facilities Development Process

NOTE: The hypertext links below will send you to the latest version of the subject document. Subsequent transmittals may have made other changes to the document that aren't described below.

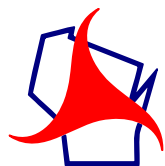
Where new text has been combined with old text, the new text appears as **shaded**.

[Procedure 3-1-5, revised](#)

- This procedure is being changed to incorporate the recent revisions to the "Agreement for the use of Federal Funds for Preventive Maintenance of Streets and Highways". FHWA and WisDOT signed a new Agreement in December of 2008. The revised procedure also provides more background and guidance concerning the application of Preventive Maintenance Projects.

[Procedure 3-15-25, revised](#)

- As part of the new Preventative Maintenance (PM) Project Agreement signed between WisDOT and FHWA, Design Study Reports (DSRs) are now required to be provided for these projects. Since highway geometrics are not required to be addressed on these types of projects, assuming that the safety analysis does not shown any crash problems due to the existing highway geometrics, an abbreviated DSR with the highway geometric sections left out was created. The Abbreviated DSR format can also be used for stand alone traffic signal, lighting, pavement marking and signing type projects also.



FACILITIES DEVELOPMENT MANUAL

Wisconsin Department of Transportation

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Introduction

Preventive maintenance treatments are applied to pavements or structures in good condition having significant remaining service life. Preventive Maintenance treatments are usually not cost effective on a structurally deficient pavement or structure. Preventive Maintenance activities extend the useful life of the existing highway without degrading safety. As a major component of pavement preservation, preventive maintenance is a strategy of extending the service life by applying cost-effective treatments to the surface or near-surface of structurally sound pavements.

FHWA defines a pavement preservation program as a network level, long-term treatments program that enhances pavement performance by using an integrated, cost-effective set of strategies to extend pavement life, improve safety and meet motorist expectations. A comprehensive pavement preservation program includes preventive maintenance, minor rehabilitation (non-structural) and routine maintenance activities. An effective pavement preservation program will address pavements while they are still in good condition and before the onset of serious damage.

An agreement between WisDOT and the FHWA Wisconsin Division allows for the use of Federal-aid Highway Funding for Preventive Maintenance activities as authorized in 23 USC 116 (d), "Preventive Maintenance" on all eligible Federal-aid highways in the State of Wisconsin. WisDOT and FHWA have signed two documents titled "Agreement for the use of Federal Funds for Preventive Maintenance of Streets and Highways" ([Attachment 1](#)) and "Agreement for the use of Federal Funds for Preventive Maintenance of Structures" ([Attachment 2](#)) that allows for the use of federal funds for preventive maintenance activities. Review these agreements to determine whether the proposed work is eligible.

Federally-Funded Preventive Maintenance projects are a subprogram of the STH improvement program. Federally-Funded Preventive Maintenance is not a part of the State Highway Rehabilitation – Maintenance (SHRM) program (see the Maintenance Manual for information concerning the SHRM Program). Preventive Maintenance (PM) projects span the gap between routine maintenance and improvement projects. PM projects preserve and maintain existing roadways and structures and are not intended to upgrade or improve highway facilities.

Requirements

The criteria used to develop the Streets and Highways agreement are based on the FHWA guidance issued by FHWA on September 12, 2005 ([Pavement Preservation Definitions](#)) and October 8, 2004 ([Preventive Maintenance Eligibility](#)) as well as current AASHTO guidance on Preventive Maintenance. Projects that address deficiencies in pavement structure or increase the capacity of the facility are not considered preventive maintenance.

In order to determine if geometric or safety enhancements are warranted, the evaluation of geometric features and crash information is required through analysis, e.g. with Meta Manager. Procedure 11-1-4 ([FDM 11-1-4](#)) describes the Programmatic Exceptions to Standards Process and should be used to validate that substandard roadway features are not contributing to a crash problem. Document this determination in the Abbreviated Design Study Report ([DSR Guidance 3-15-25](#)). If geometric, or cross sectional changes are required to address or maintain safety, the project is beyond the scope of preventive maintenance and is classified as a 3R project.

In addition to the types of eligible work described in the agreements, work must follow all regular Federal Aid requirements including but not limited to:

1. Planning – project in Transportation Improvement Program and/or STIP
2. Complete Environmental Document, – [FDM Chapter 21](#) (FDM 21-5-1 Attachment 1 List of Projects Covered by the Programmatic Environmental Report)
3. Transportation Management Plan, see [FDM 11-50-5](#)
4. Plans, Specifications, & Estimates, see [FDM Chapter 19](#)
5. All other applicable WisDOT procedures, i.e. DSR, etc.

6. FHWA prior approval for projects under the Structure Preventive Maintenance Agreement ([Attachment 2](#)).

Preventive Maintenance project scopes that only involve marking, signing, signals, and or highway lighting are only required to complete the abbreviated DSR and PS&E.

FHWA and WisDOT recognize the importance of system preservation but also require that adequate capacity be provided for. The projected capacity needs for a PM project can be no less than one Level of Service (LOS) grade below the required LOS Grade per FDM 11-5-3 ([FDM 11-5-3](#)) within 10 years of the date of construction. (See FDM 11-5-3 for acceptable capacity calculation methods). If the LOS is not acceptable within this time frame, FHWA pre-approval is required

For example, if a Region is planning to resurface a section of rural interstate in 2010, the projected LOS 10 years after construction in 2020 must be at least LOS D; highways in urban areas with populations greater than 250,000 such as Milwaukee County need to be LOS E 10 years after construction to be eligible for Federal Preventive Maintenance. Document this determination in the Abbreviated Design Study Report.

Eligible Work Under Preventive Maintenance

See agreements in [Attachment 1](#) and [Attachment 2](#) for preventive maintenance work that is eligible for federal funds. In order to optimize the value of performing PM activities, the various types of preventive maintenance work needed to restore a given section of highway (or combined sections of highway and/or bridges for a given activity) should be combined into one PM project whenever practical. Limits for bridge preventive maintenance projects will include the bridge plus nominal approach roadway lengths on each end to include the bridge approach guardrail. Advance load posting signs beyond these limits may be included.

Resurfacing is eligible under preventive maintenance if the project meets both of the following: the profile of the new surface can be no more than 2 inches above the originally constructed or reconstructed (See [FDM 3-5-2](#) For definition of reconstruction) roadway at the shoulder point and a maximum of 2 inches of new asphalt pavement can be placed, including all leveling and wedge courses, unless correcting cross slope deficiencies, see [Attachment 3](#) for an example. Additional thickness is allowed in the middle of a pavement section to correct for cross slope deficiencies. For example, over a 12-foot lane, correcting a 0.015 to a 0.20 pavement will increase the overlay thickness in the middle to about 2.75 inches while thickness at the edge of pavement is 2 inches. Preventive Maintenance does not include routine maintenance of random or isolated spot locations. Combining locations to establish a reasonable sized project is eligible. Several work activities are considered "spot location PM activities" in the agreement. The following scopes of work could be defined as routine maintenance of random or isolated spot locations but combining locations to establish a reasonable sized project is eligible: asphaltic patching (Pothole filling is routine maintenance and not eligible for preventive maintenance), PCC patching, beam/cable guard restoration/installation/upgrading, terminal end upgrading, highway signing restoration/installation/upgrading, pavement marking restoration/installation/upgrading, traffic signal restoration/upgrading/retiming, and highway lighting restoration/upgrading. An example of a reasonable sized pavement marking project includes repainting all lane lines for the interstate system in a WisDOT Region. At spot PM locations, fulfilling the minimum safety criteria note below is encouraged, but not required.

Preventative Maintenance Projects cannot change lane, total shoulder, or paved shoulder widths.

Safety Requirements

The guardrail, highway signing, and pavement markings within the limits of a PM project must be restored or upgraded to meet the following minimum criteria (however these criteria do not apply to spot location PM activities as previously noted):

1. On the National Highway System, Guardrail and end treatments must be upgraded to current standards on any preventive maintenance project. Eliminate all blunt end and turndown guardrail sections.
2. Replace damaged guardrail elements as defined in [FDM 11-45-1](#).
3. Adjust rail height of guardrail to meet the criteria in [FDM 11-45-1](#).
4. Upgrade all guardrail transitions to fixed objects to meet criteria in [FDM 11-45-1](#).
5. Upgrade all guardrail installations with 12'-6" post spacing or with no block-outs.
6. Remove all strong-post cable guard installations, replace with compliant barrier if needed.
7. Remove all vegetation obscuring any highway signing.
8. Remove all vegetation within the clear zone which can reasonably be expected to exceed 4 inches in

diameter at maturity.

9. Upgrade all deficient highway signing and pavement marking.

Item 1 above identifies the requirements for guardrail end treatments on the National Highway System (NHS). For non-NHS projects, address guardrail end treatments as defined for 3R projects in [FDM 11-45-1](#).

Preventive Maintenance overlays projects need to maintain existing usable shoulder widths and recoverable slopes within the clear zone. There is not an issue with usable shoulder width or recoverable slopes for 2-inch overlays if the existing sideslope is 6:1. If the existing sideslope is 4:1 then the 2-inch maximum overlay can still be used on a roadway with a 6-foot or greater finished shoulder width, but the shoulder cross-slope will need to be steepened (use 6% MAX).

LIST OF ATTACHMENTS

- [Attachment 1](#) Agreement for Use of Federal Funds for Preventive Maintenance of Streets & Highways
- [Attachment 2](#) Agreement for Use of Federal Funds for Preventive Maintenance of Structures
- [Attachment 3](#) Allowable Overlay on Existing 2% Cross Slope

**AGREEMENT FOR THE USE OF FEDERAL FUNDS FOR
PREVENTIVE MAINTENANCE OF STREETS & HIGHWAYS
(Except Structures)**

This agreement between the Wisconsin Department of Transportation (WisDOT) and the Wisconsin Division of the Federal Highway Administration (FHWA), is intended to implement the use of Federal-aid Highway Funding for Preventive Maintenance activities as authorized in 23 USC 116 (d), "Preventive Maintenance" on all eligible highways in the State of Wisconsin.

The criteria used to develop this agreement are based on the FHWA guidance issued by FHWA on September 12, 2005 (Pavement Preservation Definitions) and October 8, 2004 (Preventive Maintenance Eligibility) as well as current AASHTO guidance on Preventive Maintenance.

This agreement is limited to Preventive Maintenance (PM) activities on Roadways. It does not cover PM activities on Structures. A separate agreement addresses PM activities on Structures.

By signing this agreement, WisDOT and the FHWA incorporate by reference the laws, regulations, policies, standards, and procedures which govern or are applicable to Federal-aid projects. WisDOT certifies that it will comply with all provisions of 23 USC 133, "Surface Transportation Program," for non-National Highway System PM projects.

