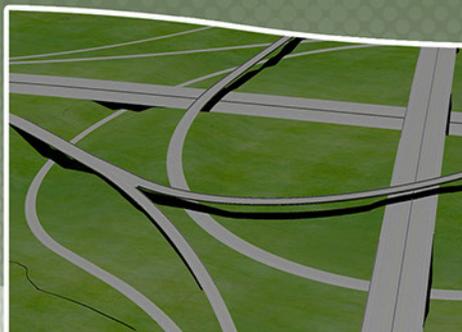




Project Development Process Manual

Guidelines for Implementing
Iowa Department of Transportation's
Project Development Process



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Revised 2013



PREFACE

This Project Development Process Manual replaces the 2002 Can-Do Reference Manual. This manual is intended to provide Iowa Department of Transportation (Iowa DOT) personnel with an overview of the project development process (Chapter 1) as well as guidance on several specific parts of the process (Chapters 2 through 8). The manual may also be used by Local Public Agencies (LPAs) and consultants to assist them in navigating the project development process. Because the manual will likely be used when readers are looking for information on a specific part of the project development process rather than read from beginning to end, each chapter is designed to stand alone; therefore, acronyms are redefined at their first use in each chapter.

The electronic version of this manual contains several features to help users navigate its contents:

- Table of contents – Each line in the table of contents is linked to the respective chapter, section, table, figure, and appendix. Click on any item in the table of contents to go to that location in the document.
- Internal links – Each chapter of the manual contains links, indicated by blue type, to key terms, project development event codes, and cross-referenced chapters, sections, and appendices, as follows:
 - Key terms – Key terms are linked to their definitions in the glossary the first time that a term is used in each chapter. Click on a term in blue to go to the corresponding term and definition in Chapter 9, Glossary.
 - Project development event codes – Project development event codes are linked to the event descriptions in Chapter 2, Project Development Scheduling. Click on an event code in blue to go to the corresponding event description in Chapter 2.
 - Cross-references – References to chapters, sections, and appendices within the manual are linked to the respective portion of the manual. Click on a cross-reference in blue to go to that location in the document.
- External links – Some chapters of the manual contains links, indicated by blue type, to additional resources and websites, as follows:
 - Other Iowa DOT resources – References to other Iowa DOT publications and web pages are linked to the respective document or website. Click on a document title or other reference in blue to go to that document or location on Iowa DOT’s Intranet.
 - External websites – References to external websites, including Federal Highway Administration (FHWA) resources, are linked to the respective document or website. Click on a document title or URL in blue to go to that document or location on the Internet.

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ABBREVIATIONS, ACRONYMS, AND SHORT FORMS

3R	resurfacing, restoration, and rehabilitation
4R	resurfacing, restoration, rehabilitation, and reconstruction
AASHTO	American Association of State Highway and Transportation Officials
AC	Advancement Candidates
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act of 1990
ADE	Assistant District Engineer
ADT	average daily traffic
APE	area of potential effect
BRF	Bridge Replacement Funds
CAAA	Clean Air Act Amendments of 1990
CADD	computer-aided design/drafting
CAG	citizen advisory group
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIN	Commercial and Industrial Network
Commission	Iowa Transportation Commission
CPP	concurrence point process
CSD	context-sensitive design
CSS	context-sensitive solutions
DCE	District Construction Engineer
DDIR	Detailed Damage Inspection Reports
DE	District Engineer
Design	Office of Design
DMM	District Maintenance Manager
DMS	Dynamic Message Sign
DMT	design management team
DOT	(state) Department of Transportation
DRP	data recovery plan
DTM	digital terrain model
E&C	Emergency and Contingency

EA	Environmental Assessment
ECC	Environmental Concurrence Coordinator
EIS	Environmental Impact Statement
EJ	environmental justice
EPA	Environmental Protection Agency
ER	emergency relief
ERMS	Electronic Records Management System
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FHWA	(U.S. Department of Transportation) Federal Highway Administration
Five-Year Program	Five-Year Transportation Improvement Program
FONSI	Finding of No Significant Impact
FR	Federal Register
FTA	Federal Transit Administration
GIS	Geographic Information Systems
GPS	global positioning system
Green Book	<i>A Policy on the Geometric Design of Highways and Streets</i> , published by the American Association of State Highway and Transportation Officials
GUI	Graphical User Interface
HBP	Highway Bridge Program
HDMT	Highway Division Management Team
HSIP	Highway Safety Improvement Program
IAC	Iowa Administrative Code
IJL	interchange justification letter
IJR	interchange justification report
IOR	interchange operations report
Iowa DNR	Iowa Department of Natural Resources
Iowa DOT	Iowa Department of Transportation
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation System
LEP	Persons of Limited English Proficiency
LiDAR	Light Detection and Ranging
LOS	level of service
LPA	Local Public Agency
LRTP	long range transportation plan

MB	Maintenance Bridge
MOA	memorandum of agreement
MP	maintenance program
MPIN	Maintenance Program, Interstate - Nonparticipating
MPO	metropolitan planning organization
NAAQS	National Ambient Air Quality Standards
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act of 1969, as amended
NHS	National Highway System
NOA	notice of availability
NOI	notice of intent (to prepare an EIS)
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OBS	Office of Bridges & Structures
OLE	Office of Location & Environment
PA	Programmatic Agreement
PAC	Potential advancement candidate
PAT	Project Advisory Team
PCE	Programmatic Categorical Exclusion
PH	public hearing
PIM	public information meeting
PIP	public involvement plan
PM	Project Manager
PMT	Project Management Team
PPM	(Iowa DOT) Policies and Procedures Manual
PSE	Project Scheduling Engineer
PSS	Project Scheduling System
Pub. L.	Public Law
Q sheets	soils plan and profile sheets
QA/QC	quality assurance/quality control
R sheets	borrow sheets
ROD	Record of Decision
ROW	Office of Right of Way
RPA	regional planning affiliation

RWIS	Road Weather Information System
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
Section 106	Section 106 of the National Historic Preservation Act of 1966, as amended
Section 404	Section 404 of the Clean Water Act of 1948, as amended
SFY	state fiscal year
SHPO	State Historic Preservation Office
SI&A	sufficiency inventory and appraisal
SIA	Statewide Implementation Agreement
State	State of Iowa
STIP	state transportation improvement program
T&S	Office of Traffic & Safety
TIP	transportation improvement program
TMA	transportation management area
TMP	Transportation Management Plan
TS&L	type, size, and location
TSIP	Traffic Safety Improvement Program
UAC	use as constructed
USACE	United States Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
VE	value engineering

Chapter 1

Introduction

CHAPTER 1

INTRODUCTION

In the mid 1990s, the Iowa Department of Transportation (Iowa DOT) [Highway Division Management Team \(HDMT\)](#) chartered a team to re-engineer and streamline the [development of projects](#) from [concept](#) to contract. The result of that work, dubbed “Can-Do,” provided a single development process for all projects, and implementation of that process was approved in 1998. The re-engineered [project development process](#) was institutionalized in 2002 when Policies and Procedures Manual (PPM) 500.02 was adopted. Since 2002, the project development process has evolved. Therefore, in 2012, the process was reviewed, and this manual was edited to reflect additions to project scheduling and modifications to other parts of the project development process.

1.1 PURPOSE

In the original charter, the purpose was threefold:

- To re-engineer the project development process with the goal of reducing development time while maintaining the integrity and quality of the process.
- To facilitate cooperation between Iowa DOT and resource agencies.
- To merge compliance with the [National Environmental Policy Act \(NEPA\)](#) and Section 404 of the Clean Water Act (Section 404) as part of the federal streamlining initiative (see [Chapter 8, Statewide Implementation Agreement and Concurrence Point Process](#), for details on merging the NEPA/404 compliance processes for highway projects in Iowa).¹

The resulting project development process specifically addressed all [Type I](#) and some [Type II projects](#),² which often require detailed [environmental](#) documents,³ because these are the most complex projects and encompass all facets of the development process. While Type I and Type II projects were the focus, the project development process can be used to develop less complex projects as well.

The goal of the project development process is to reduce development time while maintaining the integrity and quality of the process.

¹ The *NEPA process* refers to the development of a full and fair discussion of the social, economic, and environmental issues associated with a proposed project and its reasonable alternatives (40 CFR 1500 et seq.). Its purpose is to ensure that the policies and goals defined in NEPA are infused into the ongoing programs and actions of the federal government. The [Section 404 process](#) refers to the permitting of a project involving discharge of dredged or fill material into [waters of the United States](#). The permitting of such a project is subject to provisions of Section 404 of the Clean Water Act (33 USC 1344).

² A Type I project is a major change, and a Type II project is a minor change. See [Chapter 9, Glossary](#), for definitions of [Type I, II, and III projects](#) and [Chapter 3, How a Project is Initiated](#), for additional discussion of project types. The major difference between types is the point at which a project enters the timeline and the question of whether a formal [Project Management Team](#) is needed.

³ Specifically, an [Environmental Assessment](#) or [Environmental Impact Statement](#); [Categorical Exclusions](#) are not necessarily included in this group.

1.2 PRINCIPLES

The implementation of the re-engineered project development process created a new development philosophy based on the conviction that a better end product will result from application of the following principles:

1. Multidisciplinary project management
2. Iowa DOT district leadership
3. Early problem identification
4. Uniform, integrated development process
5. Avoidance of environmental impacts
6. **Context-sensitive solutions**, including context-sensitive design
7. Proactive **stakeholder** involvement and consensus building
8. Merged compliance with NEPA and Section 404 requirements

These principles overlap and reinforce one another, resulting in a holistic approach. The process emphasizes flexibility through application of these principles, discussed individually below.

1.2.1 Multidisciplinary Project Management

The focal point of the project development process is the multidisciplinary Project Management Team (PMT). Each PMT consists of experts and decision makers in all relevant major planning and development disciplines, who are brought together early in the project planning phase.

The District Engineer (DE) establishes the PMT by contacting the directors of the Offices of Design (Design), Bridges & Structures (OBS), Location & Environment (OLE), Traffic & Safety (T&S), and Right of Way (ROW). PMT membership includes the following:

- *Iowa DOT district* – DE, District Planner, Assistant District Engineer (ADE)
- *Design*⁴ – design project engineer and design staff
- *OBS*⁴ – design section engineer, design staff, and consultant (for outsourced projects)
- *OLE*⁴ – depending on the project and phase of development, representation could be the location engineer and senior location design technician, or NEPA document manager, or water resources manager
- *T&S*⁴ – depending on the project, representation could be one of the following: Transportation Safety section representative, Access Policy coordinator, Utility Accommodation coordinator, Traffic Engineering section representative, or Work Zone Safety engineer
- *ROW* – ROW operations manager

The focal point of the project development process is the multidisciplinary Project Management Team.

Representatives from other sections within these offices or other Iowa DOT offices may fill a supporting role or serve as resources for the PMT (see [Section 5.2.3, Support Functions](#)).

⁴ Depending on the project, the level of involvement of the office can range from a supportive role to a major role or to the lead role, including establishment of the PMT.

Federal Highway Administration (FHWA) Iowa Division will participate in PMTs in accordance with the *Federal-aid Highway Program Stewardship and Oversight Agreement* between Iowa DOT and FHWA Iowa Division (see [Section 5.2.5, FHWA Iowa Division](#)).

With oversight from the district, the PMT has full responsibility for managing a project. Day-to-day management is led by the assigned Project Manager (PM) from Design, OBS, or OLE. The PMT is charged with developing a quality, constructible project as follows:

- Evaluate the project.
- Identify issues and develop solutions collaboratively and collectively.
- Provide continuous guidance and ownership—from project planning through construction.
- Establish an appropriate schedule (see [Chapter 2, Project Development Scheduling](#), for a description of the basic tasks and [Appendix A, Project Development Gantt Charts](#), for a typical development schedule).
- Keep the project on time and on budget throughout the development process.
- Build on previous work.
- Identify project resource needs and work with Iowa DOT office directors to schedule those resources when needed.
- Develop the project from the bottom up, with the goal of zero rework.

Each Type I and Type II project that requires an environmental document and additional [right of way](#) is assigned to a PMT. For all other projects (that is, Type II and III projects not requiring an environmental document or right of way), Design or OBS determines whether a PMT is necessary and, if so, establishes one consisting of individuals from the district; Design or OBS, ROW, and OLE; and other offices as appropriate.

For more detail on the roles and responsibilities of the PMT, see [Chapter 5, Guidance for PMTs](#).

1.2.2 Iowa DOT District Leadership

The project development process was built around district leadership because moving project oversight to the districts moves [project development](#) closer to the customer and those most familiar with customer needs.

The districts have a major role in managing project development and lead the involvement with the general public and other project stakeholders, as follows:

- The DE is ultimately responsible for implementation of the project development process. The DE ensures that PMTs are established for all planning studies and projects requiring an environmental document and that all process steps are accomplished.
- The district is involved in the development of a project concept to ensure that specific transportation needs are met.
- The district, to varying degrees, manages project development through letting. Typically, the district planner leads the team for planning and pre-location activities, and the ADE leads the team as the project moves into design.

The project development process was built around district leadership because moving project oversight to the districts moves project development closer to the customer and those most familiar with customer needs.

- The district coordinates the stakeholder involvement effort in conjunction with the PMT and OLE – Public Involvement section.
- The District Construction Engineer (DCE) provides expertise on staging, constructibility, etc., and actively manages the project during construction.
- The District Maintenance Manager (DMM) provides insight into the serviceability and acceptability of the final product.

1.2.3 Early Problem Identification

By initiating data collection early and investigating all reasonable alternatives fully, the re-engineered project development process makes more complete data available at key decision points than did the previous approach. This approach enables the PMT to base decisions on complete, factual, reliable information, along with engineering judgment, and to tailor solutions to individual project needs. It also improves problem identification and problem solving.

In addition, the process incorporates concurrent development by placing certain development tasks at an earlier point in the schedule. It is recognized that there are potential risks, such as rework, inherent in using this approach; however, the Iowa DOT HDMT believes that the risks could be managed and that the benefits of time and cost would outweigh any unmanageable risks.

While upfront costs for tasks early in the development process are identifiable and measurable, the broader picture requires consideration of overall value, not just individual costs. For example, it costs more to conduct environmental investigations on multiple alignment options or a wider footprint within a [corridor](#), or to fly more corridors at a lower flight level to improve photo resolution. However, the many advantages, outlined in [Section 1.3, Advantages](#), include more customer-oriented stakeholder involvement and early recognition of environmental problems. Such advantages offset additional costs during the early activities by the following:

- Reducing rework caused by late changes, environmental surprises, and political changes (Less development time means less time for changes to occur in the political arena.)
- Reducing project development time
- Using a concurrent project development process from concept to letting as opposed to a more traditional linear process
- Providing better and more complete data for consideration at key decision points
- Reducing costs for mitigating environmental consequences by taking a hard look at avoidance first
- Winning acceptance for the project
- Incorporating property owner information and concerns into the NEPA document for the project before the start of final design

1.2.4 Uniform, Integrated Development Process

Maximum continuity of project data along the entire development timeline optimizes the process from concept to contract while promoting fiscal soundness and project credibility. Fewer changes are required, which better manages cost; time is available for additional stakeholder involvement in accordance with State of Iowa (State) law; and the PMT is better able to establish and maintain the development schedule.

1.2.5 Avoidance of Environmental Impacts

A commitment of the project development philosophy is to avoid environmental impacts to the maximum extent and to mitigate those impacts that are unavoidable. In the past, environmental issues were addressed late in the project development process. Therefore, decisions that had to be made early were sometimes made with incomplete data as project development marched forward, and the focus was on mitigating impacts rather than avoiding them. Under the current process, the key is to avoid impacts and to mitigate those impacts that are unavoidable.

In an effort to avoid impacts, full environmental investigations of all reasonable alternatives are completed, recognizing that some data may not be used. A wider corridor is surveyed and [cleared](#)⁵ to minimize rework and include potential borrow areas. Wider footprints for archaeological and architectural studies ensure the ability to clear parcels where the total land acquisition requirements are not obvious early in the planning process or where it becomes necessary due to an uneconomic remnant or a seller's desire. This wider study corridor should not be confused with the NEPA corridor, which is intended to be wider than the project's needs line but narrower than the study corridor. Although costs are higher as multiple alignments and wide footprints are investigated, this process produces better data for earlier decision making and shortens the time it takes to initiate [mitigation](#).

In cases where avoidance is not practical or feasible, proactive measures can minimize impacts. For unavoidable impacts, the range of mitigation options includes:

- Wetland banking rather than project-by-project mitigation – to avoid having to purchase right of way and develop a project mitigation site
- Early acquisition of sites with archaeological or historic importance, or negotiation for early access to the sites and recovery rights – to evaluate, document, and possibly recover artifacts on sites that require State ownership or owner sign-off without major delays in project development time
- Remediation of [regulated materials](#) before [project letting](#) – to avoid construction delays

A commitment of the project development philosophy is to avoid environmental impacts to the maximum extent and to mitigate those impacts that are unavoidable.

1.2.6 Context-Sensitive Solutions, Including Context-Sensitive Design

Context-sensitive solutions (CSS) fit the roadway into its physical setting (that is, the context within which it will be built) (FHWA 2007). This collaborative, interdisciplinary approach to project planning and development is an integral part of FHWA's efforts to advance environmental stewardship and streamline implementation. For a full discussion of this design approach, see [Chapter 6, Context-Sensitive Solutions](#).

1.2.7 Proactive Stakeholder Involvement and Consensus Building

The project development process incorporates a federal requirement for early contact and vetting the [Purpose and Need](#) statement with stakeholders and provides ample opportunities for stakeholder input through informal and formal meetings throughout project development. Soliciting comments early and throughout the process is intended to encourage broad-based stakeholder input for Iowa DOT's consideration during decision making.

⁵ In the context of environmental investigations of a corridor, "clear" means to survey in order to ensure that there are no encumbrances from an environmental standpoint.

Stakeholder involvement is modeled around a project development process that provides design details earlier in the process than was the past practice. Information on planning and development is made accessible through a series of [public information meetings](#) and website postings.