Nothing in this agreement shall be construed to relieve WisDOT from ultimate accountability for compliance with Federal Laws and regulations with respect to the expenditure of Federal-aid highway funds for PM activities in the State of Wisconsin, including those funds used for local government projects.

This agreement shall become effective on projects beginning with the February 1, 2009 PS&E quarterly submittal date and supersedes the previous preventive maintenance agreement dated July 1, 2002. This agreement may be canceled or modified at any time by either WisDOT or the FHWA given 90 days notices.

Wisconsin Department of Transportation



Kevin Chesnik, Administrator

Division Of Transportation Systems Development

11/25/08
Date

Federal Highway Administration



Allen Radliff, Division Administrator

Wisconsin Division

12/5/08
Date

I. DEFINITION AND PURPOSE OF PREVENTIVE MAINTENANCE

Preventive maintenance (PM) is the planned strategy of cost effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system without increasing structural or operational capacity. Preventive maintenance is typically applied to pavements in good condition having significant remaining service life. As a major component of pavement preservation, preventive maintenance is a strategy of extending the service life by applying cost-effective treatments to the surface or near-surface of structurally sound pavements.

Preventive maintenance activities should extend the useful life of the existing highway without degrading safety. The evaluation of geometric features and crash information, in order to determine if geometric or safety enhancements are warranted, is required through analysis, e.g. Meta Manager. If geometric changes are required to address safety, the project is beyond the scope of preventive maintenance. Restoring or upgrading guardrail, highway signing, and pavement marking to meet the minimum criteria included in this agreement is required, except for spot location activities.

II. CONDITIONS APPLYING TO THE USE OF FEDERAL FUNDS FOR PREVENTIVE MAINTENANCE WORK ON STREETS & HIGHWAYS (Except Structures)

The following conditions apply to the use of federal funds for preventive maintenance work:

1. The highway must be eligible for federal funding. Federal funds can be used only for roadway work and appurtenances to the roadway under this agreement. PM work on bridges (i.e. abutment to abutment) is not covered by this agreement.
2. Work must follow all regular Federal Aid requirements, i.e., TIP/STIP, Environmental Document, TMP, PS&E, etc.
3. Work must follow all regular WisDOT FDM procedures, i.e., DSR, etc.
4. The projected capacity needs are no less than one LOS grade below the required LOS per FDM 11-5-3 with in 10 years of the date of construction. (See FDM 11-5-3 for acceptable capacity calculation methods). If the LOS is not acceptable within this time frame, FHWA pre-approval is required.
5. Work should be competitively bid. Any non-let work must be approved in accordance with the requirements of FDM 3-20-11: Negotiated Agreements and FDM 3-20-12: Cost Effectiveness Finding (i.e. Public Interest Documentation).
6. Guardrail, highway signing, and pavement markings must be restored or upgraded to meet the minimum criteria included in Section IV of this agreement for any PM work other than spot location activities.

III. ELIGIBLE TYPES OF WORK

The following types of work are eligible for the use of federal funds for preventive maintenance. In order to optimize the value of performing PM activities, the various types of preventive maintenance work needed to restore a given section of highway (or combined sections of highway for a given activity) should be combined into one PM project whenever practicable.

Pavement Strategies:	Safety appurtenances:
Resurfacing ¹ Milling Rut filling Seal coating Crack filling Asphaltic patching – full depth ^{2, 3} Portland cement concrete (PCC) dowel bar retrofiting Diamond grinding PCC joint restoration ² PCC patching – full depth ^{2, 3}	Beam/cable guard restoration/installation/upgrading ³ Terminal End upgrading ³ Highway signing restoration/installation/upgrading ^{3, 4} Pavement marking restoration/upgrading ^{3, 4} Traffic signal restoration/upgrading/retiming ^{3, 4} Highway lighting restoration/upgrading ^{3, 4} Railroad Crossing Warning Device restoration/upgrading
Drainage restoration:	Other:
Ditch restoration ² Storm drain restoration ² Culvert pipe restoration/replacement ² Traversable Grates ² Culvert pipe liners ² Box culvert restoration ²	Shoulder restoration/paving Shoulder rumble strips Erosion prevention/slope restoration ² Clear zone restoration (tree/shrub removal) ² Rip-rap restoration or addition ² Curb, gutter, sidewalk restoration

Notes:

- 1 Resurfacing is eligible under preventive maintenance if the project meets both of the following: the profile of the new surface can be no more than 2 inches above the originally constructed or reconstructed profile at the shoulder point and a maximum of 2 inches of new asphalt pavement can be placed, including all leveling and wedge courses, unless correcting cross slope deficiencies
- 2 These work activities are generally considered “spot location PM activities”. Fulfilling the minimum safety criteria note below is encouraged, but not required. Spot Location is defined as the immediate contiguous area exhibiting a particular distress or deterioration.
- 3 Does not include routine maintenance of random or isolated spot locations. Combining locations to establish a reasonable sized project is eligible. Pot hole filling is routine maintenance and not eligible for preventive maintenance.
- 4 Eligible only if incidental to a pavement preventive maintenance project.

IV. MINIMUM SAFETY CRITERIA FOR GUARDRAIL, HIGHWAY SIGNING, AND PAVEMENT MARKING

The guardrail, highway signing, and pavement markings within the limits of a PM project must be restored or upgraded to meet the following minimum criteria (however these criteria do not apply to spot location PM activities as previously noted):

1. On the National Highway System, guardrail and end treatments must be upgraded to current standards on any preventive maintenance project. Eliminate all blunt end and turndown guardrail sections.
2. Replace damaged guardrail elements as defined in FDM 11-45-1.
3. Adjust rail height of guardrail to meet the criteria in FDM 11-45-1.
4. Upgrade all guardrail transitions to fixed objects to meet criteria in FDM 11-45-1.
5. Upgrade all guardrail installations with 12'-6" post spacing or with no block-outs.
6. Remove all strong-post cable guard installations, replace with compliant barrier if needed.
7. Remove all vegetation obscuring any highway signing.
8. Remove all vegetation within the clear zone which can reasonably be expected to exceed 4 inches in diameter at maturity.
9. Upgrade all deficient highway signing and pavement marking.

**AGREEMENT FOR THE USE OF FEDERAL FUNDS FOR
PREVENTIVE MAINTENANCE OF STRUCTURES**

This agreement between the Wisconsin Department of Transportation (WisDOT) and the Wisconsin Division of the Federal Highway Administration (FHWA), is intended to implement the use of Federal-aid Highway Funding for Preventive Maintenance activities as authorized in 23 USC 116 (d), "Preventive Maintenance" on all eligible highways in the State of Wisconsin.

The criteria used to develop this agreement are based on the FHWA guidance issued by FHWA on March 21, 1996 ("Preventive Maintenance, Revision to 23 USC 116", issued by the Director Office of Engineering), and current AASHTO guidance on Preventive Maintenance.

This agreement is limited to Preventive Maintenance (PM) activities on Structures. It does not cover PM activities on Roadways. A separate agreement has been developed for PM activities on Roadways.

By signing this agreement, WisDOT and the FHWA incorporate by reference the laws, regulations, policies, standards, and procedures which govern or are applicable to Federal-aid projects. WisDOT certifies that it will comply with all provisions of 23 USC 133, "Surface Transportation Program," for non-National Highway System PM projects.

Nothing in this agreement shall be construed to relieve WisDOT from ultimate accountability for compliance with Federal Laws and regulations with respect to the expenditure of Federal-aid highway funds for PM activities in the State of Wisconsin, including those funds used for local government projects.

This agreement shall become effective August 1, 2003. It may be canceled or modified at any time by mutual agreement of WisDOT and the FHWA.

Wisconsin Department of Transportation

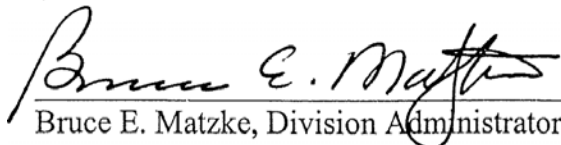


Kevin Chesnik, Administrator
Division of Transportation Infrastructure Development

8/21/03

Date

Federal Highway Administration



Bruce E. Matzke, Division Administrator
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8/25/03

Date

I. DEFINITION AND PURPOSE OF PREVENTIVE MAINTENANCE

Preventive maintenance (PM) is the planned strategy of cost effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system without increasing structural or operational capacity.

Preventive maintenance activities should extend the useful life of the existing structure without degrading safety or roadway geometrics. The evaluation of geometric features and accident information, in order to determine if geometric or safety enhancements are warranted is encouraged, but is usually beyond the scope of most preventive maintenance work. However, restoring or upgrading bridge parapets, and rails, approach guardrail, approach signing, and approach and deck pavement marking to meet the minimum criteria included in this agreement is required, except for spot location activities.

Limits for bridge preventive maintenance will include the bridge plus nominal approach roadway lengths on each end to include the bridge approach guardrail. (Typically less than 150 feet on each end.) Advance load posting signs beyond these limits may be included.

II. CONDITIONS APPLYING TO THE USE OF FEDERAL FUNDS FOR PREVENTIVE MAINTENANCE WORK ON STRUCTURES

The following conditions apply to the use of federal funds for preventive maintenance work:

1. The structure on which the work is to be done must be eligible for federal funding.
2. Work should usually be by competitive bid. Any non-let work must be approved in accordance with the requirements of FDM 3-20-11: Negotiated Contracts and FDM 3-20-12: Cost Effectiveness Finding (i.e. Public Interest Documentation).
3. Federal funds can be used only for structure work and appurtenances to the structure under this agreement. PM work on the roadway (beyond the abutment wing tip) is not covered by this agreement.
4. Roadway geometrics and appurtenances (i.e. guardrail, sign bridges, drainage structures, etc.) should not be degraded by the preventive maintenance work. Safety appurtenances should be upgraded to current standards as a part of the preventive maintenance work whenever practicable.
5. Bridge parapets and rails, approach guardrail, approach signing, and approach and bridge deck pavement markings must be restored or upgraded to meet the minimum criteria included in Section V of this agreement for any PM work other than spot location activities.

III. ELIGIBLE TYPES OF WORK

The following types of work are eligible for the use of federal funds for preventive maintenance. In order to optimize the value of performing PM activities, the various types of preventive maintenance work needed to restore a given structure (or combined structures for a given activity) should be combined into one PM project whenever practicable.