Under district leadership, the PMT can customize the stakeholder involvement process to the needs of an individual project and the external customers. A wide range of stakeholder involvement techniques is available, as discussed in [Chapter 7, Guide to Stakeholder Involvement](#).

Provisions for buy-in are included at all phases of the project development process to coordinate development efforts and minimize rework. For example, [environmental scoping](#)⁶ meetings are held for the following purposes:

- To establish a dialogue with the resource agencies.
- To provide the resource agencies with basic project information.
- To identify any known concerns or issues that could influence the alignment alternatives.
- To reach consensus as to the project Purpose and Need, acceptability of the proposed study alternatives, and scope of environmental evaluation.

Stakeholder involvement is modeled around a project development process that provides design details early in the process.

In addition, major steps in the project development process are thoroughly documented for all study corridors. The complete draft environmental document is made available for review, and comments as well as potential impacts are evaluated before final selection of the preferred alignment.

1.2.8 Merged Compliance with NEPA and Section 404 Requirements

A [Statewide Implementation Agreement \(SIA\)](#), reprinted in [Appendix B, Statewide Implementation Agreements](#), merges the NEPA and Section 404 compliance processes for highway projects in Iowa and fosters interagency cooperation. Iowa DOT is one of the signatories.

The SIA provides for [concurrence](#)⁷ points, which play a critical role in the consensus-building process discussed above. According to the SIA, concurrence points are intended “to preclude the routine revisiting of decisions that have been agreed to earlier in the process and encourage early substantive participation by the agencies.” For further information, see [Chapter 8, Statewide Implementation Agreement and Concurrence Point Process](#), which discusses the concurrence points, scheduling, participating members, project information packets, and documentation of concurrence.

1.3 ADVANTAGES

The cornerstone of the project development process consists of three parts:

- *PMT concept* – A PMT provides project management continuity from the planning phases to development and into construction.
- *Increased stakeholder involvement* – Increased stakeholder involvement results from moving project management responsibility to the District Office, which brings stakeholder contact to the local level.

⁶ [Scoping](#) is a process by which the scope of issues to address during the environmental review is determined and a range of action(s) and alternatives are considered.

⁷ [Concurrence](#) means agency confirmation that information to date is adequate to agree that the project can be advanced to the next phase of project development.

- *Seamless process from location to concept to design* – An increased level of preliminary engineering (10 to 35 percent) completed early in the project development process increases ownership by the participants and reduces the number of changes. Generally, the following items have been completed when a project is 10 to 35 percent complete:
 - A well-defined scope or concept for a viable project
 - Aerial photography for the corridors
 - Light detection and ranging (LiDAR) imagery and, at times, a planning level [digital terrain model \(DTM\)](#)
 - Basic geotechnical evaluation of the corridors
 - Horizontal and vertical geometrics, template, and preliminary project footprint
 - Interchange and/or intersection locations and basic geometrics
 - Access classification and preliminary access locations
 - Historic structures and Phase IA, I, and II archaeological investigations
 - Wetland delineations
 - [Resource agency](#) contacts and coordination
 - Investigation of proposed right of way acquisitions for regulated materials
 - (Typically) at least two stakeholder involvement meetings and a [public hearing](#)
 - Initial contacts with potentially affected utilities and railroads

A chief advantage is improved efficiencies, achieved by consolidating, empowering, and working smarter. For example, shifting the critical path for development to controllable internal processes shortens the development time. Identifying environmental problems early allows time to avoid problems or to quantify them and incorporate appropriate cost considerations. Completing a greater percentage of design work before a project enters the Five-Year Transportation Improvement Program (Five-Year Program) produces more accurate project cost estimates and a more fiscally sound funding program. Conducting the public hearing when more complete design information is available allows for more meaningful public involvement. In addition, providing coordinated, continuous, customer-oriented stakeholder involvement promotes project understanding.

Other advantages of applying the principles include:

- Shared goals and vision for the project
- More flexible development oversight
- Improved project management of the scope, schedule, and budget
- More predictable delivery time once a project is programmed
- Minimized rework and duplication
- Reduced hand-offs (that is, transfers of responsibility)
- Increased accountability
- More effective communication and public access to information
- Greater responsiveness to customers' needs
- Improved credibility among policy makers and the public

Chapter 2

Project Development Scheduling

CHAPTER 2

PROJECT DEVELOPMENT SCHEDULING

A **project development** schedule consists of the various essential tasks, or “events,” to complete a **project**. The type of project and its complexity determine which events are applicable when developing a schedule.

This chapter is a tool to use in deciding which events to include in the schedule. The events listed are current as of this publication date; however, the Project Scheduling System (PSS) is constantly evolving as new events and milestones are added to better track a project’s development from early planning to letting. Some events are listed only once although they actually may have to occur several times in the **development** of a project. Other events are summaries of processes or checklists from other Iowa Department of Transportation (Iowa DOT) resources. Contact the Project Delivery Bureau’s, Project Scheduling Engineer (PSE) for the latest scheduling information and events.

Other resources that may be useful in developing a schedule and tracking a project’s development progress include the following:

- Office of Design’s *Design Manual*
- Office of Bridges & Structures’ *Bridge Design Manual*
- Office of Right of Way’s *Right of Way Design Manual*
- Office of Location & Environment’s *Office of Location and Environment Manual*
- Office of Traffic & Safety’s *Traffic and Safety Manual* and *Utility Coordination Manual*

2.1 EVENT CODES

Table 2-1 lists event codes for scheduling and tracking projects. It provides the task name for each event and indicates the office responsible for the overall management of the event and for entering completion dates into PSS.

Specific offices are responsible for filling in the actual start and finish dates for events in PSS. Ultimately, though, the development of the project lies with the **Project Management Team (PMT)** and, more specifically, with the person charged with leading the PMT. That person should be ensuring that progress is being made, events are being completed (along with the appropriate deliverables from the consultant), and the actual finish dates of the events are being entered appropriately in PSS.

It is important that correct dates are entered in PSS in a timely manner because PSS not only tracks the development progress of a project but also serves as a method of communication, especially for people who are not intimately involved in the project on a day-to-day basis. As an example, if an event is shown in PSS as not being completed, then the PSE knows who to ask about the status of that specific event. If that event has been done but no date is entered in PSS, then everyone who depends on PSS for timely status updates is operating with misinformation, not to mention that this creates unnecessary work for both the PSE and the responsible office for the event.

Appendix A contains two project development timelines: one pertaining to an **Environmental Impact Statement (EIS)** and **Record of Decision (ROD)**, and one pertaining to an **Environmental Assessment (EA)** and **Finding of No Significant Impact (FONSI)**. The timelines show the major events, their durations, and their relationship to the whole. The timelines do not show all events included in Table 2-1.

Table 2-1. Project Development Event Codes

Event	Task Name	Responsible Office
A03	FHWA Approval of Final Environ. Doc. (FONSI/ROD)	Office of Location & Environment
A05	Environmental Clearance by FHWA (CE)	Office of Location & Environment
A08	NEPA Re-Evaluation	Office of Location & Environment
AC1	Access Control Determination	Office of Traffic & Safety
AC5	Access Control Verification	Office of Traffic & Safety
B00	Bridge Office Concept	Office of Bridges & Structures
B01	Bridges and Structures Layout	Office of Bridges & Structures
B02	Drainage Design and Miscellaneous Layout to Office of Design	Office of Bridges & Structures
B03	Final Bridge Plans	Office of Bridges & Structures
B04	Structural Design Plans to Office of Design	Office of Bridges & Structures
CO1	Contract Packaging	Office of Contracts
CP1	Concurrence Point 1 – Purpose and Need	Office of Location & Environment
CP2	Concurrence Point 2 – Alternatives to be Analyzed	Office of Location & Environment
CP3	Concurrence Point 3 – Alternatives to be Carried Forward	Office of Location & Environment
CP4	Concurrence Point 4 – Preferred Alternative	Office of Location & Environment
CP5	Mitigation Concurrence	Office of Location & Environment
D00	Pre-Design Concept	Office of Design
D02	Design Field Exam	Office of Design
D03	Plans for Preliminary Bridge	Office of Design
D04	Design Plans for Bridge	Office of Design
D05	Plans to Right of Way	Office of Design
D06/D07/ D08/D09	Final Grade Plans/Final Pave Plans/Final Grade and Pave Plans/Final Miscellaneous Plans	Multiple Offices
DM5	Design Methods Turn-In	Office of Design
DT1	Develop Planning Level DTM using LiDAR	Office of Design
DT2	Field Survey for DTM (formerly event D01)	Office of Design
F01	Preliminary Regulated Materials Review	Office of Location & Environment
F02	Interim Regulated Materials Review	Office of Location & Environment
F03	Final Regulated Materials Review	Office of Location & Environment
FP1	Financial Plan by OLE	Office of Location & Environment
FP2	Financial Plan by Design	Office of Design
FP3	Financial Plan by Bridges and Structures	Office of Bridges & Structures
FP4	Financial Plan by District	District
H00	Cultural Resources Assessment	Office of Location & Environment
H01	Phase I Archaeological Survey	Office of Location & Environment
H02	Phase II Archaeological Evaluation	Office of Location & Environment
H03	Historic Architecture Survey and Evaluation	Office of Location & Environment
H04	MOA and Mitigation of Cultural Resource Impacts	Office of Location & Environment
IJR1	Interchange Justification Report by OLE	Office of Location & Environment
IJR2	Interchange Justification Report by Design/Bridges/Structure	Office of Design and Office of Bridges & Structures

Table 2-1. Project Development Event Codes

Event	Task Name	Responsible Office
IJR3	Interchange Justification Report by District	District
IJR4	Interchange Justification Report by Systems Planning	Office of Systems Planning
IJR5	Interchange Justification Report Approval	FHWA
L01/L02	Letting-Grade/Letting-Paving and Incidentals	Office of Contracts
N01	Noise Review	Office of Location & Environment
P00	Planning Concept - Pre-Program	Office of Location & Environment
P02	Preliminary Relocation Assistance Plan	Office of Right of Way
P03	FHWA Approval of Prelim. Environmental Doc. (EA/Draft EIS)	Office of Location & Environment
P05	Municipal/County Pre-Design Agreement	Office of Local Systems
P08	Municipal/County Pre-Construction Agreement	Office of Local Systems
P09	Public Information Meeting (PIM)	District
P10	Public Involvement Activities by District	District
P12	Media Contact	Office of Location & Environment
P14	Corridor Preservation	District and Office of Location & Environment
P15	Public Hearing	Office of Location & Environment
PL1	Planning Concept - Range of Alternatives	Office of Location & Environment
PL2	Planning Concept - Refined Alternatives	Office of Location & Environment
R00	Plot Plans and Summary Sheets to District	Office of Right of Way
R01	Right of Way Layout	Office of Right of Way
R02	Right of Way Appraisal	Office of Right of Way
R03	Right of Way Negotiation	Office of Right of Way
R04	Right of Way Acquisition	Office of Right of Way
R05	Right of Way Relocation	Office of Right of Way
R07	Right of Way Field Exam	Office of Right of Way
RR00	Office of Rail Concept Review	Office of Rail Transportation
RR01	Initial Railroad Concurrence Review	Office of Rail Transportation
RR02	Railroad Review of ROW Easement	Office of Rail Transportation, Office of Right of Way, Office of Design, or Office of Bridges & Structures
RR03	Final Railroad Concurrence Point	Office of Rail Transportation
RR04	Railroad Agreement	Office of Rail Transportation
RR05	Railroad Protective Insurance Review Post Letting	Office of Contracts
S01	Potential Borrow and Alignment Review	Office of Design
S02	Identification of Soils Related ROW Issues	Office of Design
S03	Soils Design Complete	Office of Design
S04	Soils Submittal to Bridge	Office of Design
T01	Existing ROW, Property and Sections Lines in CADD	District
T02	Acquisition Plats and Legal Descriptions	District
TD01	Preliminary Traffic Engineering Layout	Office of Traffic & Safety
TD03	Traffic Engineering Info to Bridges	Office of Traffic & Safety
TD05	Plans for Other Offices	Office of Traffic & Safety

Table 2-1. Project Development Event Codes

Event	Task Name	Responsible Office
TE0	Threatened/Endangered Species Review	Office of Location & Environment
TE1	Threatened/Endangered Species Consultation and Clearance	Office of Location & Environment
TMP1	Work Zone Significant Project Determination	Office of Traffic & Safety
TMP2	Work Zone Significant Project Plan Review	Office of Traffic & Safety
U00	Preliminary Utility Review	Office of Traffic & Safety
U01	General Project Info Submitted to Utilities	Office of Traffic & Safety
U02	Project Notification to Utilities	Office of Traffic & Safety
U03	1st Plan Submittal to Utilities	Office of Traffic & Safety
U04	2nd Plan Submittal to Utilities	Office of Traffic & Safety
U05	Utility Agreement	Office of Traffic & Safety
U06	Notice to Proceed to Utility	Office of Traffic & Safety
U07	Utility Bid Attachment	Office of Traffic & Safety
VE1	Value Engineering Study during Planning Phase	Office of Design
VE2	Value Engineering Study during Design Phase	Office of Location & Environment
W00	Preliminary Wetland Review	Office of Location & Environment
W01	Wetland Design Review	Office of Location & Environment
W02	Wetland Field Work	Office of Location & Environment
W03	404 Permit Submittal	Office of Location & Environment
W04	404 Permit Clearance	Office of Location & Environment
W05	Mitigation Submittal to Other Offices	Office of Location & Environment
W06	Mitigation Post Construction Report	Office of Location & Environment

2.2 EVENT DESCRIPTIONS

The events listed in Table 2-1, above, are presented in the same order in Table 2-2 along with a description of the event. The description includes the action that is to be completed, the purpose of the event, the input required to complete the event, the output resulting from the event, the affected parties, and the responsible office. As each event is completed during project development, PSS is to be updated accordingly.

Table 2-2. Project Development Event Descriptions

A03	FHWA Approval of Final Environ. Doc. (FONSI/ROD)
Action:	For a Finding of No Significant Impact (FONSI): Prepare and distribute the FONSI for projects for which an Environmental Assessment (EA) has been completed if no significant impacts are identified during the EA process, after signature and review of the EA by the resource agencies and the stakeholders for the prescribed period, and after a public meeting/hearing or offer of a hearing has occurred.
	For a Record of Decision (ROD): Prepare and distribute the ROD for projects for which a Final Environmental Impact Statement (EIS) has been completed.

Purpose:	<p>The purpose of the FONSI is to document and present, for the reviewing resource agencies and stakeholders, the Federal Highway Administration's (FHWA's) determination based on its independent evaluation of the EA. The FONSI will report that:</p> <ul style="list-style-type: none"> • The EA adequately and accurately discusses the need, environmental issues, and impacts of the proposed project as well as appropriate mitigation measures for the proposed project. • The EA provides sufficient evidence and analysis for determining that an EIS is not required. • The project would not have any significant impact on the environment. <p>In addition, the FONSI provides the basis for FHWA to grant location approval for the project.</p> <p>The purpose of the ROD is to document and present, for the reviewing resource agencies and stakeholders, FHWA's determination based on its independent evaluation of the Final EIS. The ROD will include:</p> <ul style="list-style-type: none"> • The final disposition of environmental decisions and issues. • Any additional information regarding mitigation plans or Section 4(f) decisions. • Any responses to comments received on the Final EIS.
Input:	<p>For a FONSI, the following are needed:</p> <ul style="list-style-type: none"> • A properly processed EA • Results and disposition concerning any anticipated project impacts • Any correspondence about the project <p>For a ROD, the following are needed:</p> <ul style="list-style-type: none"> • An approved Final EIS • Passage of at least 30 days since the Notice of Availability (NOA) for the Final EIS was published in the Federal Register • Passage of at least 90 days since the NOA for the Draft EIS was published in the Federal Register • All relevant information developed concerning decisions, mitigation plans, project revisions, project commitments, etc.
Output:	<p>For a FONSI: A FONSI granting location approval for the project signed by FHWA and distributed to recipients of the EA</p> <p>For a ROD: A ROD granting location approval for the project signed by FHWA and distributed to recipients of the Final EIS</p>
Affected Parties:	Office of Location & Environment and FHWA
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

A05	Environmental Clearance by FHWA (CE)
Action:	Prepare a document that describes and evaluates the expected social, economic, and environmental impacts of all alternatives proposed for a highway project. A Categorical Exclusion (CE) is completed when an action, individually or cumulatively, does not have a significant effect on the human environment and does not require an Environmental Assessment (EA) or an Environmental Impact Statement (EIS).
Purpose:	<p>To enable Iowa DOT and the Federal Highway Administration (FHWA) to determine which of the following applies:</p> <ul style="list-style-type: none"> • The project is <u>not</u> expected to result in any significant social, economic, or environmental impacts. In this case, a Finding of No Significant Impact (FONSI) is prepared and processed, upon which the project may proceed. • The project <u>is</u> expected to result in significant impacts or to be controversial on environmental grounds, in which case the EA is expanded into a full EIS and processed in accordance with the National Environmental Policy Act (NEPA) and FHWA regulations.
Input:	<p>Relevant data, including:</p> <ul style="list-style-type: none"> • Maps or aerial photographs with delineated project corridors • Property owner information • Brief description of the project purpose and need and general concept • Alternatives being considered, including any proposed interchange locations • Current and targeted design year traffic estimates • Results of preliminary surveys for regulated materials • List of protected plant and animal species • Phase I Archaeological Survey (H01) and Historic Architecture Survey and Evaluation (H03) • Results of the environmental scoping process • Data from preliminary stakeholder involvement activities • Wetland delineations • Preliminary estimates of residential and business displacements
Output:	A CE for a proposed action that, individually or cumulatively, does not have a significant effect on the human environment and does not require an EA or EIS
Affected Parties:	Office of Location & Environment and FHWA
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

A08	NEPA Re-Evaluation
Action:	Prepare a document for consultation with the Federal Highway Administration (FHWA) that describes and evaluates the expected changes in social, economic, and environmental impacts since the Categorical Exclusion (CE), Finding of No Significant Impact (FONSI), or Record of Decision (ROD) was signed.
Purpose:	To determine if the changes are significant and require the National Environmental Policy Act (NEPA) document to be re-evaluated.
Input:	<p>Relevant data that identifies any changes in:</p> <ul style="list-style-type: none"> • Maps, aerial photographs, or delineated project corridors • Property owner information • Project purpose and need or general concept • Alternatives being considered or changes to the impacts associated with the alternatives • Current or targeted design year traffic estimates • Results of preliminary surveys for regulated materials • List of protected plant and animal species • Phase I Archaeological Survey (H01) and Historic Architecture Survey and Evaluation (H03) • The environmental scoping process • Data from stakeholder involvement activities • Wetland delineations • Preliminary estimates of residential and business displacements
Output:	A NEPA re-evaluation that determines whether the original clearance remains valid or a new environmental document must be completed. This may result in project development being delayed or placed on hold until the re-evaluation or new document is completed.
Affected Parties:	Office of Location & Environment and FHWA
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

AC1	Access Control Determination
Action:	Determine the access control priority(ies) classification of a project to provide the necessary constraints for the further design of the project. This determination is to enhance safety and maintain the project's mobility goals.
Purpose:	To provide the public and the affected landowners with a preliminary indication of the effect that the project will have on their access to the highway. This information is part of the public hearing display and will provide the public with an opportunity to discuss with Iowa DOT staff any concerns they have with the preliminary locations. To provide general guidance to design staff regarding the level of medial and marginal access control and the corresponding entrance spacing criteria.
Input:	<ul style="list-style-type: none"> • Property owner information • Approximate property line location • Existing and proposed entrance locations • Proposed interchange location and configuration • Existing and proposed public road connections • Preliminary location of structures • Horizontal and vertical alignment (when possible) • Project purpose and need statement to identify safety concerns and mobility goal
Output:	Access control determination with access spacing requirements
Affected Parties:	District Office, Office of Design, Office of Right of Way, Project Management Team, Office of Systems Planning, and Office of Location & Environment
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
AC5	Access Control Verification
Action:	Verify the project's implementation of the access control classification and other safety/operational treatments. In addition, document and finalize ancillary access control recommendations.
Purpose:	To review and verify the proposed access locations for compliance with the Iowa Primary Highway Access Management Policy and to ensure that the location of the access points are in accordance with the safety and spacing requirements outlined for the level of access control established for the project. This verification is based on maximizing safety by reducing the number of vehicular conflict points while maintaining the project's functional purpose and overall mobility goal.