Examples of preventive maintenance to structures may include but are not limited to the following:

- Power washing decks or bridges
- Sealing cracks or joints
- Concrete deck patching
- Sealing decks
- Polymer asphalt deck overlay
- Asphalt deck overlay with membrane
- Concrete deck overlay
- Installation of a Cathodic Protection System
- Chloride Extraction
- Complete repainting
- Zone repainting
- Spot repainting with complete overcoat
- Bearing repair
- Bearing replacement
- Open expansion joint replacement with a waterproof joint
- Expansion joint elimination
- Riprap placement
- Channel Restoration
- Channel debris removal
- Flood damage repair
- Bridge approach restoration
- Structural repairs (except vehicle damage)
- Bridge Rail Restoration/Retrofit to New Standards
- Installing vehicle warning systems

Other structure restoration activities when justified via a design study report and concurred in by the WisDOT Bureau of Structures and FHWA on an individual basis

Fulfilling the minimum safety criteria note below is encouraged, but not required. Combining locations to establish a reasonable sized project is eligible.

IV SPECIAL LIMITATIONS

The following actions are usually considered routine maintenance and are not allowed under this agreement.

- Asphalt deck overlays without membrane
- Spot painting
- Joint gland replacement
- Joint gland repair
- Expansion joint repair
- Slope protection repair
- Vehicle damage repair
- Asphalt deck patching

The following actions are usually considered as Improvements and are not allowed under this agreement:

- Bridge replacement
- Deck replacement
- Box culvert extensions

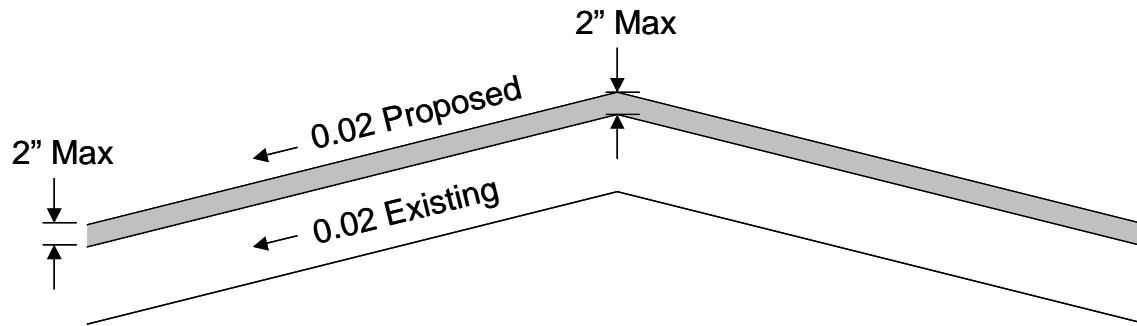
The use of HBRRP funds is specifically excluded from this agreement until such time as WisDOT actively uses an operational bridge management system to help prioritize needed structure work activities.

V MINIMUM SAFETY CRITERIA FOR BRIDGE APPROACH GUARDRAIL, HIGHWAY SIGNING, AND PAVEMENT MARKING

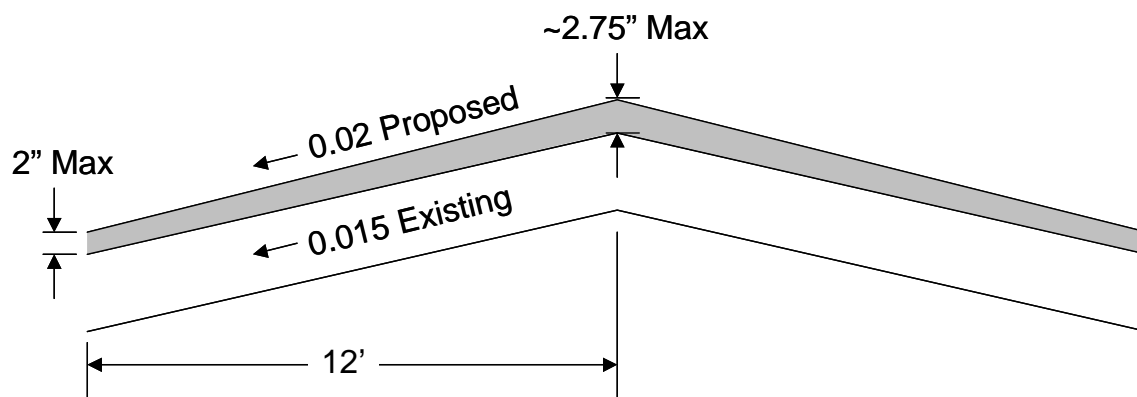
The bridge parapets and rails, bridge approach guardrail, bridge approach signing, and bridge deck and approach pavement markings within the limits of a PM project must be restored or upgraded to meet the following minimum criteria (however these criteria do not apply to spot location PM activities as previously noted):

1. Restore damaged bridge parapet and rail elements.
2. Replace damaged approach guardrail elements.
3. Adjust rail height of guardrail to meet the criteria in FDM 11-45-1.
4. Transition and connect stand-alone bridge guardrail installations to the bridge rails.
5. Eliminate all blunt end approach guardrail sections.
6. Upgrade all approach guardrail installations with 12'-6" post spacing or with no block-outs.
7. Upgrade all approach strong-post cable guard installations.
8. Remove all vegetation obscuring any highway signing.
9. Upgrade all deficient bridge approach signing and pavement marking.
10. On Interstate Highways, bridge approach guardrail and end treatments must be upgraded to current standards for all overlays or similar projects; unless otherwise justified in the Design Study Report, and concurred in by the WisDOT Bureau of Highway Operation and FHWA prior to the submittal of the PS&E.

Allowable Overlay on Existing 2% Cross Slope



Allowable Overlay on Existing 1.5% Cross Slope





1 - Introduction

Subsequent to a Concept Definition Report and prior to a Design Study Report, considerable data gathering, analysis of alternatives, public involvement, assessment of environmental effects, etc., may occur depending upon the nature and the complexity of the project. To implement these activities, the region or Bureau of Project Development (BPD) may determine that it is desirable to summarize concurrences, to specify various project considerations, or to involve department management in the resolution of specific project issues through the development of an intermediate report.

Intermediate reports are not required as part of the specific approval steps of the facilities development process. However, they are prepared at the discretion of the region or Bureau of Project Development when either determines that they are necessary to adequately assess the more complex or unusual aspects of the project not covered by normal project development procedure. As appropriate, these reports are submitted to the Bureau Director for consideration at the appropriate level of management.

2 - Location Study Report

One report commonly used for major projects is a Location Study Report. This is used to document the factors affecting the selection of an alignment alternative and to solicit concurrence with that selection.

3 - Exceptions to Standards

Another type of report is a request for exception to design standards. In most cases this type of report should be submitted in advance of the design study report. This will prevent delays in Design Study Report approval while the exception request is evaluated.

See [FDM 11-1-2](#) for the content of requests for formal exceptions to standards and [FDM 11-1-4](#) for programmatic exceptions to standards and the procedures to get them approved.

4 - Design Study Report (DSR)

All projects in the improvement program require a Design Study Report (DSR) to be completed. The purpose of the DSR is to document the decisions and rationale for decisions in the development of an improvement project. The DSR, at a minimum, shall address the following:

- Design criteria proposed, whether within or outside of desirable or minimum standards.
- Geometric and Safety aspects to be addressed by the project improvements
- Summary and Synopsis of important project approvals and decisions and rationale for decisions

Other things about DSRs to be aware of:

- Must be approved before Final Design can begin on a project. (Final Design is defined as any project development activity required to develop the PS&E beyond which is needed to complete the environmental document and establish key design criteria that will be used to prepare the DSR; i.e. - preliminary horizontal and vertical alignments, typical sections, etc.)
- Must be approved before Real Estate Relocation Orders can be approved and Real Estate acquisition can begin on a project
- Will be kept in the Central Office files indefinitely until a future DSR replaces it as defense against potential legal actions
- Serves as the bridging document between preliminary and final design.
- Serves as a good "check box" for designers as to what needs to be completed in preliminary design.
- Serves as a good summary of project decisions and source of project information when staff changes occur.

A DSR is approved upon completion of the hearing(s) or hearing opportunity(ies) and finalization of the

environmental document and approval of the Transportation Management Plan (TMP) . For those projects not requiring a hearing or an opportunity for a hearing, the final DSR can be submitted shortly after the approval of the environmental document and Transportation Management Plan (TMP). When the DSR originates outside the department, the report shall be signed and sealed by the professional engineer in responsible charge of its preparation. Draft DSRs can be submitted to the WisDOT region office and Bureau of Project Development staffs for review at any time for comments. This can be especially important when review comments are needed before significant effort or time is expended in finishing the preliminary right-of-way plats and design plans for a project.

The regions will develop DSRs for improvement projects designed in-house and will involve the appropriate bureau personnel while doing so. The regions will also review and approve DSRs for improvement projects on the STH system that are designed by consultants or local municipalities.

4.1 - Concurrence Process

Region Project Development Chiefs will approve all DSRs for STH improvement projects within their region. Concurrence with the DSR from the Bureau of Project Development, Project Services Section, is required for all state trunk highway (STH) and National Highway System (NHS) projects. Project oversight engineers in the Project Services Section have been delegated authority to concur with these DSRs.

Local Program Management Consultants will approve all DSRs for Local improvement projects within their region. The Bureau of Project Development, Region Local Program Project Manager will concur on all DSRs on Local highway improvement projects^(a).

Table 1. Authorizing Signature

Project Type	Authorizing Signatures Required
Local	Regional Local Program Management Consultant & Region Local Program Project Manager ^(a)
STH & NHS	Region & Project Services Section ^(b)

(a) Concurrence on DSRs for Local Improvement projects on NHS routes shall be by the Bureau of Project Development, Projects Services Section.

(b) The regions shall provide a minimum of one (1) original signed copy to the Bureau of Project Development, Project Services Section as shown in the table. Send additional signed copies if the region, locals or consultant desire a signed copy for their files. Otherwise, a photocopy of the signed cover sheet will be sent back to the region and the region will need to provide additional photocopies if desired.

If the Project Services Section Oversight Engineer or Chief, or Region Local Program Project Manager or Local Program Management-Consultant Section Chief do not concur in a DSR then section staff will initiate discussions with the appropriate region staff or Local Program Management Consultant staff to resolve the differences. This shall begin within thirty days of receipt of the DSR in the Project Services Section or Local Program Management-Consultant Section. If the issue cannot be resolved at the staff level, the Bureau Director shall seek resolution with the appropriate Region Director.

These concurrences are required prior to proceeding with the preparation of final design plans or approval of the relocation order. Under certain circumstances right of way may be appraised or acquired prior to concurrence in the DSR. See [FDM 3-20-15](#) for further guidance.

4.2 - Distribution

BPD Project Services Section and Region Local Program Project Management staff will forward to FHWA points of contact electronic copies of all approved DSR's for all projects that have been designated for Federal Oversight in accordance with the Federal Oversight Agreement. See [Table 2](#) for standard designated Federal Oversight categories. FHWA may choose to designate projects to be Federal Oversight that do not meet the [Table 2](#) categories, Region staff must check FIIPs or consult with their Region Planning section to determine if a project has been designated as Federal Oversight or not.

Table 2. Federal Oversight Categories

TYPE OF PROJECTS
Federal “Major” – Projects with an estimated total cost greater than \$500 million in the Environmental Document , or projects approaching \$500 million with a high level of interest by the public, Congress, or the Administration. ^(a)
High-Cost Interstate - New construction, reconstruction, 3R, and expansion projects on the Interstate system with total estimated costs greater than \$25 million in the Environmental Document . ^(a)
High-Cost NHS - New construction, reconstruction, 3R, and expansion projects on the NHS (non-interstate) with total estimated costs greater than \$100 million in the Environmental Document . ^(a)
Other Designated “Oversight Projects” – Additional NHS or non-NHS projects selected by FHWA as Federal “oversight” due to unique complexities related to such items as contracting methods, innovative financing methods, innovative or experimental materials or construction methods, complex traffic issues, route type, geographical location, or high political interest. ^(b)
Special Funded (Earmark) Stand-Alone ITS Projects – All special funded stand-alone ITS projects will have full FHWA oversight regardless of dollar amount.
Right-of-Way Projects – Federal oversight of ROW acquisition projects will follow the guidance above.

(a) **Applicability** - Oversight designation will apply to all phases of the project (design and construction). Unless FHWA specifically determines otherwise, all individual project IDs that comprise the overall project will be considered Federal oversight projects. FHWA may elect to waive oversight, on a project-by-project basis, of those projects and/or contracts that consist of work that is considered low risk such as pavement marking, signing, signals, guardrail, ramp metering and landscaping. State or locally-funded phases, segments or contracts (that are components of a larger project that has other phases, segments or contracts that are Federally-funded), will not be subject to Federal oversight, but will require compliance with selected Federal laws and regulations.

(b) **Applicability** - Projects may be designated “oversight” for one or both of the following phases: design and construction. FHWA will determine these “other” oversight projects, in consultation with WisDOT. The applicability will be defined as part of that identification process.

4.3 - Content

The following is intended to explain in more detail the DSR topics. [Attachment 1](#) and [Attachment 2](#) shows the Regular DSR and Abbreviated DSR format documents with a link to electronic copies. Use the Regular DSR format document for projects in which work is proposed to be completed to the roadway cross section or geometrics in which either new construction or 3R/4R standards apply. Use the Abbreviated DSR format document on Preventative Maintenance (PM) projects or stand alone traffic signal, lighting, pavement marking or signing type projects. For the Abbreviated DSR format document, only provide the information asked for in those sections shown in [Attachment 2](#). The Abbreviated DSR format document follows the same format as the Regular DSR format except that the sections not applicable to the Abbreviated DSR type projects were removed, thus the numbering of the sections is not always in sequential order. However, both DSRs refer to the same sections of this FDM chapter for information related to filling out the DSR. It is not necessary to address every topic in depth for each DSR. Label topics that do not apply to the project as either

- Does not exist on the project, (e.g. no railroads exist within the project limits)
- Will not be affected by the project.
- Is not required for the project.

Information may be provided in either text, tabular or attachment form as explained in the topic sections that follow or as shown in [Attachment 1](#) and [Attachment 2](#). Any tables shown in [Attachment 1](#) and [Attachment 2](#) that do not apply to the project or in which the information is provided on an attachment (e.g. typical cross sections) may be deleted if not needed. Just note “See Attachment ___” under the section titles where tables are deleted.

The items marked with an asterisk in [Attachment 1](#) are controlling criteria. If proposed conditions do not meet current minimum standards (new construction standards for reconstruction and 3R standards for resurfacing and reconditioning projects), and the item is a controlling criterion, then an exception to standards must be secured separately for these items. (See [FDM 11-1-2](#)) Certain 3R projects are covered by a Programmatic Exception to Standards Report. See [FDM 11-1-4](#) for more guidance.

Exceptions for the following items can be secured through documentation in the DSR itself.

- Exceptions for standards that are not controlling criteria.
- Exceptions for non-compliance with a “Desirable” standard, as long as the minimum standard for the criterion is met.

Attach a map that is appropriate to the project as an appendix to every DSR. That would typically be a county map with termini marked on it for a rural project, a city street map for an urban project, or a county map with the location circled for a bridge or spot location project. If included, attach typical cross sections, as-built or preliminary plan sheets, encroachment reports, etc. as appendices rather than inserting them within the text.

Cover Sheets

Transmittal Letter - A memo transmitting the DSR from the region to Bureau of Project Development is required. If WisDOT personnel prepare the DSR, this is the only cover sheet required. It should contain two signature blocks, one for either the Region Project Development Chief or Local Program Management Consultant's and one for either the Project Services Section's or Local Program Management-Consultant Section's concurrence signature. [Attachment 1](#) and [Attachment 2](#) provide a format for these memos with imbedded Word shells. Use the titles of Region Project Development Chief or Local Program Management Consultant and Project Services Section Chief or Local Program Management-Consultant Section Chief even though others may be authorized to sign for them. Do not place these signature blocks within the report.

Title Sheet - All DSR's prepared by consultants must contain their seal. The purpose of this sheet is to identify the project and provide a standard location for the seal. If DOT personnel prepare the DSR, this sheet is not required. Project identification on this sheet should include the design I.D. number, route number or road name, Structure ID number (when structures are part of the project), termini, and county.

1.0 Project Description and Need

- 1.1. Federal Oversight – State if project is a Federal oversight project (Yes or No). Check [Table 2](#) in this procedure for standard Federal Oversight project categories. Check FIIPs or with Region Planning Sections to determine if a project outside of the [Table 2](#) categories has been designated as Federal Oversight.
- 1.2. Project Length and Termini - State the length of the project. If generalized termini are used on the cover sheet define the limits more precisely here or attach a map or project overview with the termini labeled. Also provide beginning and ending stations for the project if stationing will be used in the document to describe locations of various features.
- 1.3. Functional Classification/Access Control - Indicate whether the roadway is an arterial, collector, or local service facility; whether the project or segments of the project are Rural, Urban or Transitional and whether the roadway is a Corridors 2020 Backbone Route or Connector Route. (see [FDM 4-1-5, Attachment 1](#)) Indicate if the road is an [NHS route](#) (click on the city name for a local map) or not, part of a [Federal](#) or [State](#) Long Truck Route or not, and what Access Control Tier Category (see [FDM 7-5-1](#)) the project falls under. Also note if the roadway is on an approved bicycle or pedestrian transportation plan. <http://www.dot.wisconsin.gov/projects/state/docs/bike-ped-coordinators-map.pdf>
- 1.4. Need for Project - Describe those deficiencies in the present facility that caused the project to be programmed. Generally, focus on pavement condition, safety, or traffic capacity. The list below describes some of these.
 - Age and condition of roadway, pavement, bridges, etc.
 - Traffic congestion (levels of service, operating conditions, etc.)
 - Significant crash locations and crash patterns
 - Other safety considerations
 - High maintenance costs
 - Public concern
 - Construction staging (one phase of a much bigger improvement)
 - Other considerations

2.0 Present Facility

- 2.1. Posted Speed - State the regulatory speed limit(s) and provide any advisory speeds.
- 2.2. Geometrics – Identify any features that are outside of desirable or minimum design standards based on the project type (e.g. new construction/reconstruction, 3R, rural or urban, etc.), how many of each

there are, how much outside of design standards they are and where they are located relative to physical features. If no geometric features are outside of standards, then just state "None".

The information for these features may either be given in the text/tables of the DSR or on as-built plan sheets attached to the DSR with the features highlighted.

- 2.2.1. For horizontal alignment features outside of desirable or minimum design standards, provide feature type (curve, P.I. deflection, etc.), location, size (radius, P.I. deflection, etc.), super-elevation rate and speed rating.
 - 2.2.2. For vertical alignment features outside of desirable or minimum design standards, provide feature type (curve, grade deflection, etc.), location, whether sag or crest, grades, K value or grade deflection, speed rating and whether stopping sight distance is met or not.
 - 2.2.3. For vertical grades and clearance features, provide the location, % grade and vertical clearance for steep tangent grades and low vertical clearance locations. **For the Abbreviated DSR, documentation of grade information is not required.** Provide vertical clearances as measured from the roadway to bridges passing over the mainline, to overhead trusses on bridges carrying the mainline, and as measured from the bottom of mainline bridges to the surface of features below (e.g., RR tracks, water level in streams, etc.).
- 2.3. Side roads / Intersection / Interchanges – Provide existing side road, intersection and interchange information in the DSR. If there are no side roads, intersections, or interchanges on the project then just state "None".

The intersection information for these features may either be given in the text/tables of the DSR or on as-built plan sheets attached to the DSR with the features highlighted.

- 2.3.1. Side road information should include roadway name, functional classification, posted speed, existing traffic (AADT), intersection approach grade and whether pedestrian or bicycle facilities are present. If existing traffic volumes are not known, state whether the AADT is assumed to be < 100 or > 100.
 - 2.3.2. Intersection information should include intersecting roadway names, intersection types [Rural (A1/A2/B1/B2/C/D), urban, roundabout, etc. as described in [FDM 11-25-1](#) and [FDM 11-26-1](#)], intersection angles, traffic control (2 or 4-way stop, signal, roundabout, etc.), stopping sight distance, intersection sight distance, vision triangles, and corner clearance to driveways.
 - 2.3.3. Interchange information should include intersecting roadway names, interchange types (diamond, cloverleaf, etc. as described in [FDM 11-30-1](#)), ramp types (exit or entrance and whether tapered, parallel, collector/distributor, left side ramps, etc.), ramp design speed(s), ramp grades, stopping sight distance and decision sight distance.
- 2.4. Cross Section – Identify cross section features by either attaching an existing typical cross section(s) as an attachment(s) to the DSR or by providing the information in the text of the DSR. Indicate ranges where applicable. Identify on-road bicycle facilities (bike lanes, paved shoulders, or wide lanes for bicyclists). Identify presence of sidewalks and curb ramps or shared-use paths. Identify widths outside of minimum or desirable standards. See [Attachment 3](#) for the format of information to be provided on attached typical cross sections².
- 2.5. Pavement Structure / Condition - Provide types and thickness of pavement layers, including base course. Give a physical description of the pavement (e.g. rutting, transverse/longitudinal cracking, etc.) Information on type and thickness of pavement layers can be shown on either an attached existing typical cross section(s) or in the text or tables of the DSR. See [Attachment 3](#) for the format of information to be provided on attached typical cross sections.
- 2.6. Right of Way - Attach the project's list of encroachments (see [FDM 12-1-20](#)) or provide the information as text or as a table in the DSR. Identify any existing R/W issues that are unique to the project.
- 2.7. Structures – Indicate existing structure I.D. number, feature crossed, type of structure, sufficiency rating, clear roadway width, railing type and whether structurally deficient or functionally obsolete. If structurally inadequate, provide inventory load rating. Large drainage structures (box culverts and multiple pipe installations) with a span length less than 20 feet should also be described and their condition noted if they are to be replaced. Also, identify other types of structures such as sign bridges,

² The cross sections in Attachment [3](#) and others are available as CADD cells in a folder called cdtyps.cel.

tunnels, etc.