Input:	<ul style="list-style-type: none"> • Level of access control • Selection of the final alignment • Property owner information • Property lines • Proposed right of way lines • Design profile grades (vertical and horizontal alignment) • Interchange layout • Existing and proposed public road connections • Proposed private access locations and types with station reference • Proposed access closures with location reference • Location of drainage structures, including bridges and culverts • Comments from project review that could impact the location of access points • List of any district-approved, nonconforming access locations with justification
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Output:	Final access control determination and confirmation of the allowed project access locations and connections
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Affected Parties:	District Office, Office of Design, Office of Right of Way, Project Management Team, and Office of Systems Planning
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Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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B00	Bridge Office Concept
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Action:	Develop a project concept involving repair and rehabilitation of bridge and culvert structures as well as extensive riprap projects that protect a road embankment or bridge. Include repair and replacement of various structural elements, including bridge approaches, bridge deck joints, abutments, back walls, beams or girders, piers, bridge decks, and box culverts. Conduct an office and/or field review of the project site.
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Purpose:	To define the scope and cost of projects, and to give other offices (Design, Location & Environment, Right of Way, Program Management, and District) an opportunity to comment on and discuss issues associated with the project.
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Input:	<p>Current bridge files, including:</p> <ul style="list-style-type: none"> • Bridge maintenance reports • Bridge maintenance repair recommendations • Existing bridge plans • Rating files • Sufficiency inventory and appraisal (SI&A) • Programming schedule • Cost data <p>Possibly additional information, including:</p> <ul style="list-style-type: none"> • Survey for revetment projects • Assistance from the Office of Design in identifying traffic control, erosion, and other cultural measures (if applicable) <p>Note: The minimum needs required to start this event are current bridge files and a survey for revetment projects.</p>
Output:	Document identifying the scope and cost of the project as well as timing (scheduling) of the project. This may be a written document or a detailed layout showing the extent of the work (typically for revetment projects).
Affected Parties:	Office of Bridges & Structures, Office of Design (including Soils section), Office of Location & Environment, District Office, Project Management Team, Office of Rail Transportation, Office of Right of Way, and Office of Program Management
Responsible Office:	The Office of Bridges & Structures is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
B01	Bridges and Structures Layout
Action:	Develop final type, size, and location (TS&L) plan for all bridge-sized structures, box culvert structures, retaining walls, and other structures requiring final detail design.
Purpose:	<p>To provide the Office of Bridges & Structures – Detail Design section with completed TS&L for bridges, box culverts, and other miscellaneous structures so that final detail design can begin.</p> <p>To provide the Office of Design with information to establish need lines for the Plans to Right of Way (D05) submittal and the Office of Design – Soils section with substructure locations to plan soil boring operation.</p> <p>To provide the Office of Location & Environment with information to apply for applicable permits.</p>

Input:	<p>Completed Plans for Preliminary Bridge (D03) submittal, including:</p> <ul style="list-style-type: none"> • Typical and actual cross sections • Field survey details • Drainage areas • Plan and profiles including mainline and side roads • Geometrics • Median crossovers • Proposed ditch grades • Interchange geometrics • Proposed sidewalk and trail paths • Soil problem areas and stability berms that affect structure lengths <p>Note: The minimum need required to start this event is either the completed Plans for Preliminary Bridge (D03) or a completed section of the Plans for Preliminary Bridge (D03).</p>
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Output:	CADD reference files and situation plan for Office of Design and GEOPAK information
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Affected Parties:	Office of Bridges & Structures, Office of Design (including Soils section), Office of Location & Environment, Project Management Team, Office of Rail Transportation, and Office of Right of Way
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Responsible Office:	The Office of Bridges & Structures is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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B02	Drainage Design and Miscellaneous Layout to Office of Design
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Action:	Determine the drainage design for a project, including “pink sheet” information for all drainage pipes. Develop final type, size, and location (TS&L) for revetment, scour countermeasure, and emergency relief (ER) projects to be let by the Office of Design.
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Purpose:	<p>To provide the Office of Design with pipe culvert layout for incorporation into final design plan and to establish need lines for the Plans to Right of Way (D05) submittal.</p> <p>To document revetment, scour countermeasure, and ER layouts, specifications, and quantities when needed.</p>

Input:	<p>Completed Plans for Preliminary Bridge (D03) submittal, including:</p> <ul style="list-style-type: none"> • Typical and actual cross sections • Field survey details • Drainage areas • Plan and profiles including mainline and side roads • Geometrics • Median crossovers • Proposed ditch grades • Interchange geometrics • Proposed sidewalk and trail paths • Soil problem areas and stability berms that affect structure lengths <p>Note: The minimum need required to start this event is either the completed Plans for Preliminary Bridge (D03) or a completed section of the Plans for Preliminary Bridge (D03).</p>
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Output:	<p>Pink sheets for all pipe culverts within the project limits</p> <p>CADD reference file and situation plan including bid item quantities for revetment, scour countermeasure, and ER projects</p>
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Affected Parties:	Office of Bridges & Structures, Office of Design, and Office of Right of Way
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Responsible Office:	The Office of Bridges & Structures is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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B03	Final Bridge Plans
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Action:	Perform a detailed analysis of the design elements of structures to be submitted to the Office of Contracts for letting. Such structures typically include new bridges, reinforced concrete box culverts, and retaining walls. This event is also used for bridge painting and bridge washing (cleaning) projects as well as for repair projects involving elements of the structures noted.
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Purpose:	To develop a set of plans containing all of the design details, tabulated quantities, and specifications to allow the Office of Contracts to begin the bid letting process.
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Input:	<ul style="list-style-type: none"> • Complete structure type, size, and location (TS&L), including horizontal and vertical geometrics • Final soils analysis (S04) and recommendations • Assistance from the Office of Design to address bridge approach details, erosion control measures, and traffic control items • Assistance from the Office of Locations & Environment to address cultural, regulatory, and environmental issues (for example, Section 404 of the Clean Water Act permit, State Historic Preservation Office [SHPO] coordination, and Iowa Department of Natural Resources [Iowa DNR] coordination) • Assistance from the Office of Rail Transportation to address railroad agreements <p>Note: The minimum need required to start this event is the completed TS&L.</p>
Output:	Final plan details, including plan notes, specifications, and bid item quantities
Affected Parties:	Office of Bridges & Structures, Office of Design, District Office, Office of Contracts, and Office of Rail Transportation
Responsible Office:	The Office of Bridges & Structures is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
B04	Structural Design Plans to Office of Design
Action:	Perform analysis and develop plan details for structures to be submitted to other offices in the Project Delivery Bureau for inclusion in their final plan set. Such structures typically include retrofit bridge rails, sign trusses, foundations for tower lighting, and some box culvert or structural repair work where coordination with other contractors is considered essential.
Purpose:	To develop plan details, including specifications and tabulated bid item quantities for inclusion in plan sets developed by other offices within the Project Delivery Bureau.
Input:	<p>Documentation addressing the request for work. This documentation would include:</p> <ul style="list-style-type: none"> • Concept describing the scope of work to be performed • Layout for the structure needed (for example, a sign truss, culvert, or flumes) • Final soils analysis and recommendations <p>Note: The minimum needs required to start this event are a concept of the work to be performed and a layout of the structure.</p>
Output:	Plan details, specifications, and bid item quantities
Affected Parties:	Office of Bridges & Structures, Office of Design, District Office, and Office of Traffic & Safety
Responsible Office:	The Office of Bridges & Structures is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

C01	Contract Packaging
Action:	Review quantities associated with the major work types (for example, grading, paving, and structures) of a corridor improvement project, and divide those components into smaller projects when necessary. In an attempt to increase competition among bidders, the Office of Contracts has established guidelines that outline the best time of the year to let the various types of work and the optimum size of projects to attract potential bidders. It also provides an opportunity to assess the need for innovative contracting methods, such as incentive/disincentive, bonuses, lane rental, contract periods, late start date, and other options that would become part of the contract that might benefit the project.
Purpose:	To encourage competition among bidders. This is accomplished by sizing and combining projects to attract the most bidders while maintaining the goals of the project, which include completing the corridor improvement within a specified time frame. An important part of contract packaging is reviewing the staging and construction requirements to determine when the various components should be let, such as whether culverts or bridges should be let first after grading. Contract packaging also includes determining how projects should be combined in order to complete the project with the least inconvenience to the public, within the desired time frame, and to attract the most competition among bidders. In addition, innovative contracting methods should be considered. Such methods include incentives and disincentives, lane rental, bonuses, and other alternatives that may be beneficial for the project. One of the benefits of contract packaging is that it generally results in lower prices on many of the bid items.
Input:	<ul style="list-style-type: none"> • Quantities for the major work types • Borrow needs and location • Structure needs • Proposed staging • Preliminary plans that include right of way needs and access locations
Output:	A recommendation of how corridor improvement projects should be divided by major work type into projects for letting as well as a recommendation of how those projects should be grouped for letting and the order in which they should be let
Affected Parties:	Office of Contracts, Office of Design, Project Management Team, District Office, Office of Bridges & Structures, and Office of Traffic & Safety
Responsible Office:	The Office of Contracts is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

CP1	Concurrence Point 1 – Purpose and Need
Action:	Meet with resource agencies to introduce new projects, provide project background, and obtain concurrence on the purpose and need for a project.
Purpose:	<p>To implement the National Environmental Policy Act (NEPA)/Section 404 of the Clean Water Act merge by considering impacts on wetlands and waters of the U.S. at the earliest practical time in project development, avoiding and minimizing impacts to the extent practicable, and diligently pursuing cooperation and consultation so that all resource agencies are involved at key decision points.</p> <p>To jointly review Iowa DOT projects at early stages of development and concur with the purpose and need of the project.</p> <p>To provide information to the resource agencies to gain concurrence that the purpose and need sufficiently addresses the specific project issues.</p> <p>To identify any resource agencies’ concerns that can be addressed during the project development process.</p>
Input:	<ul style="list-style-type: none"> • Project identified in the Statewide Transportation Improvement Plan (STIP) or an approved long-range transportation plan (LRTP) • Aerial photographs • Existing conditions analysis • Traffic analysis • Draft purpose and need statement • Information received from early coordination/scoping with resource agencies • Information received from public information meeting (PIM)
Output:	<p>Concurrence of the resource agencies with the proposed purpose and need for the project</p> <p>Additional information from the resource agencies that may guide the alternatives development phases</p>
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
CP2	Concurrence Point 2 – Alternatives to be Analyzed
Action:	Update the resource agencies on the project status and obtain concurrence on the range of alternatives to be analyzed.

Purpose:	<p>To implement the National Environmental Policy Act (NEPA)/Section 404 of the Clean Water Act merge by considering impacts on wetlands and waters of the U.S. at the earliest practical time in project development, avoiding and minimizing impacts to the extent practicable, and diligently pursuing cooperation and consultation so that all resource agencies are involved at key decision points.</p> <p>To jointly review Iowa DOT projects at early stages of development and concur with the alternatives to be analyzed.</p> <p>To provide information to the resource agencies to gain concurrence that the range of alternatives to be analyzed sufficiently addresses the specific project issues.</p> <p>To identify any resource agencies' concerns that can be incorporated into the decision process to determine which alternatives will be carried forward.</p> <p>To present a full range of avoidance and minimization alternatives for consideration by the resource agencies to adequately satisfy future permitting requirements.</p>
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Input:	<ul style="list-style-type: none"> • Project limits • Preliminary study area, including differences in limits for analyzing different environmental resources if applicable • Range of viable preliminary alternatives and alignments for the project, including a discussion of any alternatives that were dismissed (for example, off-system improvements, Transportation Systems Management [to reduce congestion], Transportation Demand Management [to reduce vehicles], or alternate modes of transportation) • Desktop data regarding known sensitive environmental areas within the study area using information based on geographic information systems (GIS) datasets, aerial photographs, and information from early coordination/scoping efforts
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Output:	<p>Documentation of environmental resources and preliminary alternatives for an agency concurrence package</p> <p>Concurrence of the resource agencies with the range of alternatives to be analyzed for the project</p> <p>Documentation of concerns any of the resource agencies identify for any of the alternatives being considered or specific studies that may be required for decision at subsequent concurrence meetings</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

CP3	Concurrence Point 3 – Alternatives to be Carried Forward
Action:	Update the resource agencies on the project status and obtain concurrence on the alternatives to be carried forward.
Purpose:	<p>To implement the National Environmental Policy Act (NEPA)/Section 404 of the Clean Water Act merge by considering impacts on wetlands and waters of the U.S. at the earliest practical time in project development, avoiding and minimizing impacts to the extent practicable, and diligently pursuing cooperation and consultation so that all resource agencies are involved at key decision points.</p> <p>To jointly review Iowa DOT projects at early stages of development and concur with the alternatives to be carried forward.</p> <p>To provide information to the resource agencies to gain concurrence that the alternatives to be carried forward sufficiently address the specific project issues.</p> <p>To ensure the information provided and the data collected are adequate for the resource agencies to reach concurrence and assure the project can continue to be advanced through the development process.</p>
Input:	<ul style="list-style-type: none"> • Planning-level field data for sensitive areas, including wetlands, other waters of the U.S., woodlands, threatened and endangered species habitat, prime agricultural land, known Section 106 properties, regulated materials sites, and cultural resources for all alternatives (Developing this information typically requires a field season.) • Wetland delineations (with documentation) • Details of any special studies required for any of the alternatives • Refined alternatives to be carried forward (a no-build alternative is always included)
Output:	<p>Documentation of environmental resources and preliminary alternatives for an agency concurrence package</p> <p>Concurrence of the resource agencies with the alternatives carried forward for the project, and acknowledgement that the alternatives not carried forward can be dropped from further consideration</p> <p>Documentation of concerns that any of the resource agencies identify for any of the field data or remaining alternatives</p>
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

CP4	Concurrence Point 4 – Preferred Alternative
Action:	Update the resource agencies on the project status and obtain concurrence on the preferred alternative for the project.
Purpose:	<p>To implement the National Environmental Policy Act (NEPA)/Section 404 of the Clean Water Act merge by considering impacts on wetlands and waters of the U.S. at the earliest practical time in project development, avoiding and minimizing impacts to the extent practicable, and diligently pursuing cooperation and consultation so that all resource agencies are involved at key decision points.</p> <p>To jointly review Iowa DOT projects at early stages of development and concur with the preferred alternative.</p> <p>To provide information to the resource agencies to gain concurrence that the preferred alternative sufficiently addresses the specific project issues.</p> <p>To ensure the information provided and the data collected are adequate for the resource agencies to issue permits during future phases of the project.</p>
Input:	<ul style="list-style-type: none"> • Any additional special studies required • More detailed refinement of the preferred alternative • Signed Environmental Assessment (EA) or Final Environmental Impact Statement (EIS) <p>Note: Concurrence Point 4 – Preferred Alternative (CP4) should occur prior to the Federal Highway Administration (FHWA) approving the final decision document (that is, the Finding of No Significant Impact [FONSI] or Record of Decision [ROD])</p>
Output:	Concurrence of the resource agencies with the preferred alternative for the project
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
CP5	Mitigation Concurrence
Action:	Update the resource agencies on the project status and obtain concurrence that compensatory mitigation information is adequate to advance to the next stage of project development.