- 2.8. Utilities - List names, types and general locations of existing utility facilities and whether underground or overhead. Any utilities that will add to the complexity of the project or are attached to an existing bridge should be mentioned in the comments section.
- 2.9. Railroad Crossings - Indicate where they exist on the project and provide the name of the railroad, the number of tracks, their function (e.g., mainline, siding or spur, switching, etc.), and crossing type (arms, signals, cross-buck signing, grade separation, etc.). If a run-out lane is present at the crossing, then provide a description of its design in the comments section.
- 2.10. Special Soils Conditions – Describe only special or unique soils conditions (such as rock, marsh, or frost susceptible soils) that have a direct effect on the design features chosen for the project. If there are no special soil conditions then state None.
- 2.11. Unique Project Features - Describe features of environmental significance on the project including historic, archeological, hazardous materials, or things that have been identified by a community or the public as being important to their community's identity or vitality.

3.0 Traffic

3.1. Traffic Volumes / Conditions –

- 3.1.1. Attach the project's Traffic Forecast Report. (see FDM 3-10-10). For the Abbreviated DSR, just provide the existing Average Annual Daily Traffic (AADT) volume(s) in place of the Traffic Forecast Report.
- 3.1.2. If a highway capacity analysis was completed for the project, provide the existing and design year levels of service. (See FDM 11-5-3, FDM 11-15-1, and FDM 11-20-1 for guidance on when a level of service analysis needs to be completed). For the Abbreviated DSR, use the Meta-manger LOS data for the existing, construction year and construction year + 10 year level of service information.

3.2. Crash Analysis -

- 3.2.1. Provide the crash rates for the project, using a minimum of the most current 3-year period available, and compare it to the most current statewide crash rates for that type of facility (e.g. two-lane rural, rural interstate, etc.) over the same years. Include the number and severity of crashes for each year. See the region Traffic Section to obtain the most current 3-year crash information for the project site. WisDOT staff can go the following address <http://dotnet/dtid%5Fbho/dotnet/> to view statewide average crash rates. Consultants can request this information from the region project development staff.
- 3.2.2. Even with a crash rate lower than the average statewide crash rate, identify other crash patterns (e.g. locations with crash concentrations, crash types, weather/road/light conditions, etc.). Identify any significant crash concentration locations (e.g. intersections or short sections of highway) or other crash patterns that might exist and explain the possible causes of the crashes. If no patterns are found, that should be stated so it is known that the crashes were examined.

4.0 Proposed Design Criteria

Any items listed under "Section 1.0 Project Description and Need, Sub-Section 1.4 Need for Project" should be resolved by the project proposal or this section should explain why the project cannot correct them.

4.1. Design Class - Indicate appropriate design class from:

- FDM 11-15-1, for rural new construction or reconstruction projects
- FDM 11-20-1, for urban new construction or reconstruction
- FDM 11-40-1, for rural and urban 3R projects
- FDM 11-44-1, for interstates 4R

4.2. Design Speed - Indicate design speeds and posted speeds pertinent to the various portions of the facility. Substandard features retained through exceptions to standards do not establish the design speed.

4.3. Design Criteria Outside of Desirable Standards - Identify all features for which either less-than-desirable but better than minimum or, where appropriate, greater-than-desirable design standards are

proposed. Document why design criteria outside the desirable values are proposed. Include the following information.

- The social / environmental factors and impacts involved.
 - Estimated cost to upgrade existing features to meet design standards criteria or estimated cost comparisons between different options using design criteria within or outside of design standards or both.
 - Review of crash history to assess the relative safety of existing roadway features.
 - Any other information necessary to justify the use of design criteria outside the range of desirable values.
 - Any mitigation measures proposed for use in conjunction with the less-than (or greater-than) desirable design criteria.
 - If bicycle and pedestrian facilities are not being proposed, the reasons for not providing the facilities documented in this section. The documentation must show that these facilities were initially pursued for the project but were later eliminated due to such factors as significant right-of-way constraints or community impacts, excessive costs to construct the facilities, complete lack of anticipated use (not uncommon for rural projects, especially sidewalks), refusal by a community to fund or agree to the maintenance of sidewalks.
- 4.4. Exceptions to Standards - Identify the number and types of features listed under the 13 Controlling Criteria list in [FDM 11-1-2](#) either outside of FDM minimum or maximum design criteria to be retained. If previously approved by Bureau of Project Development or FHWA, provide the date of their concurrence. If not previously approved, follow the steps outlined in [FDM 11-1-2](#) to develop a separate Exception to Standards Report and seek approval of any proposed exceptions to standards.

Certain 3R projects are covered by a Programmatic Exception to Standards Report (PESR). See [FDM 11-1-4](#) for more guidance. For 3R projects on the National Highway System, document any features that do not meet 3R standards. Specify the approximate type, location and magnitude of the non-complying features and state that the non-complying features are not a significant contributing factor in any Crash Type flags identified on the project. Also state that this makes the project eligible for the Programmatic Exception to Standards.

- 4.5. Typical Cross Section Elements Considered – On new construction and reconstruction projects, describe typical cross section elements considered and explain what was chosen and what was not and why. Some of the most common typical cross section elements to consider are number of driving lanes, paved shoulders, parking lanes, median or no median, median widths, turn lanes, two-way left turn lanes (TWLTLs), bicycle lanes or accommodations, sidewalks and terrace widths. For 3R projects, this section may be left blank. The extent of this section should be proportional to the magnitude of the project.

5.0 Proposed Design Improvement

The preferred method of providing the required geometric design information is on attached preliminary plan sheets. These sheets should label the following information:

- Mainline information: horizontal geometrics (radii, bearings, PI, deflections, etc.), vertical geometrics (curve lengths, k values, grades, vertical clearance under structures, etc.),
- Side road / intersection / interchange information: intersection angles, side-road alignments and profiles, lane widths, median widths, shoulder widths or curb & gutter type, turn lane information (widths, bay lengths and taper lengths).

If the information is shown and labeled on the proposed plan sheets, the same information is not required in the text or tables of the DSR.

- 5.1. Improvement Type - Provide the FIIPs Legislative program number and improvement program type definition (See [FDM 3-5-2](#) for improvement program type definitions).
- 5.2. Geometrics - Provide the information for the sections listed below on the attached plan sheets or as text/tables in the DSR.
- 5.2.1. Horizontal alignment - list any information not shown on the attached plan sheets
 - 5.2.2. Vertical alignment/stopping sight distance - list any information not shown on the attached plan sheets
 - 5.2.3. Grades* and Vertical Clearance - list any information not shown on the attached plan sheets

5.3. Side roads / Intersections / Interchanges -In locations where work is proposed at or along side-roads, provide the proposed side-road, intersection and interchange information shown below. Information is not needed at those locations where no work at or along side-roads is proposed (i.e. milling and resurfacing the mainline pavement across an intersection without any work along the side-road).

5.3.1. Sideroad information should include the roadway name, functional classification, design speed, design year traffic (AADT), design class, approach grades and pedestrian and bicycle facilities proposed. If design year traffic volumes are not known, state whether the AADT is assumed to be < 100 or > 100.

5.3.2. Intersection information should include names of intersecting roadways, intersection types [Rural (A1/A2/B1/B2/C/D), Urban, Roundabout, etc. as described in [FDM 11-25-1](#) and [FDM 11-26-1](#).], proposed intersection angles, proposed traffic control (2 or 4-way stop, signal, roundabout, etc.), stopping sight distance, intersection sight distance, vision triangles, and corner clearances to driveways.

5.3.3. Interchange information should include the names of intersecting roadways, interchange types (Diamond, Cloverleaf, etc. as described in [FDM 11-30-1](#)), ramp types (exit or entrance, tapered, parallel, collector/distributor, left handed ramps, etc.), ramp design speeds, ramp grades, Stopping Sight Distance, and Decision Sight Distance.

5.4. Roundabouts – State if the construction or reconstruction of a roundabout(s) is part of the recommended design. If so, then include the critical design parameters chart as an attachment to the DSR. See [FDM 11-26-20](#) for definitions of the parameters. A template of this chart is shown in [FDM 11-26-5](#), Table 1. The values to be shown are those determined at the 60% plan complete stage. This chart may be omitted if a roundabout is not part of the recommended design or there are no changes proposed in the geometric features of a pre-existing roundabout (e.g., for resurfacing or pavement replacement projects).

For projects including new construction or reconstruction of interchanges, state whether a roundabout was considered for the crossroad ramp terminal intersections. If it was not considered, state why not. For projects including the installation of traffic signals or the establishing of 4-way stop control at an intersection, explain how the roundabout alternative was evaluated and, if not chosen, why it was rejected.

5.5. Cross Section / Pavement Structure - Describe those features listed in [Attachment 1](#) or [Attachment 2](#). Provide types and thickness of pavement layers for both driving lanes and shoulders. Note what type of bicycle and pedestrian accommodation (paved shoulders, bicycle lanes, wide curb lanes, paths, sidewalks, etc.) are being provided. Discuss the project with the region bicycle and pedestrian coordinators for assistance on facility selection. (Click on the link for a map of the Region Bicycle / Pedestrian Coordinators.) <http://www.dot.wisconsin.gov/projects/state/docs/bike-ped-coordinators-map.pdf>

The information may either be described in the written text of the DSR or provided on an attached finished/proposed typical cross section. See [Attachment 3](#) for the format of information to be provided on attached typical cross sections.

5.6. Street Lighting - If street lighting is proposed for the project, describe its general location(s) and type and identify any breakaway requirements for light poles within the clear zone. (see [FDM 11-50-15](#))

5.7. Structures - Provide the information requested below for all structures on which work is to be completed on the project. Information is not required for existing structures on which no work is to be completed on the project.

5.7.1. Bridges – For each bridge structure provide the structure I.D. #, location, type, length, clear roadway width, number of spans, vertical clearance, horizontal clearance under the structure [and proposed improvement](#). Describe the proposed treatment of existing substandard bridges. Also address the inclusion and location of items such as pedestrian over-passes, and bicycle and pedestrian accommodations.

5.7.2. Box Culverts and Multiple Pipe Structures – For each box culvert or multiple pipe structure, provide the structure I.D. #, location, size/type, length, number of culverts or pipes [and proposed improvement](#). Also address the inclusion and location of items such as cattle passes, pedestrian under-passes and bicycle and pedestrian accommodations.