Purpose:	<p>To introduce compensatory mitigation concepts for impacts that are unavoidable.</p> <p>To jointly review Iowa DOT projects at early stages of development and concur with the compensatory mitigation concept.</p> <p>To provide information to the resource agencies to gain concurrence that the compensatory mitigation concept adequately addresses the specific project issues.</p> <p>To ensure the information provided and the data collected are adequate for the resource agencies to issue permits during future phases of the project.</p>
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Input:	<ul style="list-style-type: none"> • Any additional special studies required • Developed mitigation concept
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Output:	Concurrence of the resource agencies with the compensatory mitigation concept for the project
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Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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D00	Pre-Design Concept
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Action:	Document feasible alternatives for a proposed highway improvement project, and identify the selected alternative, project history, traffic estimates, accident history, cost estimates, and issues for each alternative. Document the engineering aspects of a project, decisions made, acceptable design variations, and the thought process used in developing each alternative.
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Purpose:	To capture the preliminary design and engineering analysis completed in developing and screening of the range of alternatives to a preferred highway improvement alternative.
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Input:	<ul style="list-style-type: none"> • Aerial photographs • Light Detection and Ranging (LiDAR) TIN • Current and targeted design year traffic estimates • Accident history • As-built plans • Pavement and/or bridge condition
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Output:	<p>The D00 concept statement, which summarizes the existing conditions, guiding principles and design criteria, alternatives, and preferred alternative</p> <p>MicroStation and GEOPAK files containing horizontal and vertical geometry and preliminary cross sections</p>
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Affected Parties:	Office of Design, District Office, or other offices responsible for plan development
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
D02	Design Field Exam
Action:	Review in the field the plans and project site for potential issues including, but not limited to, vertical and horizontal alignment; roadway cross section; preliminary type, size, and location (TS&L) of structures; staging; traffic operations; drainage; right of way impacts; access locations; environmental features; utilities; and interchange configuration.
Purpose:	To determine how well the plans meet the field conditions and the objectives of the project.
Input:	<ul style="list-style-type: none"> • Field survey for DTM (DT2) • Preliminary alignment(s), if available, from the Office of Location & Environment • Design concept • Preliminary wetland delineations • Preliminary TS&L of drainage structures and bridges • Preliminary borrow locations (S01) • Preliminary findings of the Environmental Assessment (EA) and archaeological review • Level of access control • Proposed interchange configurations
Output:	An accepted set of draft plans and cross sections that serve as the basis for the completed design
Affected Parties:	Office of Design, District Office, or other office(s) responsible for plan development; Project Management Team; Office of Maintenance; and local officials
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
D03	Plans for Preliminary Bridge
Action:	Submit a set of plans to the Office of Bridges & Structures with all the design information necessary for that office to complete its analysis of the type, size, and location (TS&L) of the structures.
Purpose:	To provide the Office of Bridges & Structures – Preliminary Bridge section with the design information it needs to complete its hydraulic review and its assessment of the TS&L of the culverts, bridges, and other drainage structures required on the project.

Input:	<ul style="list-style-type: none"> Existing drainage structure information Plans and cross sections from the Design Field Exam (D02) Field exam letter, which records comments and decisions made during the field review Location and extent of stability berms as defined by Identification of Soils Related ROW Issues (S02) evaluation
Output:	The updated draft plans and cross sections, including adjustments from the field exam and proposed ditch grades
Affected Parties:	Office of Design, District Office, or other office(s) responsible for plan development
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
D04	Design Plans for Bridge
Action:	Submit completed road design sheets to the Office of Bridges & Structures.
Purpose:	To provide the Office of Bridges & Structures with a final set of road design sheets to include in its submittal to the Office of Contracts.
Input:	<ul style="list-style-type: none"> Draft plans and cross sections from the Plans to Right of Way (D05) submittal Completed Right of Way Layout (R01) Design adjustments resulting from right of way negotiations Completed soils design (S03) information
Output:	A complete set of road design sheets that include all bid items, quantities, and required special provisions
Affected Parties:	Office of Design, District Office, or other office(s) responsible for plan development
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
D05	Plans to Right of Way
Action:	Submit draft plans to the Office of Right of Way.
Purpose:	To provide the Office of Right of Way with all of the design information necessary to complete the right of way layout process.

Input:	<ul style="list-style-type: none"> • Draft plans and cross sections from the Plans for Preliminary Bridge (D03) submittal • Completed Identification of Soils Related ROW Issues (S02) information • Completed final type, size, and location (TS&L) plan from the Office of Bridges & Structures (B01) with drainage structures and ditching recommendations
Output:	A set of plans showing the ground intercept lines, both temporary and permanent, and delineating the project footprint, which defines the right of way limits for the project. These plans include interchange configuration; access locations; horizontal and vertical alignment; cross sections; drainage design; TS&L of bridges and culverts; borrow size and location; determination of the need for stability berms and benches; staging needs; location of signals, lighting, and other appurtenances; ground intercept line; and any other design information that would influence the amount of right of way needed to construct and maintain the project.
Affected Parties:	Office of Design, District Office, or other office(s) responsible for plan development
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
D06/D07/ D08/D09	Final Grade Plans/Final Pave Plans/Final Grade and Pave Plans/Final Miscellaneous Plans
Action:	Submit a completed set of design plans to the Office of Contracts.
Purpose:	To provide the Office of Contracts with a final set of plans necessary to initiate the letting process.
Input:	<ul style="list-style-type: none"> • Draft plans and cross sections from the Plans to Right of Way (D05) submittal • Completed Right of Way Layout (R01) • Design adjustments resulting from right of way negotiations • Sheet submittals from other offices or consultants • Completed soils design (S03) information • Any comments received during plan review
Output:	A complete plan set that includes all bid items and quantities as well as required special provisions
Affected Parties:	Office of Design, District Office, or other office(s) responsible for plan development
Responsible Office:	Multiple offices are responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

DM5	Design Methods Turn-In
Action:	Submit draft letting plans for review.
Purpose:	To provide Iowa DOT offices with the draft letting plan for review.
Input:	<ul style="list-style-type: none"> • Draft plans and cross sections from the Plans to Right of Way (D05) submittal • Completed Right of Way Layout (R01) • Design adjustments resulting from right of way negotiations • Sheet submittals from other offices or consultants • Completed soils design (S03) information
Output:	A draft letting plan
Affected Parties:	Office of Design, District Office, or other office(s) responsible for plan development
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
DT1	Develop Planning Level DTM using LiDAR
Action:	Prepare a preliminary digital terrain model (DTM) , which is a three-dimensional model of the ground generated by using photogrammetry and/or aerial LiDAR. This DTM is prepared with minimal information needed for corridor analysis. In general, a 1-meter contour interval is sufficient.
Purpose:	To provide terrain information for corridor analysis.
Input:	<ul style="list-style-type: none"> • Aerial photographs • Corridor limits • Completion of field work necessary for establishing project control • Field survey data, including global positioning system (GPS) control network, major utility location (gas), densification of GPS control, bench level run, establishment of as-built alignment, and photo control
Output:	Project control, a MicroStation planimetric file, a GEOPAK .tin, and digital orthography
Affected Parties:	Office of Design – Photogrammetry and Preliminary Survey sections, and Project Management Team
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

DT2	Field Survey for DTM (formerly event D01)
Action:	Refine the preliminary DTM to improve the accuracy of the model for use in design by obtaining additional field survey and photographic details and merging them with the preliminary DTM to increase its accuracy. Those details include location and identification of utilities, culvert and bridge information, pavement elevations at critical locations, drainage plats, and property owner plats.
Purpose:	To provide the detailed survey information necessary for the development of final earthwork quantities and design details.
Input:	Limits of the field survey
Output:	Final MicroStation files, GEOPAK .tin, and survey reports
Affected Parties:	Office of Design – Photogrammetry, Survey, and Consultant sections, and Project Management Team
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
F01	Preliminary Regulated Materials Review
Action:	<p>Conduct the preliminary regulated materials review through spatial identification of known or potentially contaminated properties. The findings may initiate the performance of a Phase II Environmental Site Assessment (ESA) by a consultant at one or more individual sites in accordance with the latest version of ASTM Standard E1903.</p> <p>Complete the Preliminary Regulated Materials Review (F01) prior to Concurrence Point 2 – Alternatives to be Analyzed (CP2) (the F01 event is scheduled as part of the concurrence point process). As necessary for smaller projects, the Preliminary Regulated Materials Review (F01) may be scheduled 30 days after the completion of the Pre-Design Concept (D00). It typically includes a desktop review of online regulatory agency databases, County Assessor websites, available file documentation, and current and historic aerial photographs. For reviews not undertaken by staff, consultants are used to perform a Phase I ESA in accordance with the latest version of ASTM Standard E1527.</p>
Purpose:	To consider regulated material impacts in the early stages of project development so these impacts can be avoided or minimized to the extent practicable.
Input:	<ul style="list-style-type: none"> • Proposed project corridor limits • Access to U.S. Environmental Protection Agency (EPA) and Iowa Department of Natural Resources (Iowa DNR online databases) • Access to County Assessor websites • Aerial photographs • Consultant statewide service contract • Project limits and Pre-Design Concept (D00) submittal

Output:	<p>For in-house reviews: Shapefile and associated map representing the identified properties</p> <p>For consultant reviews: Phase I ESA report and shapefile</p> <p>When necessary, the findings of the review are directed to Office of Design staff through an inter-office memo discussing site background and location of known or potentially contaminated properties.</p>
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
F02	Interim Regulated Materials Review
Action:	<p>Conduct a desktop review of field exam plans, online regulatory agency databases, County Assessor websites, available file documentation, and current and historic aerial photographs. Potentially conduct a windshield survey of the project corridor or individual sites.</p> <p>The Interim Regulated Materials Review (F02) is scheduled 30 days after the completion of the Design Field Exam (D02). An Interim Regulated Materials Review (F02) typically is not scheduled when a Preliminary Regulated Materials Review (F01) has been scheduled.</p>
Purpose:	To consider regulated material impacts related to anticipated right of way needs so these impacts can be avoided or minimized to the extent practicable.
Input:	<ul style="list-style-type: none"> • Design Field Exam (D02) plans • Access to U.S. Environmental Protection Agency (EPA) and Iowa Department of Natural Resources (Iowa DNR) online databases • Access to County Assessor websites • Aerial photographs • Consultant statewide service contract
Output:	The findings of the review are directed to Office of Design staff through an inter-office memo discussing site background and location of known or potentially contaminated properties. The findings may initiate the performance of a Phase II Environmental Site Assessment (ESA) by a consultant at one or more individual sites in accordance with the latest version of ASTM Standard E1903.
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team

Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
F03	Final Regulated Materials Review
Action:	<p>Conduct a desktop review of the Plans to Right of Way (D05), online regulatory agency databases, County Assessor websites, available file documentation, and current and historic aerial photographs. Review any Phase I Environmental Site Assessment (ESA) and Phase II ESA reports that have been prepared for the project. Potentially conduct a windshield survey of the project corridor or individual sites.</p> <p>The Final Regulated Materials Review (F03) is scheduled 30 days after the completion of the Plans to Right of Way (D05). The Final Regulated Materials Review (F03) is used in place of Preliminary Regulated Materials Review (F01) and Interim Regulated Materials Review (F02) clearances when these events have not been scheduled, such as with smaller-scale projects requiring new right of way (for example, bridge or culvert replacements, intersection improvements, slide repairs, and riprap projects). The Final Regulated Materials Review (F03) is also used to review and update previous Preliminary Regulated Materials Review (F01) and Interim Regulated Materials Review (F02) clearances.</p>
Purpose:	To avoid or minimize regulatory liability to Iowa DOT when acquiring contaminated properties. In the event that a contaminated property cannot be avoided, acquisition by permanent easement, rather than fee title, may be recommended.
Input:	<ul style="list-style-type: none"> • Plans to Right of Way (D05) submittal • Access to U.S. Environmental Protection Agency (EPA) and Iowa Department of Natural Resources (Iowa DNR) online databases • Access to County Assessor websites • Aerial photographs • Phase I ESA and Phase II ESA reports
Output:	The findings of the review are directed to Office of Right of Way staff through an inter-office memo discussing site background and location of known or potentially contaminated properties, along with associated acquisition recommendations (that is, fee title or permanent easement acquisition).
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, Office of Right of Way, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

FP1	Financial Plan by OLE
Action:	Develop a financial plan document to be approved by the Federal Highway Administration (FHWA) (if applicable) before the first mainline letting of a project. Prepare yearly updates to the plan through the completion of construction.
Purpose:	To document all financial aspects for a project, according to FHWA’s guidance regarding financial plans, from initiation of the project through the completion of construction and to document all revenue sources identified for all aspects of the project. To develop a detailed schedule to support the project needs.
Input:	<ul style="list-style-type: none"> • Cost estimates • Staging scenarios • Expended costs to date • Projected remaining costs to complete the project • Funding sources • Committed State and federal funds • Development/construction schedule
Output:	An initial financial plan approved by FHWA (if project costs exceed \$500 million) An initial financial plan on file that has been approved by the Highway Division Director (if project costs are between \$100 million and \$500 million) Approval of yearly updates to the initial financial plan
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
FP2	Financial Plan by Design
Action:	Develop a financial plan document to be approved by the Federal Highway Administration (FHWA) (if applicable) before the first mainline letting of a project. Prepare yearly updates to the plan through the completion of construction.
Purpose:	To document all financial aspects for a project, according to FHWA’s guidance regarding financial plans, from initiation of the project through the completion of construction and to document all revenue sources identified for all aspects of the project. To develop a detailed schedule to support the project needs.

Input:	<ul style="list-style-type: none"> • Cost estimates • Staging scenarios • Expended costs to date • Projected remaining costs to complete the project • Funding sources • Committed State and federal funds • Development/construction schedule
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Output:	<p>An initial financial plan approved by FHWA (if project costs exceed \$500 million)</p> <p>An initial financial plan on file that has been approved by the Highway Division Director (if project costs are between \$100 million and \$500 million)</p> <p>Approval of yearly updates to the initial financial plan</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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FP3	Financial Plan by Bridges and Structures
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Action:	Develop a financial plan document to be approved by the Federal Highway Administration (FHWA) (if applicable) before the first mainline letting of a project. Prepare yearly updates to the plan through the completion of construction.
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Purpose:	<p>To document all financial aspects for a project, according to FHWA's guidance regarding financial plans, from initiation of the project through the completion of construction and to document all revenue sources identified for all aspects of the project.</p> <p>To develop a detailed schedule to support the project needs.</p>
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Input:	<ul style="list-style-type: none"> • Cost estimates • Staging scenarios • Expended costs to date • Projected remaining costs to complete the project • Funding sources • Committed State and federal funds • Development/construction schedule
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Output:	<p>An initial financial plan approved by FHWA (if project costs exceed \$500 million)</p> <p>An initial financial plan on file that has been approved by the Highway Division Director (if project costs are between \$100 million and \$500 million)</p> <p>Approval of yearly updates to the initial financial plan</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Bridges & Structures is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
FP4	Financial Plan by District
Action:	Develop a financial plan document to be approved by the Federal Highway Administration (FHWA) (if applicable) before the first mainline letting of a project. Prepare yearly updates to the plan through the completion of construction.
Purpose:	To document all financial aspects for a project, according to FHWA's guidance regarding financial plans, from initiation of the project through the completion of construction and to document all revenue sources identified for all aspects of the project. To develop a detailed schedule to support the project needs.
Input:	<ul style="list-style-type: none"> • Cost estimates • Staging scenarios • Expended costs to date • Projected remaining costs to complete the project • Funding sources • Committed State and federal funds • Development/construction schedule
Output:	An initial financial plan approved by FHWA (if project costs exceed \$500 million) An initial financial plan on file that has been approved by the Highway Division Director (if project costs are between \$100 million and \$500 million) Approval of yearly updates to the initial financial plan
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The District is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
H00	Cultural Resources Assessment
Action:	Review new or revised project, undertaking, or action area(s) (area of potential effect [APE]) for effects on cultural resources (archaeological sites or historic structures, buildings, bridges, farmsteads, or districts). Submit any applicable results to the State Historic Preservation Office (SHPO). Complete the Section 106 determination of effect if right of way impacts are known.