5.7.3. Retaining Walls and Noise Barrier Structures - For each retaining wall or noise barrier

- structure, provide structure I.D. #, location, type, length, height **and proposed improvement**.
- 5.7.4. Sign Bridge Structures – For each sign bridge structure, provide the structure I.D. #, location, type, length, clear roadway width, vertical clearance, horizontal clearance, clear zone width under the structure **and proposed improvement**.
- 5.7.5. Tunnel Structures – For each tunnel structure, provide the structure I.D. #, location, type (vehicular, bicycle, pedestrian, etc.) length, type of lighting, vertical clearance and horizontal clearance in the tunnel, safety features required (stand pipes, video surveillance, ventilation, call boxes, etc.) **and proposed improvement**. State what coordination has occurred with local emergency responders.
- 5.8. Permanent Traffic Control – Indicate whether permanent signs will be installed as part of the project. Indicate if non-standard sign layout details are needed. (Examples of signs needing layout details are large freeway/expressway guide signs and other signs with unique messages.)
- 5.9. Transportation Management Plan – Attach the Transportation Management Plan Documentation and Request for Approval Form as an attachment to the Design Study Report. [See FDM 11-50-5](#) for information on the content of the form, guidance on how to fill out the form and for a working copy of the form.
- 5.10. Safety Enhancements/Mitigation Measures - Describe features expected to improve safety and address crash patterns on the facility. Some of the more important features are increased lane widths, increased shoulder widths, wider clear zones, longer turning radii, intersections upgraded to higher types or roundabouts, safety barrier installation or upgrades, etc. Safety enhancements/mitigation measures must be addressed for all areas on the project where crash problems exist or where exceptions to standards are proposed.
- 5.11. Real Estate – If no real estate is required on the project then just state that.
- 5.11.1. If real estate is required on the project, then provide the R/W Plat I.D. #. If known, indicate general acreage to be acquired and whether permanent or temporary. Include easements and construction permits as well as fee acquisitions. If acreage is not known, provide some other indicator of the extent of acquisitions (i.e. strip takings). Indicate the number and type of relocations.
- 5.11.2. Describe encroachments and what is to be done about them in either the written text/table of the DSR or attach a list of encroachments to the DSR. Describe access control proposals, if applicable. (see [FDM 12-1-20](#))
- 5.12. Utilities – State whether the project is a Trans 220 utility project or not. Explain any unique or special design features that result from the need to accommodate any existing or planned utility facilities. Identify major utility agreements when required. A description of proposed utility locations need not be given unless they are unique or add significantly to the complexity of the project.
- 5.13. Railroads - Describe any improvements to railroad facilities needed. If a run-out lane is needed at the crossing, then provide a description of its design. Identify railroad agreements when required.
- 5.14. Financing and Scheduling – Provide construction ID #s, most recent project cost estimate, the type of funding and their percentages (Federal, State, Local, etc.), proposed time frame for construction, ties to other work or projects (tied contracts), description of Incentive/Disincentive clauses; and any major amounts of non-participating work.
- 5.15. Unique Project Features –
- 5.15.1. Hazardous Waste - Include a statement regarding known or potential hazardous waste areas required for construction. Describe proposed remediation efforts as well as any new or unusual products or techniques.
- 5.15.2. Environmental Commitments – Describe features incorporated due to historic, archeological, or other environmental commitments. Attach the Environmental Commitments Basic Sheet of the Environmental Screening Worksheets as an appendix to the DSR when applicable. Identify and describe the locations of environmentally sensitive areas and any unusual erosion control and storm water management measures.
- 5.15.3. Community Sensitive Design/Public Involvement - Describe any features to be incorporated into the project due to community sensitive design/public involvement coordination. Describe the results of the aesthetic and visual impact level analysis (Level A, B or C).

- 5.15.4. Value Engineering - Describe the results of any value engineering (V.E.) studies and what V.E. recommendations are to be incorporated on the project.

6.0 Synopsis

Provide completion/approval dates for the following. Provide other relevant information as needed.

- Concept Definition Report (see [FDM 3-5-1](#))
- Scoping Document (see [FDM 3-5-3](#))
- Public Involvement Plan (see [FDM 3-5-4](#))
- Final Aesthetic & Visual Level of Impact Worksheet (Provide level A, B or C) (see [FDM 3-5-4](#))
- Speed Limit Change Declaration (Required on all projects in which speed limit changes from existing posted speeds are proposed. See Region Traffic Section)
- Environmental document – Indicate document type (see [FDM 21-5-1](#))
- Public Hearing/Public Information Meetings (see [FDM 6-10-1](#) and [FDM 6-5-10](#))
- SHPO Involvement (see [FDM 5-10-5](#))
- DNR Involvement (see [FDM 5-10-1](#))
- Agriculture Impact Statement (see [FDM 5-10-30](#))
- Pavement Design Report (see [FDM 14-15-1](#))
- Roundabout Review (see [FDM 11-26-5](#))
- Transportation Management Plan (see [FDM 11-50-5](#))
- Permits Required - Indicate Type (e.g. 401,404) and expiration date. (see [FDM 21-30-1](#) and [FDM 21-30-5](#))
- Local Project Agreement(s) (see [FDM 3-20-1](#))
- Value Engineering Study (see [FDM 1-15-1](#))
- Status of Statutory Actions (e.g. STH change) - Indicate type of action and who approved or accomplished it. (see [FDM 4-5-1](#), [FDM 4-5-5](#), [FDM 4-5-10](#), and [FDM 4-5-15](#))

7.0 Attachments

- Project Location / Overview Map
- As-built Plan Sheet(s) (For 3R projects only)
- Existing Typical Cross Section(s)
- List of Encroachments (If applicable) (see [FDM 12-1-20](#))
- Programmatic Exceptions to Standards Screening Analysis (If applicable) (see [FDM 11-1-4](#))
- Traffic Forecast Report (see [FDM 3-10-10](#))
- Preliminary Plan Sheet(s)
- Critical Design Parameters Chart for each proposed roundabout (If applicable) (see [FDM 11-26-5](#))
- Finished / Proposed Typical Cross Section(s)
- Environmental Commitments Basic Sheet (If applicable) Include coordination letter (see [FDM 21-15-5](#))
- Transportation Management Plan Documentation and Request for Approval Form (see [FDM 11-50-5](#))

LIST OF ATTACHMENTS

[Attachment 1](#) Design Study Report Template

[Attachment 2](#) Abbreviated Design Study Report Template

[Attachment 3](#) Sample Cross Sections

SAMPLE TRANSMITTAL LETTER
(a working file of this template: [FDM 3-15-25, A1 doc1](#))

CORRESPONDENCE/MEMORANDUM _____ State of Wisconsin

Date: _____, 20__

To: _____
Director, Bureau of Project Development
Attn: (Project Services Chief)

From: _____
_____ Region

Subject: DESIGN STUDY REPORT
Project I.D. (design) _____
(STH, IH, USH (choose one)) _____,
Bridge # (if applicable) _____
_____ County

Having considered the economic and social effects of this project, its impact on the environment, and its consistency with the goals of community planning, we request your approval of the attached study report.

Region Project Development Chief _____ Date

Concur:

Bureau of Project Development, _____ Date
Project Services Chief

SAMPLE TRANSMITTAL LETTER

CORRESPONDENCE/MEMORANDUM _____ **State of Wisconsin**

Date: _____, 20__

To: _____
Director, Bureau of Project Development
Attn: (Local Program Management Chief)

From: _____
_____ - Local Program Management Consultant

Subject: DESIGN STUDY REPORT
Project I.D. (design) _____
(CTH, Local (choose one)) _____,
Bridge # (if applicable)
_____ County

Having considered the economic and social effects of this project, its impact on the environment, and its consistency with the goals of community planning, we request your approval of the attached study report.

Local Program Management Consultant Date

Concur:

Bureau of Project Development, Date
Local Program Management Chief

SAMPLE TITLE SHEET

DESIGN STUDY REPORT

Project I.D. (design) _____

(STH, IH, USH, CTH, Local (choose one)) _____,

Bridge # (if applicable) _____

_____ County

CONSULTANT'S
SEAL

DESIGN STUDY REPORT

1.0 Project Description and Need

1.1. Federal Oversight Project (Yes or No) _____

1.2. PROJECT LENGTH & TERMINI

Project Length: _____

Termini/Limits: _____

1.3. FUNCTIONAL CLASSIFICATION/ACCESS CONTROL

Roadway Name	Funct. Class (Arterial, Collector or Local)	Rural, Urban or Transitional	Corridors 2020 or Backbone (No or State which)	NHS Route (Yes or No)	Long Truck Route (No or state Federal or State)	Access Control Tier	On Ped Trans. Plan (Yes or No)	On Bike Trans. Plan (Yes or No)

1.4.NEED FOR PROJECT

2.0 PRESENT FACILITY

2.1.POSTED SPEED

Roadway or Roadway Segment	Posted Speed	Advisory Speed

2.2.GEOMETRICS

2.2.1. * Horizontal Alignment Features Outside of Desirable or Minimum Design Standards.