Purpose:	To locate and identify any known cultural resources within the APE to determine if further studies are warranted or if the project, undertaking, or action may proceed. If further studies are warranted, an H01 event and/or an H03 event will be added to the schedule.
Input:	<ul style="list-style-type: none"> • Final Pre-Design Concept (D00) or Bridge Office Concept (B00) • National Environmental Policy Act (NEPA) boundary
Output:	<p>If the project, undertaking, or action may proceed: An assessment and concurrence from SHPO, if applicable, and a clearance memo to affected parties</p> <p>If further studies are warranted: Scheduled Phase I Archaeological Survey (H01) and/or Historic Architecture Survey and Evaluation (H03)</p>
Affected Parties:	Office of Location & Environment, District Office, Office of Bridges & Structures, Office of Design, Office of Right of Way, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
H01	Phase I Archaeological Survey
Action:	Conduct a Phase I Archaeological Survey to identify archaeological sites within the new or revised project, undertaking, or action area(s) (area of potential effect [APE]), and submit results to the State Historic Preservation Office (SHPO) and any applicable Tribes for comments. Complete the Section 106 determination of effect if right of way impacts are known.
Purpose:	To locate and identify any known or unknown archaeological sites within the APE to determine if any sites identified as potentially eligible for listing on the National Register of Historic Places (NRHP) will be affected by the proposed project, and to provide SHPO and applicable Tribes opportunity to comment. If no potentially eligible sites will be affected, no further archaeological review is required. If a potentially eligible site may be affected, further studies will be warranted, and another H01 event and/or an H02 event will be added to the schedule.
Input:	<ul style="list-style-type: none"> • Final Pre-Design Concept (D00) or Bridge Office Concept (B00) • Potential Borrow and Alignment Review (S01) • National Environmental Policy Act (NEPA) boundary • Any known alternatives • Completed public information meeting (PIM) (for large projects) • Property owner contact information list (for large projects)

Output:	<p>Final Phase I Archaeological Survey</p> <p>Consultation with applicable Tribes</p> <p>If no potentially eligible sites will be affected: Concurrence with report findings from SHPO and a clearance memo to affected parties</p> <p>If a potentially eligible site may be affected: Scheduled additional Phase I Archaeological Survey (H01) or Phase II Archaeological Evaluation (H02)</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Bridges & Structures, Office of Design, Office of Right of Way, and Project Management Team
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Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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H02	Phase II Archaeological Evaluation
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Action:	Conduct a Phase II Archaeological Evaluation to investigate specific archaeological site(s) within the new or revised project, undertaking, or action area(s) (area of potential effect [APE]), and submit results to the State Historic Preservation Office (SHPO) and any applicable Tribes for comments. Complete the Section 106 determination of effect if right of way impacts are known.
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Purpose:	To evaluate a known archaeological site(s) within the APE to determine if the site(s) is eligible for listing on the National Register of Historic Places (NRHP) and to provide SHPO and applicable Tribes opportunity to comment. If the site is determined not eligible, no further archaeological review is required. If the site is found eligible, full consideration of the site will be afforded when evaluating alternatives and project area(s). If the site will be affected, mitigation will be warranted and an H04 event will be added to the schedule.
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Input:	<ul style="list-style-type: none"> • Completed Phase I Archaeological Survey (H01) • Design Field Exam (D02) • Identification of Soils Related ROW Issues (S02) • Any known alternatives
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Output:	<p>Final Phase II Archaeological Evaluation</p> <p>Consultation with applicable Tribes</p> <p>If the site is determined not eligible: Concurrence with report findings from SHPO and a clearance memo to affected parties</p> <p>If the site is found eligible and will be affected: Scheduled MOA and Mitigation of Cultural Resource Impacts (H04)</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Bridges & Structures, Office of Design, Office of Right of Way, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
H03	Historic Architecture Survey and Evaluation
Action:	Conduct a Historic Architectural Survey and Evaluation to identify historic structures, buildings, bridges, farmsteads, or districts within the new or revised project, undertaking, or action area(s) (area of potential effect [APE]), and submit results to the State Historic Preservation Office (SHPO) and any interested parties for comments. Complete the Section 106 determination of effect if right of way impacts are known.
Purpose:	To locate, identify, and evaluate structures, buildings, bridges, farmsteads, or districts within the APE to determine if any are eligible for listing on the National Register of Historic Places (NRHP) and to provide SHPO and interested parties an opportunity to comment. If any properties are determined not eligible, no further historic architectural review is required. If any properties are found eligible and will be affected, mitigation will be warranted and an H04 event will be added to the schedule.
Input:	<ul style="list-style-type: none"> • Final Pre-Design Concept (D00) or Bridge Office Concept (B00) • National Environmental Policy Act (NEPA) boundary • Any known alternatives • Completed public information meeting (PIM) (for large projects) • Property owner contact information list (for large projects)
Output:	<p>Final Historic Architecture Survey and Evaluation</p> <p>Consultation with interested parties</p> <p>If properties are determined not eligible: Concurrence with report findings from SHPO and a clearance memo to affected parties</p> <p>If properties are found eligible and will be affected: Scheduled MOA and Mitigation of Cultural Resource Impacts (H04)</p>
Affected Parties:	Offices of Location & Environment, District Office, Office of Bridges & Structures, Office of Design, Office of Right of Way, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

H04	MOA and Mitigation of Cultural Resource Impacts
Action:	Complete the Section 106 determination of effect. Consult with the State Historic Preservation Office (SHPO), the Federal Highway Administration (FHWA), Advisory Council on Historic Preservation (ACHP), and applicable Tribes and/or interested parties regarding the adverse effects of the project, undertaking, or action on historic properties (archaeological sites or historic structures, buildings, bridges, farmsteads, or districts that are eligible for listing on the National Register of Historic Places [NRHP]) to minimize or mitigate those effects. Finalize the stipulations that minimize or mitigate those effects in an executed memorandum of agreement (MOA) or Programmatic Agreement (PA) and implement the MOA or PA.
Purpose:	To formalize an agreement among SHPO, FHWA, ACHP, and any applicable Tribes and/or interested parties that outlines stipulations illustrating how Iowa DOT will mitigate for the adverse effects of the project, undertaking, or action on historic properties, and how to fulfill the stipulations.
Input:	<ul style="list-style-type: none"> Plans to Right of Way (D05) submittal Acquisition of parcels with eligible archaeological sites or historic architectural properties
Output:	<p>Signed and executed MOA or PA</p> <p>Completion of and SHPO concurrence on the sufficiency of data recovery field work for archaeological sites, and/or photographs and research for historic architectural properties (Issue clearance memo and clear “SHPO” in PSS)</p> <p>Fulfillment of all stipulations of project MOA or PA (Issue H04 completion memo)</p>
Affected Parties:	Office of Location & Environment, District Office, Office of Bridges & Structures, Office of Design, Office of Right of Way, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
IJR1	Interchange Justification Report by OLE
Action:	Develop a report and related documents to determine the need for access changes in conjunction with the National Environmental Policy Act (NEPA) process.
Purpose:	To gain approval for access changes on federal (interstate) and State (U.S. and Iowa primary highways) access-controlled roadways. The report will define a traffic operation or safety problem and provide operational analysis that leads to a solution.

Input:	<ul style="list-style-type: none"> • Current and targeted design year traffic estimates • Design criteria • Access control information • Crash data • Land use information • Existing conditions analysis • Range of viable alternatives • Environmental data
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Output:	<p>One of the following three types of documents, for all access changes involving interchanges on the primary road system:</p> <ul style="list-style-type: none"> • An Interchange Justification Report (IJR) will be completed for all access changes involving an interchange on the federal (interstate) system and may be required for changes to the state (U.S. and Iowa primary highways) system. • An Interchange Operations Report (IOR) can be used on a case-by-case basis for minor interchange modifications on federal (interstate) and state (U.S. and Iowa primary highways) systems. • An Interchange Justification Letter (IJL) may be prepared for interchange modifications or a new interchange on a non-interstate, non-Priority 1 state highway. <p>Acceptance of engineering operations by the District Engineer (DE)</p> <p>Approval by the Federal Highway Administration (FHWA) (for changes to the federal [interstate] system) or approval by the Highway Division Director and Planning, Programming, and Modal Division Director (for changes to the state [U.S. and Iowa primary highways] system)</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Systems Planning, Office of Traffic & Safety, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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IJR2	Interchange Justification Report by Design/Bridges/Structure
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Action:	Develop a report and related documents to determine the need for access changes in conjunction with the National Environmental Policy Act (NEPA) process.
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Purpose:	To gain approval for access changes on federal (interstate) and State (U.S. and Iowa primary highways) access-controlled roadways. The report will define a traffic operation or safety problem and provide operational analysis that leads to a solution.
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Input:	<ul style="list-style-type: none"> • Current and targeted design year traffic estimates • Design criteria • Access control information • Crash data • Land use information • Existing conditions analysis • Range of viable alternatives • Environmental data
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Output:	<p>One of the following three types of documents, for all access changes involving interchanges on the primary road system:</p> <ul style="list-style-type: none"> • An Interchange Justification Report (IJR) will be completed for all access changes involving an interchange on the federal (interstate) system and may be required for changes to the state (U.S. and Iowa primary highways) system. • An Interchange Operations Report (IOR) can be used on a case-by-case basis for minor interchange modifications on federal (interstate) and state (U.S. and Iowa primary highways) systems. • An Interchange Justification Letter (IJL) may be prepared for interchange modifications or a new interchange on a non-interstate, non-Priority 1 state highway. <p>Acceptance of engineering operations by the District Engineer (DE)</p> <p>Approval by the Federal Highway Administration (FHWA) (for changes to the federal [interstate] system) or approval by the Highway Division Director and Planning, Programming, and Modal Division Director (for changes to the state [U.S. and Iowa primary highways] system)</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Systems Planning, Office of Traffic & Safety, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The Office of Design and the Office of Bridges & Structures are responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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IJR3	Interchange Justification Report by District
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Action:	Develop a report and related documents to determine the need for access changes in conjunction with the National Environmental Policy Act (NEPA) process.
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Purpose:	To gain approval for access changes on federal (interstate) and State (U.S. and Iowa primary highways) access-controlled roadways. The report will define a traffic operation or safety problem and provide operational analysis that leads to a solution.
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Input:	<ul style="list-style-type: none"> • Current and targeted design year traffic estimates • Design criteria • Access control information • Crash data • Land use information • Existing conditions analysis • Range of viable alternatives • Environmental data
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Output:	<p>One of the following three types of documents, for all access changes involving interchanges on the primary road system:</p> <ul style="list-style-type: none"> • An Interchange Justification Report (IJR) will be completed for all access changes involving an interchange on the federal (interstate) system and may be required for changes to the state (U.S. and Iowa primary highways) system. • An Interchange Operations Report (IOR) can be used on a case-by-case basis for minor interchange modifications on federal (interstate) and state (U.S. and Iowa primary highways) systems. • An Interchange Justification Letter (IJL) may be prepared for interchange modifications or a new interchange on a non-interstate, non-Priority 1 state highway. <p>Acceptance of engineering operations by the District Engineer (DE)</p> <p>Approval by the Federal Highway Administration (FHWA) (for changes to the federal [interstate] system) or approval by the Highway Division Director and Planning, Programming, and Modal Division Director (for changes to the state [U.S. and Iowa primary highways] system)</p>
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Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Systems Planning, Office of Traffic & Safety, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The District is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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IJR4	Interchange Justification Report by Systems Planning
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Action:	Develop a report and related documents to determine the need for access changes in conjunction with the National Environmental Policy Act (NEPA) process.
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Purpose:	To gain approval for access changes on federal (interstate) and State (U.S. and Iowa primary highways) access-controlled roadways. The report will define a traffic operation or safety problem and provide operational analysis that leads to a solution.
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Input:	<ul style="list-style-type: none"> • Current and targeted design year traffic estimates • Design criteria • Access control information • Crash data • Land use information • Existing conditions analysis • Range of viable alternatives • Environmental data
Output:	<p>One of the following three types of documents, for all access changes involving interchanges on the primary road system:</p> <ul style="list-style-type: none"> • An Interchange Justification Report (IJR) will be completed for all access changes involving an interchange on the federal (interstate) system and may be required for changes to the state (U.S. and Iowa primary highways) system. • An Interchange Operations Report (IOR) can be used on a case-by-case basis for minor interchange modifications on federal (interstate) and state (U.S. and Iowa primary highways) systems. • An Interchange Justification Letter (IJL) may be prepared for interchange modifications or a new interchange on a non-interstate, non-Priority 1 state highway. <p>Acceptance of engineering operations by the District Engineer (DE)</p> <p>Approval by the Federal Highway Administration (FHWA) (for changes to the federal [interstate] system) or approval by the Highway Division Director and Planning, Programming, and Modal Division Director (for changes to the state [U.S. and Iowa primary highways] system)</p>
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Systems Planning, Office of Traffic & Safety, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Systems Planning is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
IJR5	Interchange Justification Report Approval
Action:	Provide final documentation to the Federal Highway Administration (FHWA) describing the access changes.
Purpose:	To gain FHWA's approval (that is, its signature on the appropriate documentation) for the access changes requested and proposed.
Input:	<ul style="list-style-type: none"> • Final Interchange Justification Report (IJR), Interchange Operations Report (IOR), or Interchange Justification Letter (IJL) • Letter from District Engineer (DE) requesting approval

Output:	District approval of the operations and FHWA’s approval of the access change document
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Systems Planning, Office of Traffic & Safety, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The office responsible for the IJR event tied to the specific project is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
L01/L02	Letting-Grade/Letting-Paving and Incidentals
Action:	Prepare projects for bidding, conduct the bidding, and award the contracts. This involves reviewing the project plans and preparing cost estimates, bidding documents, and proposals. It also involves printing proposals and plans, distributing bidding documents to prospective bidders, requesting the Federal Highway Administration’s (FHWA’s) approval, advertising and conducting the letting, analyzing bids, and awarding contracts.
Purpose:	<p>To establish contracts with a private construction company to perform the work outlined in the project plans.</p> <p>To ensure that the plans and specifications clearly outline the project’s requirements and scope of work.</p> <p>To review all bids to determine whether the bidders can perform the work and that the project is awarded to the actual low bidder.</p>
Input:	A complete set of plans that includes all bid items and quantities and that outlines the required specifications and special provisions
Output:	A set of plans ready for bidding, including all bidding documents, and approvals
Affected Parties:	Office of Contracts
Responsible Office:	The Office of Contracts is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.

N01	Noise Review
Action:	<p>For highway projects on new or existing alignments that are classified as Type I highway projects:</p> <ul style="list-style-type: none"> • Review the project area to determine the likelihood of noise receptor impacts. Reviews may be conducted using office data or field data depending on the project details and availability of pertinent information. • Conduct noise analyses for such projects that have been identified as having potentially impacted receptors. <p>When there is a public complaint pertaining to traffic noise being generated from a highway:</p> <ul style="list-style-type: none"> • Conduct a field review as is reasonable and as requested by the District Engineer (DE). Review concerns with the District and with citizens. • Provide guidance and recommendations as necessary to the District Office, the Iowa DOT Highway Division Management Team (HDMT), and the public.
Purpose:	<p>To provide information on highway traffic noise on an as needed basis to allow the DE to address public noise concerns.</p> <p>To provide traffic noise abatement recommendations, in accordance with Iowa DOT’s noise policy, for impacted receptors when it is found to be feasible and reasonable, and as agreed to by the DE.</p>
Input:	<ul style="list-style-type: none"> • Maps or aerial photographs showing alternative project corridors • Geographic Information Systems (GIS) parcel data containing information on properties adjacent to the project corridor • Coordination with local, state, or federal resource agencies • MicroStation files and/or GIS files depicting alternative alignments
Output:	<p>For Type I highway projects: A technical noise analysis that identifies traffic noise impacts, determines feasibility and reasonableness of providing noise abatement, and speaks to the likelihood of providing noise abatement</p> <p>For public noise complaints pertaining to existing highways: A summary of field review findings and recommendations, which is to be provided to the DE</p> <p>For National Environmental Policy Act (NEPA) documents: Appropriate analyses and documentation</p>
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, Office of Right of Way, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.

P00	Planning Concept - Pre-Program
Action:	<p>Document in a Planning Concept statement the engineering analysis involved in developing a range of alternatives (PL1), refining the alternatives (PL2), and screening the alternatives to select a preferred alternative (depending on the level of detail for the study and environmental commitments).</p> <p>The Planning Concept - Pre-Program (P00) event is a preliminary design event complementing the National Environmental Policy Act (NEPA) environmental document development. The Planning Concept - Pre-Program (P00) event documents the engineering aspects of a project, decisions made, acceptable design variations, and the thought and intent behind the development of the alternatives. The Planning Concept - Pre-Program (P00) event is intended to distribute the engineering analysis that went into alternatives development within the Planning Concept - Range of Alternatives (PL1) and Planning Concept – Refined Alternatives (PL2) events and is intended to be a summary of the Location Study Report if a Location Study Report is required for the project.</p>
Purpose:	<p>To capture the preliminary design and engineering analysis completed in developing and screening a range of alternatives for a highway improvement project. Each project may be developed to a different level of detail but needs to be documented clearly so other offices know the decisions made and why the preferred alternative was selected. This should reduce rework as the project progresses through the development phases.</p>
Input:	<ul style="list-style-type: none"> • Planning Concept - Range of Alternatives (PL1) • Planning Concept - Refined Alternatives (PL2) • Concurrence from the resource agencies on the Purpose and Need (CP1) (if applicable) • Concurrence from the resource agencies on the Alternatives to be Analyzed (CP2) (if applicable) • Concurrence from the resource agencies on the Alternatives to be Carried Forward (CP3) (if applicable) • Concurrence from the resource agencies on the Preferred Alternative (CP4) (if applicable) • Stakeholder involvement activities (P09, P10, P14, P15) (as needed) • Federal Highway Administration’s (FHWA’s) approval of the final environmental decision document (A03) • Interchange Justification Report by Office of Location & Environment (IJR1) (if necessary)
Output:	<p>A location study report, as necessary, (either written in-house or by consultant) that documents a summary of the work done and decisions made throughout the planning stage of the project</p> <p>The Planning Concept - Pre-Program (P00) statement, which may summarize or reference the location study report or other reports that contain the following: the existing conditions evaluation, guiding principles and design criteria, the development of the range of alternatives, preferred alternative selection process, summary of public and agency coordination, context sensitive solutions, etc.</p>

Affected Parties:	Office of Location & Environment – Location section, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
P02	Preliminary Relocation Assistance Plan
Action:	Prepare a study outlining the anticipated displacement impacts of various highway alternatives being considered during the environmental phase of project development.
Purpose:	To document the number of potential displacements for each highway alternative being studied; report any known unique social or economic issues; specify the types of properties being impacted; estimate the number of owner-occupied vs. number of tenant-occupied dwellings; discuss the impact on the local market caused by the displacements; and provide any implementation strategies that should be considered to minimize the impacts of the displacements if needed.
Input:	<ul style="list-style-type: none"> • Maps or aerial photographs showing the delineated project corridor • Preliminary plans/concepts showing the various alternatives being considered • County Assessors’ listings • Multiple real estate listings • List of local builders and contractors
Output:	A report outlining the anticipated displacement impacts of various highway alternatives being studied to ensure that Relocation Assistance is provided in such a manner that the problems associated with the displacement of individuals, families, businesses, farms, and nonprofit organizations are recognized and solutions are developed to minimize the adverse impacts of displacement
Affected Parties:	Office of Location & Environment – NEPA section
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
P03	FHWA Approval of Prelim. Environmental Doc. (EA/Draft EIS)
Action:	<p>Prepare a document that describes and evaluates the expected social, economic, and environmental impacts of all proposed alternatives for a highway project.</p> <p>Prepare an Environmental Assessment (EA) when the expected environmental impacts of a project are not expected to be significant or are not immediately evident.</p> <p>Prepare a Draft Environmental Impact Statement (EIS) when the project has been determined to likely result in a major federal action significantly affecting the quality of the human and natural environment or is likely to be highly controversial.</p>