* Horizontal Feature (Curve, P.I. Def., etc.)	Location (Stationing)	* Size (Radius, P.I. Deflection, etc.)*	* Super-Elevation (s.e.)	Speed Rating

*Controlling Criteria

Comments: _____

2.3.3 Interchanges

Intersecting Roadway Names	Inter. Type	Ramp Types	Ramp Design Speed	Horiz. Curve on Ramp	Vert. Curve on Ramp	Ramp Grades	* SSD** [(Met (Y/N) / Length]	DSD** [Met (Y/N) / Length]

*Controlling Criteria

**SSD = Stopping Sight Distance & DSD = Decision Sight Distance (See FDM 11-25-1).

Comments: _____

2.4 CROSS SECTION

Number of roadways. _____
 Number of lanes. _____
 Median width. _____
 * Lane width. _____
 * Shoulder width (Total and Paved or Curb & Gutter). _____
 Bicycle Facility Type _____
 Sidewalk and curb ramps _____
 * Cross slope. _____
 * Super-elevation. _____
 * Horizontal clearance. _____
 Clear Zone _____
 * Vertical clearance. _____
 Side-slopes and Ditch sections _____

*Controlling Criteria

2.5 PAVEMENT STRUCTURE/CONDITION

Roadway	Pavement Types & Thicknesses	Physical Description

2.6 RIGHT OF WAY

2.6.1 Encroachments

Location (Station & Distance Left or Right)	Encroachment Type

2.6.2 Unique Right of Way Issues: _____

2.7 STRUCTURES

Existing Structure I.D. #	Feature Crossed	Structure Type	Suff. Rating	* Clear Rdwy. Width	Railing Type	* Struct. Deficient or Funct. Obsolete	* Inventory Load Rating

*Controlling Criteria

Comments: _____

2.8 UTILITIES

Utility Name	Type of Utility	General Location	Underground/ Overhead/Both

Comments: _____

2.9 RAILROAD CROSSINGS

Location (Sta.)	Railroad Name	No. of Tracks	Function	Crossing Type

Comments: _____

2.10 SPECIAL SOILS CONDITIONS

2.11 UNIQUE PROJECT FEATURES

3.0 TRAFFIC

3.1 TRAFFIC VOLUMES/CONDITIONS

3.1.1 See attached Traffic Forecast Report - Attachment ____

3.1.2 Highway Capacity Analysis

Location (Roadway Segment or Intersection)	Existing Level of Service	Design Year Level of Service Under Existing Roadway	Design Year Level of Service Under Proposed Roadway

Comments: _____

3.2 CRASH ANALYSIS

3.2.1 Project Crash Information

Roadway	Crash Rate ⁽¹⁾ (Year.)	Statewide Crash Rate ⁽¹⁾ (Year)	Number & Severity of Crashes			
			Fatal	Injury	Property Damage	Total No. Crashes

⁽¹⁾ Crash rate based on 100 million vehicles miles traveled (100 MVMT)

Comments: _____

3.2.2 Significant Crash Locations or Patterns

Location or Pattern	Year	Number & Severity of Crashes				Crash Rate ⁽²⁾	Possible Factors Contributing to Crashes
		Fatal	Injury	Property Damage	Total		

⁽²⁾ Crashes per million entering vehicles (MEV)

Comments: _____

4.0 PROPOSED DESIGN CRITERIA

4.1 DESIGN CLASS

Roadway or Roadway Segment	Design Class

4.2 * DESIGN SPEED

Roadway or Roadway Segment	Design Speed	Posted Speed

* Controlling Criteria

4.3 DESIGN CRITERIA OUTSIDE OF DESIRABLE STANDARDS

4.4 EXCEPTIONS TO STANDARDS

The following substandard geometric features will remain in place after this 3R project.****

Feature Type	Location		Magnitude
	From RP	To RP	

These substandard features are located on highway segments containing no flags or only Crash Type Flags. These features do not contribute significantly to the crash situation on these segments of highway so these highway segments are covered by the Programmatic Exception to Standards.

**** This documentation is required only for 3R projects on the National Highway System.

4.5 TYPICAL CROSS SECTION ELEMENTS CONSIDERED

5.0 PROPOSED DESIGN IMPROVEMENT

5.1 IMPROVEMENT TYPE

5.2 GEOMETRICS

5.2.1 * Horizontal alignment

5.2.2 * Vertical alignment/Stopping sight distance

5.2.3 * Grades

* Controlling Criteria

5.3 SIDEROADS/INTERSECTIONS/INTERCHANGES

5.3.1 Side-roads

Roadway Name	Functional Class	Design Speed (MPH)	Design Year Traffic (AADT)	Design Class	Approach Grades	Ped. Facilities (Y / N)	Bike Facilities (Y / N)

Comments: _____

5.3.2 Intersections

Intersecting Roadway Names	Inter. Type	* Inter. Angle	Traffic Control	* SSD** Met [(Y/N) / Length]	ISD** Met [(Y/N) / Length]	Vision Triangles Proposed (Y / N)	Corner Clearance To Driveways Met (Y / N)

* Controlling Criteria

**SSD = Stopping Sight Distance & ISD = Intersection Sight Distance (See FDM 11-25-1).

Comments: _____

5.3.3 Interchanges

Name of Intersecting Roadways	Interchange Type	Ramp Type	Ramp Design Speed	Ramp Grades	* SSD** Met [(Y/N) / Length]	DSD** Met [(Y/N) / Length]	Vision Triangle (Yes or No)

* Controlling Criteria

**SSD = Stopping Sight Distance & DSD = Decision Sight Distance (See FDM 11—25-1).

Comments: _____

5.4 Roundabouts

5.5 CROSS SECTION/PAVEMENT STRUCTURE

Number of roadways _____

Number of lanes _____

Median width/Type _____

* Lane width/Type (Driving, Parking, Bike Lane, etc.) _____

* Shoulder width (Total & Paved or Curb & Gutter) _____

Bike facilities proposed _____

Pedestrian facilities / sidewalk proposed _____

* Cross slope _____

* Superelevation _____

* Horizontal clearance _____

* Vertical clearance _____

Pavement Structure _____

Clear Zone _____

Side-slope / Ditch Sections _____

* Controlling Criteria

5.6 STREET LIGHTING

Location	Type	Break-away Requirements

5.7 STRUCTURES

5.7.1 Bridge Structures

Structure I.D. #	Location	Structure Type	Length	* Clear Width	No. of Spans	* Vert. Clearance	* Horiz. Clearance
Proposed Improvement:							
Proposed Improvement:							
Proposed Improvement:							

* Controlling Criteria

Comments: _____

5.7.2 Box Culverts and Multiple Pipe Structures

Structure I.D. #	Location	Type	Length	No. Pipes
	Proposed Improvement:			
	Proposed Improvement:			

Comments: _____

5.7.3 Retaining Walls and Noise Barrier Structures

Structure I.D. #	Location	Type	Length	Height
	Proposed Improvement:			
	Proposed Improvement:			

Comments: _____

5.7.4 Sign Bridge Structures

Structure I.D. #	Location	Type	Length	Clear Rdwy. Width	* Vertical Clearance	* Horizontal Clearance	Clear Zone Under
	Proposed Improvement:						
	Proposed Improvement:						

* Controlling Criteria

Comments: _____

5.7.5 Tunnel Structures

Structure I.D. #	Location	Type (Veh., Ped., Bicycle, etc.)	Length	Lighting Type	* Vertical Clearance	* Horizontal Clearance
	Safety Features			Coordination with Local Emergency Responders		
	Proposed Improvement:					
	Safety Features			Coordination with Local Emergency Responders		
	Proposed Improvement:					

* Controlling Criteria

Comments: _____

5.8 PERMANENT TRAFFIC CONTROL

Will permanent signs be installed (Yes or No)? _____

Are non-standard sign layout details needed (Yes or no)? _____

Comments: _____

5.9 TRANSPORTATION MANAGEMENT PLAN

See the Transportation Management Plan Attachment _____

5.10 SAFETY ENHANCEMENTS/MITIGATION MEASURES

5.11 REAL ESTATE

5.11.1 Real Estate Acquisition

Plat I.D.:

Type	Relocations No.	Land (Acres)	Permanent Easements	Temporary Easements	Construction Permits

Comments: _____

5.11.2 Encroachment Actions

Encroachment Location	Encroachment Type	What is to be Done? (Removed, Revocable Permit, etc.)

Comments: _____

5.12 UTILITIES

Is Project Trans 220 Utility Project (Yes or No)? _____

Describe any special design features to accommodate utilities: _____

Major Utility Agreements: _____

Comments: _____

5.13 RAILROADS

Describe improvements to Railroad Facilities: _____

Railroad Agreements: _____

Comments: _____

5.14 FINANCING AND SCHEDULING

Construct. I.D.	Cost Estimate	Type of Funding			Proposed Timeframe For Construction	Ties to Other Work or Projects	Incentive/Disincentive Clauses (Yes or No)
		% Fed.	% State	% Local			

Describe Incentive/Disincentive Clauses: _____

Non-participating Work: _____

5.15 UNIQUE OR NON-STANDARD FEATURES

5.15.1 Hazardous Waste

5.15.2 Environmental Commitments

5.15.3 Community Sensitive Design/Public Involvement

5.15.4 Value Engineering

6.0 SYNOPSIS

	Completion/Approval Dates	Status of Coordination or Other Information as Needed
Concept Definition Report		
Scoping Document		
Public Involvement Plan		
Final Aesthetic & Visual Level of Impact Worksheet		
Speed Limit Change Declaration		
Environmental Document (Type:)		
Public Hearing/Public Information Meetings		
SHPO Involvement		
DNR Involvement		

Agricultural Impact Statement		
Pavement Design Report		
Roundabout Review		
Transportation Management Plan (Type:)		
Permits Required (Types:)		
Local Project Agreements		
Value Engineering Study		
Status of Statutory Actions		

7.0 ATTACHMENTS

- Project Location/Overview Map
- As-built Plan Sheet(s) (For 3R projects only)
- Existing Typical Cross Section(s)
- List of encroachments (If applicable)
- Programmatic Exceptions to Standards Screening Analysis (If applicable)
- Traffic Forecast Report
- Preliminary Plan Sheet(s)
- Critical Design Parameters Chart for each roundabout proposed (If applicable)
- Finished/Proposed Typical Cross Section(s)
- Environmental Commitments Basic Sheet (if applicable) (include coordination letters)
- Transportation Management Plan Documentation and Request for Approval Form

SAMPLE TRANSMITTAL LETTER
(a working file of this template: [FDM 3-15-25, A2 doc1](#))

CORRESPONDENCE/MEMORANDUM _____ State of Wisconsin

Date: _____, 20__

To: _____
Director, Bureau of Project Development
Attn: (Project Services Chief)

From: _____
_____ Region

Subject: **ABBREVIATED** DESIGN STUDY REPORT
Project I.D. (design) _____
(STH, IH, USH (choose one)) _____,
Bridge # (if applicable) _____
_____ County

Having considered the economic and social effects of this project, its impact on the environment, and its consistency with the goals of community planning, we request your approval of the attached study report.

Region Project Development Chief _____ Date

Concur:

Bureau of Project Development, _____ Date
Project Services Chief

SAMPLE TRANSMITTAL LETTER

CORRESPONDENCE/MEMORANDUM _____ **State of Wisconsin**

Date: _____, 20__

To: _____
Director, Bureau of Project Development
Attn: (Local Program Management Chief)

From: _____
_____ - Local Program Management Consultant

Subject: **ABBREVIATED** DESIGN STUDY REPORT
Project I.D. (design) _____
(CTH, Local (choose one)) _____,
Bridge # (if applicable)
_____ County

Having considered the economic and social effects of this project, its impact on the environment, and its consistency with the goals of community planning, we request your approval of the attached study report.