Purpose:	<p>To enable Iowa DOT and the Federal Highway Administration (FHWA) to determine which of the following applies:</p> <ul style="list-style-type: none"> • The project is not expected to result in any significant social, economic, or environmental impacts. In this case, an EA and Finding of No Significant Impact (FONSI) are prepared and processed. • The project is expected to result in significant impacts or to be controversial on environmental grounds. In this case, a Draft EIS is completed in accordance with the National Environmental Policy Act (NEPA) and FHWA regulations. <p>To communicate Iowa DOT’s and FHWA’s findings with regard to expected environmental impacts and mitigation commitments to resource agencies and the public.</p> <p>To serve as a tool for decision making and documentation of environmental commitments.</p>
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Input:	<p>Relevant data, including:</p> <ul style="list-style-type: none"> • Maps or aerial photographs with delineated project corridors • Property owner information • Project purpose and need, and general concept • Alternatives being considered, including any proposed interchange locations • Current and targeted design year traffic estimates • Results of preliminary surveys for regulated materials • List of protected plant and animal species • Phase I Archaeological Survey (H01) and Historic Architecture Survey and Evaluation (H03) • Results of the environmental scoping process • Data from preliminary stakeholder involvement activities • Wetland delineations • Preliminary estimates of residential and business displacements
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Output:	The EA or Draft EIS, signed by FHWA and made available to appropriate agencies and the public for review
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Affected Parties:	Office of Location & Environment and FHWA
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Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
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P05	Municipal/County Pre-Design Agreement
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Action:	Make an agreement with the Local Public Agency (LPA) prior to design completion and development of costs for a primary road project that affects the LPA (that is, a project involving either county side road(s) or primary road extension within the corporate limits of a city that may or may not affect a city side street).
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Purpose:	To outline the division of responsibilities of the parties related to right of way acquisition, access control, design of the project, and utility adjustments. Typically, a Preconstruction Agreement follows to cover further project-related responsibilities including marked primary road detours and any participation by the LPA in the costs of the project.
Input:	Completed checklist for primary road project agreement
Output:	Executed Predesign Agreement
Affected Parties:	Depending on the content of the agreement, affected parties could include: District Office, Office of Design, Office of Traffic & Safety, Office of Bridges & Structures, Office of Contracts, Office of Program Management, Office of Right of Way, Office of Finance, Office of Audits, Office of Location & Environment, and Research & Technology Bureau
Responsible Office:	The Office of Local Systems is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
P08	Municipal/County Pre-Construction Agreement
Action:	<p>Make an agreement with the Local Public Agency (LPA) prior to a project letting and contract award for a primary road project that affects the LPA (that is, a project involving either county side road(s) or primary road extension within the corporate limits of a city that may or may not affect a city side street).</p> <p>Rural projects where side road construction extends beyond the primary highway right of way limits require an agreement with the county. Projects located entirely or partially within the corporate limits of a city that involve construction not classified as maintenance type work generally require a Preconstruction Agreement.</p>
Purpose:	To outline the division of responsibilities of the parties related to costs; right of way acquisition; road or street closures or relocations, both temporary and permanent; maintenance; detours; lighting, signing, and signalization of interchanges or intersections; roadway lighting energy and maintenance; access control; design of the project; letting; construction; construction inspection; parking; gradelines; utility adjustments; sidewalks; storm sewers; and encroachments.
Input:	Completed checklist for primary road project agreement, including an estimate of LPA costs, if any, and a location map
Output:	Executed Preconstruction Agreement
Affected Parties:	Depending on the content of the agreement, affected parties could include: District Office, Office of Design, Office of Traffic & Safety, Office of Bridges & Structures, Office of Contracts, Office of Program Management, Office of Right of Way, Office of Finance, Office of Audits, Office of Location & Environment, and Research & Technology Bureau

Responsible Office:	The Office of Local Systems is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
P09	Public Information Meeting (PIM)
Action:	Notify the public of potential road improvement projects and their potential impacts.
Purpose:	To conduct a public information meeting (PIM) to inform property owners and the public about potential projects and their potential impacts, and to receive their input concerning those impacts. Tools used for the PIM include letters, newsletters, media contacts, press releases, displays, exhibits , and handouts.
Input:	<ul style="list-style-type: none"> • Roadway plans • Certified list of potentially affected agricultural land owners (as defined in Iowa Code Chapter 6B) (if applicable) • List of non-agricultural property owners (as defined in Iowa Code Chapter 6B) • Project development schedule • Cost estimate • Detour route • Proposed right of way taking
Output:	Increased public awareness and public input in project development
Affected Parties:	Office of Location & Environment – Public Involvement section, District Office, Office of Right of Way, Office of Design, Office of Bridges & Structures, Office of Contracts, and Project Management Team
Responsible Office:	The District is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
P10	Public Involvement Activities by District
Action:	Notify the public of potential road improvement projects and their potential impacts.
Purpose:	To use one or more of several tools to inform property owners and the public about potential projects and their project impacts, and to receive their input concerning those impacts. Tools include a public information meeting (PIM), neighborhood meeting, individual property owner contacts either in person or by phone, letters, newsletters, media contacts, and press releases.
Input:	<ul style="list-style-type: none"> • Roadway plans • List of property owners • Project development schedule • Cost estimate • Detour route • Proposed right of way taking

Output:	Increased public awareness and public input in project development
Affected Parties:	District Office, Office of Right of Way, Office of Design, Office of Bridges & Structures, Office of Contracts, and Project Management Team
Responsible Office:	The District is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
P12	Media Contact
Action:	Notify the public of project information, including changes and updates.
Purpose:	To notify the public about road closures, construction schedules, changes in detour routes, and <i>de minimis</i> Section 4(f) impacts.
Input:	<ul style="list-style-type: none"> • Detour route information • Project development schedules • Project location and Section 4(f) impacts
Output:	Published notice(s) in area newspapers and on the Iowa DOT website
Affected Parties:	Office of Location & Environment – Public Involvement section, District Office, Office of Right of Way, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
P14	Corridor Preservation
Action:	Notify appropriate local officials and the public of the implementation, renewal, or modification of a corridor preservation zone (CPZ) in the area of a possible road improvement.
Purpose:	To preserve the right of way needed for possible roadway improvements.
Input:	<ul style="list-style-type: none"> • Approval of the Highway Division Director to implement corridor preservation • Approval by the Iowa Transportation Commission for funding • Limits of the CPZ • Map identifying the CPZ • Approved staff action • List of appropriate local (city and county) officials
Output:	Notice to local officials of the implementation, renewal, or modification of a CPZ, and published CPZ notice and map in area newspapers

Affected Parties:	Office of Location & Environment – Public Involvement section, District Office, Office of Right of Way, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The District and the Office of Location & Environment are responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
P15	Public Hearing
Action:	Present to the public the Environmental Assessment (EA) or Environmental Impact Statement (EIS) and the potential impacts of the alternatives for potential road improvement projects.
Purpose:	To conduct a public hearing to inform property owners and the public about project alternatives and to receive their input concerning those alternatives. Tools used for the public hearing include letters, newsletters, media contacts, press releases, displays, exhibits, handouts, and a formal presentation with a question and answer session .
Input:	<ul style="list-style-type: none"> • EA or EIS • Project alternatives • Project footprint • Certified list of potentially affected agricultural land owners (as defined in Iowa Code Chapter 6B) (if applicable) • List of non-agricultural property owners (as defined in Iowa Code Chapter 6B)
Output:	Increased public awareness, input into project development, and increased knowledge of environmental issues
Affected Parties:	Office of Location & Environment – Public Involvement section, District Office, Office of Right of Way, Office of Design, Office of Bridges & Structures, Office of Contracts, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
PL1	Planning Concept - Range of Alternatives
Action:	Develop a range of alternatives that meet the purpose and need for the project using current design software.
Purpose:	To document the work in developing a range of alternatives that are bounded by the project study area and meet the purpose and need for the project. The range of alternatives will be reviewed with Iowa DOT management and resource agencies for concurrence, as required.

Input:	<ul style="list-style-type: none"> • Planning study corridor • Design criteria and guiding principles • Purpose and need for the project • Preliminary access control determination • Existing and proposed land use • Existing and design year traffic projections • Existing and design year traffic analysis • Bypass evaluation (as needed) • Planning level or Light Detection and Ranging (LiDAR) digital terrain model (DTM) and digital aerial photographs (D01) • Existing conditions analysis • Potential Borrow and Alignment Review (S01) • Preliminary Wetland Review (W00) • Threatened/Endangered Species Review (TE0) • Cultural Resources Assessment (H00) • Preliminary Regulated Materials Review (F01) • Stakeholder involvement activities (P09, P10, P14) (as needed) • Environmental constraint map documenting known environmental conditions in the planning study corridor area
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Output:	<p>A range of alternatives that satisfies the basic purpose and need for the project.</p> <p>A draft area of potential impact for each alternative to be used in evaluating potential environmental impacts.</p> <p>Identified potential bridge locations for each alternative for review and further development.</p> <p>A draft location study report and draft concept statement (P00) (written by either Iowa DOT staff or by consultant) that document the work done and decisions made in developing a range of alternatives. The draft location study report and concept documents the existing conditions evaluation, guiding principles and design criteria, agency coordination, context sensitive solutions, etc., or references this information contained in other reports.</p> <p>An opinion of probable cost for each alternative under consideration.</p>
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Affected Parties:	Office of Location & Environment – Location section, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
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PL2	Planning Concept - Refined Alternatives
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Action:	Refine the range of alternatives using current design software and adjust the alternatives as necessary to avoid or minimize potential impacts on environmental constraints identified in the environmental resources review.
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Purpose:	To document the work in refining the range of alternatives developed in the PL1 event. Through this process, specific alternatives in the range may be recommended for continued refinement or elimination from further consideration. The refined alternatives will be reviewed with Iowa DOT management and resource agencies for concurrence, as required.
Input:	<ul style="list-style-type: none"> • Planning Concept - Range of Alternatives (PL1) • Concurrence from the resource agencies on the Range of Alternatives (CP2) • Preliminary Wetland Review (W00) • Threatened/Endangered Species Review (TE0) • Threatened/Endangered Species Consultation and Clearance (TE1) • Phase I Archaeological Survey (H01) • Historic Architecture Survey and Evaluation (H03) • Public involvement activities (P09, P10, P14, P15) (as needed)
Output:	<p>Refined alternatives for review and concurrence at Concurrence Point 3 – Alternatives to be Carried Forward (CP3).</p> <p>An area of potential impact for each alternative to be used in evaluating potential environmental impacts.</p> <p>A draft location study report and draft concept statement (P00) (written by either Iowa DOT staff or by consultant) that document the work done and decisions made in developing the range of alternatives. The draft location study report and concept documents the existing conditions evaluation, guiding principles and design criteria, agency coordination, context sensitive solutions, etc., or references this information contained in other reports.</p> <p>An opinion of probable cost of each alternative under consideration.</p>
Affected Parties:	Office of Location & Environment – Location section, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
R00	Plot Plans and Summary Sheets to District
Action:	Prepare plot plans and summary sheets that summarize the right of way impacts on a parcel by parcel basis. Provide plot plans and summary sheets to the District Land Surveyor for use in completion of the Acquisition Plats and Legal Descriptions (T02).
Purpose:	To provide a milestone event marking the submittal of the completed right of way design and layout.

Input:	<ul style="list-style-type: none"> • Reports of record ownership • Final design plans • Cross sections • Mitigation sites • Regulated materials determination
Output:	Completed right of way plot plan and summary sheets
Affected Parties:	Office of Right of Way, District Land Surveyor, and Office of Rail Transportation
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
R01	Right of Way Layout
Action:	Perform right of way design and layout. Determine the proposed right of way needs, both permanent and temporary. Identify property ownership and order title information. Complete right of way plan, with a parcel checklist showing owner's names and areas of proposed acquisition.
Purpose:	To provide sufficient right of way design and layout in order to accomplish public contact requirements.
Input:	<ul style="list-style-type: none"> • Plans to Right of Way (D05) • Cross sections • Mitigation sites • Regulated materials determination
Output:	Initial right of way layout pending stakeholder input
Affected Parties:	Office of Right of Way, Office of Design, District Office, Office of Location & Environment, Office of Traffic & Safety – Utilities section, and Office of Rail Transportation
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
R02	Right of Way Appraisal
Action:	Provide an estimate of just compensation, as defined by the Iowa Code for that portion of property being acquired, including damage caused by the acquisition.
Purpose:	To provide a value basis for negotiation and/or condemnation process.

Input:	<ul style="list-style-type: none"> • Plan showing the right of way design and layout • Cross sections • Parcel file containing: <ul style="list-style-type: none"> ○ Report of liens indentifying the owners of record and containing the legal description of the total property ○ Plot plan and summary sheet ○ Survey plat and legal description (T02) (survey plats not required for temporary easements)
Output:	Written estimate of just compensation for use in negotiation and/or condemnation of the rights to be acquired
Affected Parties:	Office of Right of Way and Office of Rail Transportation
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
R03	Right of Way Negotiation
Action:	Negotiate an acquisition contract that is acceptable to both Iowa DOT and the property owner.
Purpose:	To acquire the necessary land, temporary easements, access rights, or other rights for the construction and maintenance of transportation facilities .
Input:	<ul style="list-style-type: none"> • Plan showing the right of way design and layout • Cross sections • Appraisal of the real estate value • Parcel file containing: <ul style="list-style-type: none"> ○ Report of liens indentifying the owners of record and containing the legal description of the total property ○ Plot plan and summary sheet ○ Survey plat and description (T02) (survey plats not required for temporary easements)
Output:	Acquisition contract acquiring the property and/or rights needed for the project
Affected Parties:	Office of Right of Way
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

R04	Right of Way Acquisition
Action:	Provide and secure signed transfer documents from landowners. Acquire the necessary land, temporary easements, access rights, or other rights for the construction and maintenance of transportation facilities either through friendly acquisition contracts or eminent domain action when an acquisition contract is not signed by the owner.
Purpose:	To provide clear title through friendly acquisition contracts or the eminent domain process and provide a method for the landowner to receive just compensation under the Iowa Code.
Input:	<ul style="list-style-type: none"> • Completion of good faith negotiations • Right of way notice to landowner in the case of eminent domain action • Current report of liens • Plan showing the right of way design and layout • Cross sections • Appraisal of the real estate value • Survey plat and description for permanent acquisitions and, in the case of eminent domain actions, survey descriptions for temporary acquisitions • Staking of the proposed acquisition (in the case of eminent domain actions) • Compliance with notification requirements of Iowa Code Chapter 6B (in the case of eminent domain actions)
Output:	Legal transfer of the title from the landowner to the state of Iowa (State) occurs using properly executed signed documents or the eminent domain process; the landowners would receive just compensation. (Possession of required right of way occurs unless personal property relocation is required.)
Affected Parties:	Office of Right of Way, District Office, Office of Contracts, and Office of Traffic & Safety – Utilities section
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
R05	Right of Way Relocation
Action:	Assist the owner, tenant, or business in finding alternative housing or an alternative business location.
Purpose:	To provide decent, safe, and sanitary housing for displaced residents or to help re-establish business operations.
Input:	<ul style="list-style-type: none"> • Identification of owner- or tenant-occupied residences or businesses affected by the acquisition (needed for the relocation study) • Signed acquisition contract or acquisition through eminent domain (needed after the study and prior to paying relocation benefits) • Appraisal of real estate value (needed to determine owner- or tenant-occupied residential relocation benefits)

Output:	A vacated property (The owner, tenant, or business has relocated to alternative housing or facilities, and the property is clear for demolition or removal of structures.)
Affected Parties:	Office of Right of Way, District Office, and Office of Contracts
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
R07	Right of Way Field Exam
Action:	Review in the field what impacts the proposed right of way and project have on the properties along the project.
Purpose:	To provide an on-site review of the proposed design. To make final adjustments, if needed, to minimize adverse impacts on affected properties while ensuring that all construction and maintenance needs are covered by the proposed right of way. To confirm that access needs of the properties are being addressed in accordance with Iowa DOT's Access Policy.
Input:	<ul style="list-style-type: none"> • Plans to Right of Way (D05) • Reports of record ownership • Cross sections • Mitigation sites • Regulated materials determination • Plan showing right of way design and layout
Output:	Recommended adjustments to the right of way plan to complete the Right of Way Layout (R01)
Affected Parties:	Office of Right of Way, District Office, Office of Design, Office of Bridges & Structures, Project Management Team, and local officials
Responsible Office:	The Office of Right of Way is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
RR00	Office of Rail Concept Review
Action:	Review and evaluate the project concept for impacts on railroads that would require an agreement and/or special provision. Project concepts to be reviewed would involve repair and rehabilitation of bridge and culvert structures, extensive riprap projects that protect a road embankment, and bridge or surface improvements including repair and replacement of various structural elements and roadway surfaces.

Purpose:	<p>To allow the Office of Rail Transportation to review projects at early stages of development, including the purpose of and need for the project, to determine whether there is railroad involvement.</p> <p>To consider impacts on railroads at the earliest practical time in project development, to avoid and minimize impacts to the extent practicable, and to diligently pursue cooperation and consultation so that Iowa DOT and railroad companies are involved at key decision points.</p>
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Input:	<ul style="list-style-type: none"> • Current project files, such as bridge and roadway maintenance reports/bridge maintenance repair recommendations, existing bridge and roadway plans, rating files, sufficiency inventory and appraisal (SI&A) • Programming schedule and cost data • Survey for revetment projects • Assistance from the Office of Design in identifying traffic control, erosion, and other pertinent issues
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Output:	<p>Office of Rail Transportation review date</p> <p>Determination of involvement by the Office of Rail Transportation and railroad companies</p> <p>Railroad clearance issues</p> <p>Railroad company(ies) involved</p> <p>Notes from the Office of Rail Transportation on its initial review of the project concept</p>
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Affected Parties:	Office of Rail Transportation, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
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Responsible Office:	The Office of Rail Transportation is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
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RR01	Initial Railroad Concurrence Review
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Action:	Meet with the railroad company(ies) to introduce new projects, provide project background information, and obtain concurrence on the feasibility of the project as presented from the railroad company's point of view.
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Purpose:	<p>To consider impacts on railroads at the earliest practical time in project development, to avoid and minimize impacts to the extent practicable, and to diligently pursue cooperation and consultation so that appropriate railroad companies are involved at key decision points.</p> <p>To provide information to the railroad company(ies) to gain concurrence that the purpose and need sufficiently addresses the specific project issues.</p> <p>To identify any railroad company concerns that can be addressed during the project development process.</p>
Input:	<ul style="list-style-type: none"> • Project plans, preferably from the Design Field Exam (D02) or Drainage Design and Miscellaneous Layout to Office of Design (B02) stage or greater, if available • Bridge maintenance reports/bridge maintenance repair recommendations, existing bridge plans, rating files, and sufficiency inventory and appraisal (SI&A) • Programming schedule and cost data • Survey for revetment projects • Assistance from the Office of Design in identifying traffic control, erosion, and other pertinent issues
Output:	Additional information from the railroad company(ies) that may guide the alternatives development phases
Affected Parties:	District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Rail Transportation is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
RR02	Railroad Review of ROW Easement
Action:	<p>Determine right of way needs, and provide right of way needs and an estimate of just compensation, as defined by the Iowa Code, to the railroad company's real estate department for review. The estimate should also include damage caused by the acquisition. Specific activities include the following:</p> <ul style="list-style-type: none"> • Receive right of way design and layout from the Office of Right of Way. <ul style="list-style-type: none"> ○ Identify property ownership, and order title information. ○ Determine the proposed right of way needs, both permanent and temporary. ○ Complete the right of way plan, with a parcel checklist showing owner's names and areas of proposed acquisition. • Determine a value basis for negotiation for right of way. • Provide right of way needs and an estimate of just compensation to the railroad company's real estate department for review. • Receive input from the railroad company to develop an exhibit for the Construction & Maintenance Agreement.

Purpose:	To provide sufficient right of way design and layout in order to allow a railroad company's real estate department to review it and to work with the Office of Rail Transportation to create an exhibit for the Construction & Maintenance Agreement.
Input:	<ul style="list-style-type: none"> • Plans to Right of Way (D05) • Cross sections • Mitigation sites • Plan showing the right of way design and layout • Regulated materials determination • Parcel file containing: <ul style="list-style-type: none"> ○ Legal description of the total property ○ Plot plan and summary sheet ○ Survey plat and legal description (T02) (survey plats ARE required for temporary easements)
Output:	<p>Initial right of way layout pending public input</p> <p>Written estimate of just compensation for use in negotiation of the rights to be acquired</p>
Affected Parties:	Office of Rail Transportation, District Office, Office of Design, Office of Bridges & Structures, Project Management Team, Office of Right of Way
Responsible Office:	The Office of Rail Transportation, Office of Right of Way, Office of Design, or Office of Bridges & Structures is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
RR03	Final Railroad Concurrence Point
Action:	Submit a near complete set of plans to the Office of Rail Transportation with all the design information necessary for the Office of Rail Transportation to complete its analysis of the type, size, and location (TS&L) of the structures or surfaces.
Purpose:	To provide the Office of Rail Transportation with the design information it needs to complete its railroad negotiations/review, and its assessment of the TS&L of the culverts, bridges, and other drainage structures required on the project.
Input:	<ul style="list-style-type: none"> • Plans and cross sections from the Plans to Right of Way (D05) submittal or greater • Complete right of way parcel file containing the items listed under Railroad Review of ROW Easement (RR02) • Final Construction & Maintenance Agreement • Draft of contract specifications and a decision on protective insurance limits • Sheet submittals from other offices or consultants, completed soils information (S03), and any comments received during plan review
Output:	Updated draft plans and cross sections including adjustments from the field exam and proposed ditch grades

Affected Parties:	Office of Rail Transportation, District Office, Office of Design, Office of Bridges & Structures, Project Management Team, Office of Right of Way
Responsible Office:	The Office of Rail Transportation is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
RR04	Railroad Agreement
Action:	Update the railroad company on the project status and obtain concurrence on Construction & Maintenance Agreement language. Ensure that the Construction & Maintenance Agreement, with all exhibits attached, has been reviewed and is adequate to advance to the execution stage.
Purpose:	To gain concurrence with the railroad company, at the final stages of development, that the preferred alternative sufficiently addresses the concerns of the railroad company. To ensure that the information provided and the data collected are adequate for the railroad company to convey title to land, and execute agreement documents within the project schedule.
Input:	<ul style="list-style-type: none"> • Final plans (D06/D07/D08/D09) • Cross sections • Plan showing the right of way design and layout • Traffic control and construction staging • Exhibit for right of way containing: <ul style="list-style-type: none"> ○ Legal description of the total property ○ Plot plan and summary sheet ○ Survey plat and legal description (T02) (survey plats ARE required for temporary easements) ○ Compensation estimate or appraisal
Output:	<p>Executed Agreement</p> <p>Removal of railroad clearance on project</p> <p>Notice to Systems Operations Bureau – Specifications section for creation of SP, SS, or DS (Design will use specification language to select appropriate Bid Items for Railroad Protective Insurance and other insurance requirements prior to plan turn-in date.)</p>
Affected Parties:	District Office, Office of Design, Office of Bridges & Structures, Systems Operations Bureau – Specifications section, Office of Right of Way
Responsible Office:	The Office of Rail Transportation is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

RR05	Railroad Protective Insurance Review Post Letting
Action:	Receive from the presumed low bidder its insurance policy with described limits of coverage indicated by Bid Items. Confirm the inclusion of bid items consistent with the insurance requirements for the project (occurs post letting but prior to contract award). Provide this policy document to the railroad company's risk management department for review and concurrence prior to Iowa DOT executing the contract with the contractor.
Purpose:	To verify that the contractor has submitted the insurance documents called for in the bid items attached to the contract, and to provide an opportunity for the railroad company to review the insurance coverage that has been taken out by the contractor to cover the railroad company for work in the railroad right of way.
Input:	<ul style="list-style-type: none"> • Specifications attached to plans prior to plan turn-in • Selected Bid Items based on specification language added to plans
Output:	<p>Concurrence from the railroad company's risk management department</p> <p>An executed contract with a contractor as the project advances to the construction phase</p>
Affected Parties:	Office of Rail Transportation, District Office, Office of Construction, Project Management Team, Office of Contracts, Office of Finance
Responsible Office:	The Office of Contracts is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
S01	Potential Borrow and Alignment Review
Action:	Review corridor and plan information for any grade or alignment changes that are necessary based on the Office of Design – Soils Design section's considerations, and identify multiple potential borrow sites. Potential borrow and alignment reviews are most common for grading projects but may be applicable to other project types as well.
Purpose:	To allow the Office of Design – Soils Design section's considerations and constraints to be incorporated into selection of the final horizontal and vertical alignment, and to allow survey coverage of and all clearances (for example, archaeological and environmental) for potential borrow sites to begin.
Input:	<ul style="list-style-type: none"> • Any available Environmental Impact Statement (EIS)-type information • Proposed corridor limits • Aerial photograph layout • Grade and alignment proposals • General borrow need, if known or estimated • Any other available and pertinent information <p>Note: This information is needed as soon as possible after preliminary engineering is completed and environmental data are collected (that is, as soon as corridor, alternative alignments, and other listed information is available).</p>

Output:	Documentation (submittal memo with attachments or links to include, but not be limited to, aerial photographs and design files) of any horizontal or vertical restrictions or any alignment area to avoid for geotechnical reasons, and of the limits of all potential borrow areas. The submittal will include discussion as necessary and appropriate.
Affected Parties:	Office of Design – Soils Design section
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
S02	Identification of Soils Related ROW Issues
Action:	Identify all soils-related items affecting right of way and/or requiring more right of way for a given project. Typically include final borrow selection as well as stability berms, backslope benches, and other stability features. Design changes made by others during this event must be conveyed as soon as possible to the Office of Design – Soils Design section to avoid delaying this event. Identification of soils-related right of way issues is most common for grading projects but may be applicable to other project types as well.
Purpose:	To allow right of way acquisition to start in a timely manner. Note: The Identification of Soils Related ROW Issues (S02) submittal is a part of the overall Plans to Right of Way (D05) submittal.
Input:	<ul style="list-style-type: none"> • Plan and profile sheets updated after the field exam to include all changes (except minor details) and considered final with respect to alignment and grade; includes “packaging” for grading projects (that is, breaking up a larger project into smaller grading projects), if known or estimated • Project cross sections • Final borrow need and distribution (mass diagram) • Project breaks • Location of all bridges, culverts, etc. <p>Note: Completion of the Identification of Soils Related ROW Issues (S02) event requires that most of the drilling be performed, which may require several months to complete. The above information is needed as soon as possible after the field exam has been completed, all necessary approvals have been obtained, and the final alternative has been selected.</p>
Output:	Documentation (submittal memo with attachments or links to include, but not be limited to, aerial photographs, plan sheets, and cross sections) defining additional right of way areas to acquire for the purposes of the Office of Design – Soils Design section (for example, final borrows and stability berms). The submittal will include a conceptual borrow design and discussion as necessary and appropriate.
Affected Parties:	Office of Design – Soils Design section and Office of Materials

Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
S03	Soils Design Complete
Action:	Complete and turn in all soils and soils-related work for grading and grading-related projects, including soils plan and profile sheets (Q sheets); subgrade treatment tab; longitudinal subdrain tab; shrinkage tab; incorporation of all stability items (for example, benches, berms, blankets, and drains) onto Q sheets and cross sections; all soils usage (that is, select) information on final cross sections; geotechnical designs for remediation, etc., on final cross sections; borrow sheets (R sheets) with final borrow design (plan view and profiles); borrow cross sections with identification and delineation of all soil types; any other required tabs; and anything else pertaining to soils design.
Purpose:	To provide all soils design requirements and plan sheets, etc., from the Office of Design – Soils Design section to a final design section in the Office of Design, and to provide all soils design sheets, tabs, and other items pertaining to soils design that go in the contract plans. Note: The Soils Design Complete (S03) submittal becomes a part of the overall design plan turn-in.
Input:	<ul style="list-style-type: none"> • Final plan and profile sheets • Final cross sections • Detailed borrow need from each borrow site • Any staging and packaging information • Any project breaks or similar item • All related final project information, including such things as culverts that will be let separately from the grading project with a different project number <p>Note: Project changes made at this time may delay completion of the Soils Design Complete (S03) event. The above information is needed after the contract packaging and during or near the end of final plan development. It is assumed that no grade or alignment changes occur during final plan development.</p>
Output:	Turn-in (to the Office of Design – Design section) of all items listed above in “Action.” The submittal will include discussion as necessary and appropriate.
Affected Parties:	Office of Design – Soils Design section and Office of Materials
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

S04	Soils Submittal to Bridge
Action:	Complete and turn in all structure-related soils and foundation work for bridges, culverts, and similar projects, including Soils Profile Sheets (SPS); the Report of Bridge Sounding; the Supplemental Report of Bridge Sounding (which includes settlement analysis, stability analysis, and input and recommendations on the type and design of foundation needed); core-outs or other types of needed ground improvements; and other items pertaining to soils- and foundation-related issues for the structure.
Purpose:	To provide to the Office of Bridges & Structures all soils design information and evaluation needed for use in design of foundation elements and in final bridge design plans as well as soils or soils-related plan sheets that go in the final bridge plans. Note: The Soils Submittal to Bridge (S04) becomes a part of the overall bridge plan turn-in. Portions of the Soils Submittal to Bridge (S04) become a part of the overall bridge plan.
Input:	<ul style="list-style-type: none"> • Type, size, and location (TS&L) of the culvert or bridge (also referred to as a Situation Plan) • Any other pertinent information available
Output:	Turn-in (to the Office of Bridges & Structures) of all items listed above in “Action.” The submittal will include discussion as necessary and appropriate.
Affected Parties:	Office of Design – Soils Design section and Office of Materials
Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
T01	Existing ROW, Property and Sections Lines in CADD
Action:	Locate or establish all property lines, section lines, existing road centerlines, and rights of way. Enter this information into GEOPAK and MicroStation, and create an ASCII or GPK file for the use of the Office of Design and the Office of Right of Way.
Purpose:	To locate, by analysis of the evidence and judgment, the exact location of all legal land lines and lines of occupation. This information is for the use of the Office of Design, the Office of Right of Way, and the District Land Surveyor.

Input:	<ul style="list-style-type: none"> • Global positioning system (GPS) control coordinates and monument locations • Aerial photographs • Proposed road corridor • Land owner records • Report of liens • County and city records • Section corner reference ties • Existing road as-built plans • Subdivision plats • Recorded surveys • Original government surveys • Original road establishment records • Permission to enter the properties • Fixed date of completion
Output:	<p>A layer produced in CADD with all lines shown graphically and an electronic file in ASCII or GPK form</p> <p>Certified Public Section Corner Certificates recorded on all section corners that will be used for the legal descriptions</p>
Affected Parties:	Office of Design, Office of Right of Way, and District Land Surveyor
Responsible Office:	The District is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
T02	Acquisition Plats and Legal Descriptions
Action:	Complete acquisition plats and legal descriptions for all parcels for a specific project.
Purpose:	To define the land parcels that will be acquired for a specific project by legally prescribed means dictated in the Iowa Code.
Input:	<ul style="list-style-type: none"> • Final design for each parcel of land • Complete set of final road plans • District survey (T01) information • Fixed date for completion
Output:	A legally certified land acquisition plat and legal description that meets the full requirements of the Iowa Code
Affected Parties:	Office of Design, Office of Right of Way, and District Land Surveyor
Responsible Office:	The District is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

TD01	Preliminary Traffic Engineering Layout
Action:	Determine the location, legend, and support structure type (overhead, independent structure or bridge, ground mounted) for Type B signs; location for signals; and location and support (pole or tower) for lights.
Purpose:	To allow avoidance of structure or structure footing for underground facilities. To allow review of impacts on design criteria such as the potential impact of median footing protection on sight distance. To allow the collection of soils data needed for subsequent design.
Input:	Plan and profile sheets considered final with respect to alignment and grade
Output:	A strip map or plan sheets indicating Type B signs, signal, or lighting layout
Affected Parties:	Office of Traffic & Safety – Traffic Engineering section, Office of Design, Office of Bridges & Structures, Office of Right of Way, and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
TD03	Traffic Engineering Info to Bridges
Action:	Incorporate changes from initial reviews. Plans should be of adequate detail to design supports and define any right of way needs.
Purpose:	To allow acquisition of any right of way necessary for signing, signals, or lights. To allow the Office of Bridges & Structures to begin design of non-standard support structures.
Input:	<ul style="list-style-type: none"> • Any changes necessitated by review of preliminary layout • Final cross sections
Output:	Plans indicating sign location and size, and anticipated supporting structure type and size
Affected Parties:	Office of Traffic & Safety – Traffic Engineering section, Office of Design, Office of Bridges & Structures, and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.

TD05	Plans for Other Offices
Action:	Submit final plans.
Purpose:	To provide plans for the letting process. Submittal for inclusion with another office's plan allows for assembly as a portion of a larger plan set.
Input:	Structural plans for non-standard supports
Output:	A final set of plans, requirements for special provisions, and construction estimate
Affected Parties:	Office of Traffic & Safety – Traffic Engineering section, Office of Design, Office of Bridges & Structures, and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
TE0	Threatened/Endangered Species Review
Action:	Review the action area to determine the likely presence or absence of any federally or state-listed plant or animal species. Reviews may be conducted via office data or field work depending on the project details.
Purpose:	To locate, identify, and characterize any federally or state-listed plant or animal species, or its habitat, within potential impact areas for a project. To allow full consideration of protected natural resources when evaluating alternatives or projects. To identify any resource agency concerns that can be addressed during the project development process.
Input:	<ul style="list-style-type: none"> • Maps, aerial photographs, or plan sheets showing project details, including any potential impact areas for a project • Property owner information for parcels within potential impact areas for a project • Geographic Information Systems (GIS) maps of known federally or state-listed plant or animal species locations from resource agencies • Data from environmental scoping process • Coordination with federal, state, or local resource agencies
Output:	A habitat or species survey report or technical memo for review and comment by the resource agencies and for inclusion in the environmental document and Section 404 permit Compliance with Iowa DOT's Endangered Species Act coordination procedures
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team

Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
TE1	Threatened/Endangered Species Consultation and Clearance
Action:	Consult informally or formally with resource agencies.
Purpose:	To secure concurrence regarding the determination of effect on federally or state-listed plant or animal species for a project. To satisfy Iowa DOT's Endangered Species Act Section 7 procedures and/or Iowa Code requirements.
Input:	<ul style="list-style-type: none"> • A habitat or species survey report or technical memo for review and comment by the resource agencies and for inclusion in the environmental document and Section 404 permit • Maps, aerial photographs, or plan sheets showing project details, including any potential impact areas for a project • Property owner information for parcels within potential impact areas for a project • Geographic Information Systems (GIS) maps of known federally or state-listed plant or animal species locations from resource agencies • Data from environmental scoping process
Output:	<p>Compliance with Iowa DOT's Endangered Species Act coordination procedures, which may include some or all of the following:</p> <ul style="list-style-type: none"> • A summary letter/memo and concurrence from reviewing resource agencies for inclusion in the environmental document – If the resource agencies do not concur, further studies may include additional habitat surveys, presence/absence surveys, collection of other additional data, and/or a Biological Assessment. • If a Biological Assessment is required, concurrence of the findings of the Biological Assessment by the U.S. Fish and Wildlife Service (USFWS) and Iowa Department of Natural Resources (Iowa DNR). • A Biological Opinion provided by USFWS. • An Incidental Take Statement provided by USFWS. • A concurrence/project review statement provided by Iowa DNR. • A green sheet listing any commitments agreed to with the resource agencies with respect to federally or state-listed plant or animal species.
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

TMP1	Work Zone Significant Project Determination
Action:	Review project concept against traffic volumes and location.
Purpose:	To determine if a project will be classified as a “Significant Project” in accordance with Iowa DOT’s Policies and Procedures Manual (PPM) 500.18. If a project is classified as significant, a Transportation Management Plan (TMP) will be required. Decisions on how to stage traffic and construct the project will be considered based on whether this project has been classified as being significant.
Input:	<ul style="list-style-type: none"> • Location description • Final concept • Traffic volumes
Output:	A determination regarding whether a project should be classified as a “Significant Project”
Affected Parties:	District Office, Office of Traffic & Safety, Office of Design, and Highway Division Management Team (HDMT)
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
TMP2	Work Zone Significant Project Plan Review
Action:	Submit the Transportation Management Plan (TMP) for review and comment.
Purpose:	To complete the TMP so that the information it contains may be used during final design as detailed decisions are made on how to stage traffic and construct the project. Road user and worker safety and accessibility in temporary traffic control zones shall be an integral and high priority element of every project. For “Significant Projects,” a TMP is required and shall consist of a Temporary Traffic Control Plan, a Transportation Operations Plan, and a Public Information Plan.
Input:	<ul style="list-style-type: none"> • Location • Final concept • Preliminary design • Traffic volumes
Output:	Transportation Management Plan
Affected Parties:	District Office, Office of Traffic & Safety, and Office of Design
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.