Local Program Management Consultant Date

Concur:

Bureau of Project Development, Date
Local Program Management Chief

SAMPLE TITLE SHEET

ABBREVIATED DESIGN STUDY REPORT

Project I.D. (design) _____

(STH, IH, USH, CTH, Local (choose one)) _____,

Bridge # (if applicable) _____

_____ County

CONSULTANT'S
SEAL

ABBREVIATED DESIGN STUDY REPORT

1.0 Project Description and Need

1.1. Federal Oversight Project (Yes or No) _____

1.2. PROJECT LENGTH & TERMINI

Project Length: _____

Termini/Limits: _____

1.3. FUNCTIONAL CLASSIFICATION/ACCESS CONTROL

Roadway Name	Funct. Class (Arterial, Collector or Local)	Rural, Urban or Transitional	Corridors 2020 or Backbone (No or State which)	NHS Route (Yes or No)	Long Truck Route (No or state Federal or State)	Access Control Tier	On Ped Trans. Plan (Yes or No)	On Bike Trans. Plan (Yes or No)

1.4.NEED FOR PROJECT

2.0 PRESENT FACILITY

2.1.POSTED SPEED

Roadway or Roadway Segment	Posted Speed	Advisory Speed

2.2.3 * Vertical Clearance Outside of Desirable or Minimum Design Standards.

Location (Stationing, Overpass Structures., etc.)	* Vertical Clearance

*Controlling Criteria

Comments: _____

2.4 CROSS SECTION

Number of roadways. _____

Number of lanes. _____

Median width. _____

* Lane width. _____

* Shoulder width (Total and Paved or Curb & Gutter). _____

Bicycle Facility Type _____

Sidewalk and curb ramps _____

* Cross slope. _____

- * Super-elevation. _____
- * Horizontal clearance. _____
- Clear Zone _____
- * Vertical clearance. _____
- Side-slopes and Ditch sections _____
- *Controlling Criteria _____

2.5 PAVEMENT STRUCTURE/CONDITION

Roadway	Pavement Types & Thicknesses	Physical Description

2.7 STRUCTURES

Existing Structure I.D. #	Feature Crossed	Structure Type	Suff. Rating	* Clear Rdwy. Width	Railing Type	* Struct. Deficient or Funct. Obsolete	* Inventory Load Rating

*Controlling Criteria
 Comments: _____

2.8 UTILITIES

Utility Name	Type of Utility	General Location	Underground/Overhead/Both

Comments: _____

2.9 RAILROAD CROSSINGS

Location (Sta.)	Railroad Name	No. of Tracks	Function	Crossing Type

Comments: _____

2.11 UNIQUE PROJECT FEATURES

3.0 TRAFFIC

3.1 TRAFFIC VOLUMES/CONDITIONS

3.1.1 The existing Average Annual Daily Traffic (AADT) volume is _____

3.1.2 Highway Capacity Analysis

Location (Roadway Segment or Intersection)	Existing Level of Service	Construction Year Level of Service	Construction Year + 10 Level of Service

Comments: _____

3.2 CRASH ANALYSIS

3.2.1 Project Crash Information

Roadway	Crash Rate ⁽¹⁾ (Year.)	Statewide Crash Rate ⁽¹⁾ (Year)	Number & Severity of Crashes			
			Fatal	Injury	Property Damage	Total No. Crashes

⁽¹⁾ Crash rate based on 100 million vehicles miles traveled (100 MVMT)

Comments: _____

5.0 PROPOSED DESIGN IMPROVEMENT

5.1 IMPROVEMENT TYPE

5.5 CROSS SECTION/PAVEMENT STRUCTURE

- Number of roadways _____
- Number of lanes _____
- Median width/Type _____
- * Lane width/Type (Driving, Parking, Bike Lane, etc.) _____
- * Shoulder width (Total & Paved or Curb & Gutter) _____
- Bike facilities _____
- Pedestrian facilities / sidewalk _____
- * Cross slope _____
- * Superelevation _____
- * Horizontal clearance _____

* Vertical clearance _____
 Pavement Structure _____
 Clear Zone _____
 Side-slope / Ditch Sections _____

* Controlling Criteria

5.6 STREET LIGHTING

Location	Type	Break-away Requirements

5.7 STRUCTURES

5.7.1 Bridge Structures

Structure I.D. #	Location	Structure Type	Length	* Clear Width	No. of Spans	* Vert. Clearance	* Horiz. Clearance
	Proposed Improvement:						
	Proposed Improvement:						
	Proposed Improvement:						

* Controlling Criteria

Comments: _____

5.7.2 Box Culverts and Multiple Pipe Structures

Structure I.D. #	Location	Type	Length	No. Pipes
	Proposed Improvement:			
	Proposed Improvement:			

Comments: _____

5.7.3 Retaining Walls and Noise Barrier Structures

Structure I.D. #	Location	Type	Length	Height
	Proposed Improvement:			
	Proposed Improvement:			

Comments: _____

5.7.4 Sign Bridge Structures

Structure I.D. #	Location	Type	Length	Clear Rdwy. Width	* Vertical Clearance	* Horizontal Clearance	Clear Zone Under
Proposed Improvement:							
Proposed Improvement:							

* Controlling Criteria

Comments: _____

5.7.5 Tunnel Structures

Structure I.D. #	Location	Type (Veh., Ped., Bicycle, etc.)	Length	Lighting Type	* Vertical Clearance	* Horizontal Clearance
Proposed Improvement:						
Proposed Improvement:						

Proposed Improvement:						
Proposed Improvement:						

* Controlling Criteria

Comments: _____

5.8 PERMANENT TRAFFIC CONTROL

Will permanent signs be installed (Yes or No)? _____

Are non-standard sign layout details needed (Yes or no)? _____

Comments: _____

5.9 TRANSPORTATION MANAGEMENT PLAN

See the Transportation Management Plan Attachment _____

5.10 SAFETY ENHANCEMENTS/MITIGATION MEASURES

5.12 UTILITIES

Is Project Trans 220 Utility Project (Yes or No)? _____

Describe any special design features to accommodate utilities: _____

Major Utility Agreements: _____

Comments: _____

5.13 RAILROADS

Describe improvements to Railroad Facilities: _____

Railroad Agreements: _____

Comments: _____

5.14 FINANCING AND SCHEDULING

Construct. I.D.	Cost Estimate	Type of Funding			Proposed Timeframe For Construction	Ties to Other Work or Projects	Incentive/Disincentive Clauses (Yes or No)
		% Fed.	% State	% Local			

Describe Incentive/Disincentive Clauses: _____

Non-participating Work: _____

5.15 UNIQUE OR NON-STANDARD FEATURES

5.15.1 Hazardous Waste

5.15.2 Environmental Commitments

5.15.3 Community Sensitive Design/Public Involvement

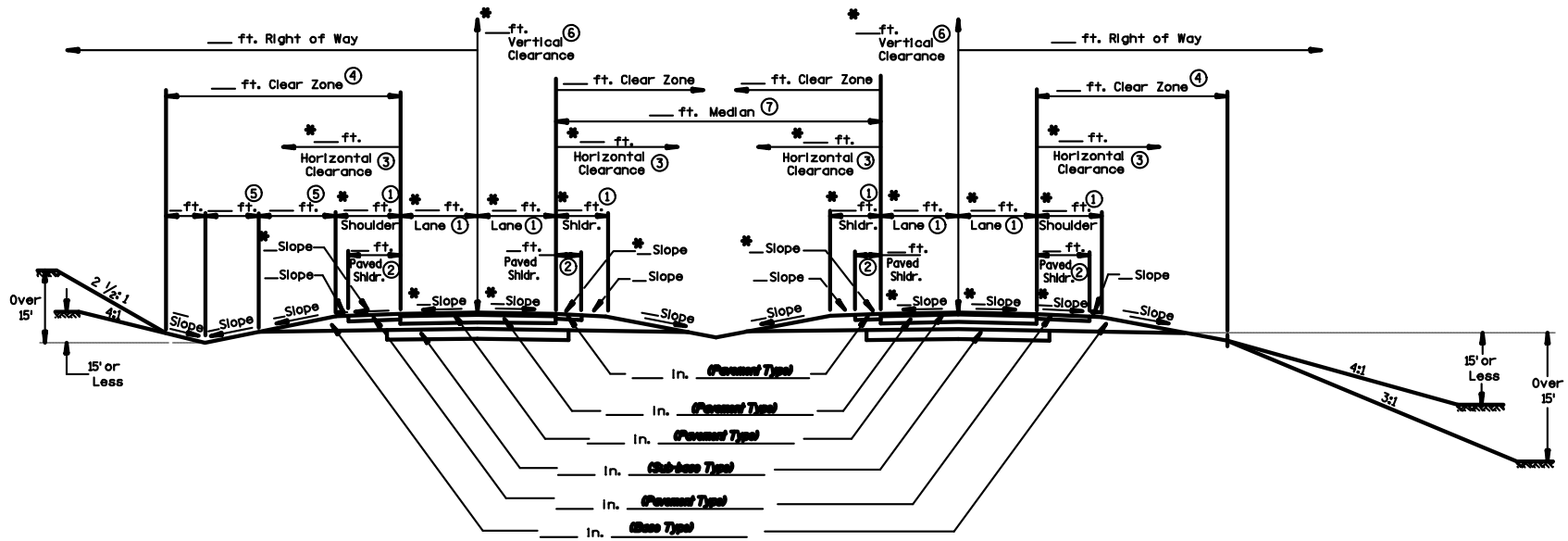
6.0 SYNOPSIS

	Completion/Approval Dates	Status of Coordination or Other Information as Needed
Concept Definition Report		
Scoping Document		
Public Involvement Plan		
Environmental Document (Type:)		
Public Information Meetings		
SHPO Involvement		
DNR Involvement		
Transportation Management Plan (Type:)		

Permits Required (Types:)		
Local Project Agreements		
Status of Statutory Actions		

7.0 ATTACHMENTS

- Project Location/Overview Map
- Existing Typical Cross Section(s)
- Programmatic Exceptions to Standards Screening Analysis (If applicable)
- Preliminary Plan Sheet(s)
- Finished/Proposed Typical Cross Section(s)
- Environmental Commitments Basic Sheet (if applicable) (include coordination letters)
- Transportation Management Plan Documentation and Request for Approval Form



(EXISTING OR PROPOSED) CROSS SECTION FOR (ROADWAY NAME)

Sta. _____ to Sta. _____

Improvement Type: _____

Design Class: **A3**

* CONTROLLING CRITERIA

- ① SEE FDM 11-15-1, FIGURES 1-4 AND 17-19 AND FDM 11-40-2.
- ② SEE FDM 11-15-1, FIGURE 5 OR FDM 11-40-2, TABLE 1.
- ③ SEE FDM 11-15-1, TABLE 1.
- ④ SEE FDM 11-15-1, FIGURES 9-12.
- ⑤ SEE FDM 11-15-1, FIGURE 7.
- ⑥ SEE FDM 11-35-1, FIGURES 8 AND 9.
- ⑦ SEE FDM 11-15-1, MEDIAN SECTION AND FDM 11-45-1 MEDIAN BARRIER SECTION.

** 6 AND 8 LANE SIMILAR

4-LANE RURAL CROSS SECTION
DESIGN CLASS A3**