U00	Preliminary Utility Review
Action:	<p>Conduct a preliminary review of utilities in the project area, and update the Project Scheduling System (PSS) to reflect the information obtained. Specific activities include the following:</p> <ul style="list-style-type: none"> • Obtain the plans and concept, if available, and check for utility conflicts. • Run the Design Request System (One Call) to determine the extent of utilities in the project area, and put the reports in the project folder. • Select the utilities present in PSS, and answer basic questions if possible. • If major conflict is possible, communicate with the utility to determine the scope and whether early coordination is needed for possible design changes. • Put all information obtained in the project folders, and update PSS.
Purpose:	<p>To determine possible conflicts with utilities in the area.</p> <p>To alert utilities to the upcoming project if it is warranted.</p> <p>To gather utility information that is easily obtained.</p>
Input:	A defined field study area bounding the range of alternatives to be developed
Output:	Preliminary information gathered and stored in the proper project folders
Affected Parties:	Office of Design – Preliminary Survey section, Office of Location & Environment, and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
U01	General Project Info Submitted to Utilities
Action:	Submit preliminary notices to utilities, and request their present location information. Put information received in the project folders, update the Project Scheduling System (PSS), and provide information in the concurrence point process.
Purpose:	To determine possible conflicts in the preliminary design process so alignments can be chosen or altered to minimize utility relocation costs.
Input:	Alternatives for Concurrence Point 3 – Alternatives to be Carried Forward (CP3) chosen and presented in spatial format
Output:	Conflict information to facilitate alignment selection in early design stages
Affected Parties:	Office of Design – Preliminary Survey section, Office of Location & Environment, and District Office

Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
U02	Project Notification to Utilities
Action:	<p>Provide preliminary notification to utilities in the project area, and update the Project Scheduling System (PSS) to reflect the information obtained. Event U02 is required for Point 25 projects. Specific activities include the following:</p> <ul style="list-style-type: none"> • Obtain the plans and concept, if available, and check for utility conflicts. • Send available information to utility companies, and request a reply within 90 days. • Run the Design Request System (One Call) to determine the extent of utilities in the project area, and put the reports in the project folder if not done previously. • Select the utilities present in PSS, and answer basic questions if possible. • If major conflict is possible, communicate with the utility to determine the scope and whether early coordination is needed for possible design changes. • Put all information obtained in the project folders, and update PSS.
Purpose:	<p>To determine the number of possible utility conflicts and which utilities are in the area.</p> <p>To alert utilities to the upcoming project if it is warranted.</p> <p>To gather utility information that is easily obtained.</p>
Input:	Design Field Exam (D02) with field exam plans
Output:	Preliminary information, including utility-provided maps and plans if available, stored in the project utility folder
Affected Parties:	Office of Design and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

U03	1st Plan Submittal to Utilities
Action:	<p>Submit Right of Way Layout (R01) and design plan (D05) drawings to the utility companies. Record information received from the utility companies (their replies detailing whether they are impacted and their work plans if they are impacted are due within 90 days of Iowa DOT U03 drawing submittal). Event U03 is required for Point 25 projects. Specific activities include the following:</p> <ul style="list-style-type: none"> • Send plans to all utility companies unless it is known that they are not impacted. • Select the utilities present in the Project Scheduling System (PSS), and answer basic questions if possible. • Communicate with utilities to revise plans if needed, and request more information if needed. • Put all information obtained in the project folders, and update PSS.
Purpose:	<p>To determine the number of possible utility conflicts and which utilities are in the area.</p> <p>To alert utilities to the upcoming project if it is warranted.</p> <p>To gather more information on utilities.</p>
Input:	<ul style="list-style-type: none"> • Plans to Right of Way (D05) • Right of Way Layout (R01)
Output:	Utility-provided maps and plans, if available, stored in the project utility folder
Affected Parties:	Office of Design and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
U04	2nd Plan Submittal to Utilities
Action:	<p>Submit revised Right of Way Layout (R01) and design plan (D05) drawings to the utility companies if revisions have been made. Record information received from the utility companies (their replies detailing whether they are impacted and their work plans if they are impacted are due within 60 days of Iowa DOT U04 drawing submittal). Event U04 is required for Point 25 projects. Specific activities include the following:</p> <ul style="list-style-type: none"> • Send plans to all utility companies unless it is known that they are not impacted. Send plans if there have been changes or if Iowa DOT requires the utilities to change their plans since the first plan submittal (U03). • Communicate with utilities to revise plans if needed, and request more information if needed. • Put all information obtained in the project folders, and update the Project Scheduling System (PSS).

Purpose:	To determine the final plans and schedule for utilities that require relocation because of the project.
Input:	<ul style="list-style-type: none"> Plans to Right of Way (D05) Right of Way Layout (R01)
Output:	Utility-provided maps and plans, if available, stored in the project utility folder Approved utility work plans and relocation schedule
Affected Parties:	Office of Design and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
U05	Utility Agreement
Action:	Request cost estimates and plans from utilities. For utilities that meet requirements for payment of relocation expenses, write an agreement and have it signed by both the utility and Iowa DOT personnel. Pre-audit and staff action is completed for amounts more than \$50,000. Put notes in the Project Scheduling System (PSS).
Purpose:	To reimburse utilities that meet requirements for Iowa DOT coverage of relocation cost.
Input:	<ul style="list-style-type: none"> Plans to Right of Way (D05) Right of Way Layout (R01)
Output:	Approved agreement to cover the cost of relocations when reimbursement is warranted
Affected Parties:	Office of Finance
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
U06	Notice to Proceed to Utility
Action:	Give utilities official notice to proceed with the relocation, and record information in the Project Scheduling System (PSS). Notice is given at least 30 days before the utility is to move per its work plan. Event U06 is required for Point 25 projects.
Purpose:	To give utilities the notice to proceed with their relocation.
Input:	Completed right of way purchases
Output:	Notification sent to utilities

Affected Parties:	District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
U07	Utility Bid Attachment
Action:	Prepare and submit the Utility Bid Attachment (UBA) to the Office of Contracts, and record information in the Project Scheduling System (PSS). The UBA contains utility information of value to contractors and is included in the contract documents for letting. Event U07 is required for Point 25 projects.
Purpose:	To give contractors useful information they can use to bid on jobs where utilities may impact their costs.
Input:	Information from the utility companies
Output:	UBA document submitted to the Office of Contracts
Affected Parties:	Office of Contracts and District Office
Responsible Office:	The Office of Traffic & Safety is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
VE1	Value Engineering Study during Planning Phase
Action:	During the planning stages of project development, use a multidisciplinary team to generate alternatives, design variations, or other methods and concepts that offer higher value and/or lower life-cycle costs without sacrificing safety, quality, and environmental attributes of the project.
Purpose:	To improve project quality, foster innovation, eliminate unnecessary and costly design elements, compare the proposed alternatives to other value engineering (VE) alternatives, and determine if there are other equal or better means to accomplish the same function at a lower life-cycle cost.
	Note: A VE study may be conducted at any time, but this event is intended to allow studying the early decisions of corridor and alignment during the planning stage.

Input:	<ul style="list-style-type: none"> • Aerial photographs • Office of Location & Environment CADD files • Preliminary bridge locations • Property owner information • Utilities, railroads, and other facilities within the project corridor that could affect project costs • Wetlands and other environmentally sensitive areas • Key concerns of stakeholders • List of project commitments
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Output:	Completed VE study for distribution to the VE coordinator, who compiles and distributes to the Federal Highway Administration (FHWA) a VE workbook report detailing the VE team’s findings and recommendations
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Affected Parties:	District Office, Office of Design, Office of Bridges & Structures, Office of Right of Way, Office of Traffic & Safety, Office of Location & Environment, and Project Management Team
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Responsible Office:	The Office of Design is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
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VE2	Value Engineering Study during Design Phase
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Action:	During the design stages of project development, use a multidisciplinary team to generate alternatives, design variations, or other methods and concepts that offer higher value and/or lower life-cycle costs without sacrificing safety, quality, and environmental attributes of the project.
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Purpose:	To improve project quality, foster innovation, eliminate unnecessary and costly design elements, compare the proposed alternatives to other value engineering (VE) alternatives, and determine if there are other equal or better means to accomplish the same function at a lower life-cycle cost.
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Note: The purpose is not to reopen or reconsider the location selection or environmental commitments already made or about to be made.

Input:	<ul style="list-style-type: none"> • Aerial photographs • Office of Design CADD files • Bridge type, size, and location (TS&L) determinations • Property owner information • Utilities, railroads, and other facilities within the project corridor that could affect project costs • Wetlands and other environmentally sensitive areas • Key concerns of stakeholders • List of project commitments
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Output:	Completed VE study for distribution to the VE coordinator, who compiles and distributes to the Federal Highway Administration (FHWA) a VE workbook report detailing the VE team’s findings and recommendations
Affected Parties:	District Office, Office of Design, Office of Bridges & Structures, Office of Right of Way, Office of Traffic & Safety, Office of Location & Environment, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.
W00	Preliminary Wetland Review
Action:	Review project concept statement with regard to waters of the U.S., including wetlands, threatened and endangered species, and other natural resource issues. This review consists of a desktop review followed by a field review, if necessary.
Purpose:	<p>To provide information about natural resources to affected parties as early as possible during the project development process.</p> <p>To identify Section 404 permit requirements early in the project development process, such as whether a Section 404 permit will be required and what type of Section 404 permit may be necessary.</p> <p>To provide internal parties with project-specific recommendations for project development, particularly recommendations for avoidance or minimization of sensitive natural resources.</p> <p>To identify potential mitigation needs for the project, including, but not limited to, wetlands, streams, and federally or state-listed species.</p>
Input:	<ul style="list-style-type: none"> • Project concept statement (Pre-Design Concept [D00]; Bridge Office Concept [B00]/type, size, and location [TS&L]; Detailed Damage Inspection Report [DDIR]; etc.) • Aerial photographs • Geographic Information Systems (GIS) data sets
Output:	Preliminary Wetland Review (W00) memo to the responsible office that includes a summary of natural resources in the vicinity of the project, regulatory and permit requirements, project development recommendations, and mitigation needs. Generally, a Preliminary Wetland Review (W00) memo is provided within 1 month of the Pre-Design Concept (D00).
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event’s completion date, along with any additional information specific to this event, into PSS.

W01	Wetland Design Review
Action:	Review preliminary project design (Design Field Exam [D02] letter and plans) with regard to waters of the U.S., including wetlands, threatened and endangered species, and other natural resource issues.
Purpose:	To provide feedback regarding the Design Field Exam (D02), borrow selection, and other design related issues.
Input:	<ul style="list-style-type: none"> • Design Field Exam (D02) plans • Preliminary borrow location and design plans
Output:	A Wetland Design Review (W01) memo to the responsible office that includes regulatory and permit requirements, project development recommendations, and mitigation needs. Generally, a Wetland Design Review (W01) memo is provided within 1 month after the Design Field Exam (D02) concept.
Affected Parties:	Office of Location & Environment, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
W02	Wetland Field Work
Action:	Perform field work to identify and quantify waters of the U.S., including wetlands, that would be impacted by the project.
Purpose:	To perform wetland delineations and stream determinations in order to determine whether a Section 404 permit will be required for a project. To collect the field data that are necessary to prepare and submit the Section 404 permit application.
Input:	Detailed project information, including: <ul style="list-style-type: none"> • Roadway alignment • Structure details • Right of way needs • Project schedule
Output:	Field data, including wetland delineation forms, stream determination forms, ground-level photographs, and maps showing sample point locations and impacted water resources, which are then incorporated into the Section 404 permit application. Generally, Wetland Field Work (W02) is completed at least one full growing season prior to 404 Permit Submittal (W03).
Affected Parties:	Office of Location & Environment – Water Resources section, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team

Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
W03	404 Permit Submittal
Action:	Submit the Section 404 permit application to resource agencies, including the U.S. Army Corps of Engineers (USACE), the Iowa Department of Natural Resources (Iowa DNR), the U.S. Environmental Protection Agency (EPA), and the U.S. Fish and Wildlife Service (USFWS).
Purpose:	To submit the Section 404 permit application to resource agencies for their review in order to obtain Section 404 authorization from USACE and Section 401 authorization from Iowa DNR.
Input:	Detailed project information, including: <ul style="list-style-type: none"> • Roadway alignment • Structure details • Plans to Right of Way (D05) limits • Right of way needs • Project schedule
Output:	Notice to the responsible office that the Section 404 permit application has been submitted. Generally, Section 404 Permit Submittal (W03) occurs 13 months prior to the first letting for larger projects that will require an Individual Permit and 6 months prior to the first letting for smaller projects covered by a Nationwide or Regional Permit.
Affected Parties:	Office of Location & Environment – Water Resources section, District Office, Office of Design, Office of Bridges & Structures, Project Scheduling Engineer, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
W04	404 Permit Clearance
Action:	Submit a memo notifying affected parties that a project has received Section 404 and Section 401 authorization. Include in this memo other permit and project information, including the permit number, permit type, authorization date, expiration date, applicable standard notes and general specifications, permit special conditions, and mitigation information.
Purpose:	To inform affected parties that a project has received Section 404 and Section 401 authorization for a particular project. To inform affected parties of special notes or permit conditions that may apply to a project.

Input:	<ul style="list-style-type: none"> • Section 404 permit • Section 401 Water Quality Certification
Output:	<p>Clearance memo that notifies the responsible office of permit receipt. It is Iowa DOT's goal to receive Section 404 permits at least 6 months in advance of the letting.</p> <p>Entry and indexing of the Section 404 permit into the Electronic Records Management System (ERMS).</p>
Affected Parties:	Office of Location & Environment – Water Resources section, District Office, Office of Design, Office of Bridges & Structures, and Project Management Team
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.
W05	Mitigation Submittal to Other Offices
Action:	Submit mitigation plan sheet(s) to affected parties for inclusion in project letting plans.
Purpose:	<p>To provide affected parties with design and details of on-site wetland, stream, or federally or state-listed species mitigation areas to be included in plan sets developed by other offices.</p> <p>To provide a method for smaller, on-site mitigation measures to be incorporated into the overall roadway or bridge/culvert project so that a separate contract for mitigation construction is not necessary.</p>
Input:	<p>Detailed project information, including:</p> <ul style="list-style-type: none"> • Roadway alignment • Structure details • Plans to Right of Way (D05) limits • Right of way needs • Completed design for proposed mitigation measures
Output:	Submittal of mitigation plan sheet(s) to affected parties, at least 2 weeks prior to plan turn-in by the responsible office
Affected Parties:	Office of Location & Environment – Water Resources section, District Office, Office of Design, and Office of Bridges & Structures
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

W06	Mitigation Post Construction Report
Action:	Complete a Post-Construction Report for a wetland or stream mitigation site for the U.S. Army Corps of Engineers (USACE) and the Iowa Department of Natural Resources (Iowa DNR).
Purpose:	To satisfy conditions of the Section 404 permit; these conditions require Iowa DOT to provide USACE and Iowa DNR with a Post-Construction Report upon completion of the mitigation site. The Post-Construction Report provides the resource agencies with evidence that a site has been completed and that the site was constructed to meet the requirements of the Section 404 permit.
Input:	<ul style="list-style-type: none"> • Post-construction survey for a mitigation site • Documentation of any changes made during construction of the site • Verification of plant species seeded and/or planted at the site
Output:	A Post-Construction Report that includes permit information, mitigation site location and design objectives, as-constructed details and drawings of the mitigation site, and seeding and planting information. The report must be completed by the date specified in the Section 404 permit, which is usually within 1 year of mitigation project completion.
Affected Parties:	Office of Location & Environment
Responsible Office:	The Office of Location & Environment is responsible for the overall management of the event and for entering the event's completion date, along with any additional information specific to this event, into PSS.

Chapter 3

How a Project is Initiated

CHAPTER 3

HOW A PROJECT IS INITIATED

(see Appendix G, How a Project Gets Programmed)

Identification of and investments in Iowa's transportation infrastructure needs are initiated in various ways. Asset management, public input, local government input, and engineering judgment are used to recommend prioritized needs to the Iowa Transportation Commission (Commission). Ultimate project programming is then based on development time as well as actual and projected revenue from both State of Iowa (State) and federal sources. This is generally true without regard for the route designation (that is, primary or interstate). An overview of the project initiation and programming process is provided in the Iowa Department of Transportation's (Iowa DOT's) publication *Investing In Iowa's Future*.

Once a project need has been identified, Iowa DOT uses its Project Scheduling System (PSS) to provide a development schedule and then track development time as well as project costs. PSS classifies project work as one of three basic types and further provides a basic scheduling template for each type of work (see Appendix C, Project Types). The PSS nomenclature for type of work is provided below along with the characteristics of each type:

1. **Major Change (Type I project)**¹
 - a. **Location:** Is located on a new alignment or is relocated along a major portion of the highway section.
 - b. **Grades:** Uses completely new grade lines or retains very small segments of the existing grade lines.
 - c. **Lanes:** Uses two lanes, changes from two lanes to multi-lane either divided or undivided, or includes **right of way** acquisition for future multi-lane construction.
 - d. **Shoulders and foreslopes:** Is paved or granular, consistent with design guidelines for the proposed roadway template.
 - e. **Right of way:** Requires substantial right of way acquisition.
 - f. **Public access:** If a freeway or **expressway** system, public access is restricted to interchange locations or limited to at-grade connections; otherwise, public access would remain the same or involve only minor adjustments.
 - g. **Private access:** If a freeway or expressway system, private access may be restricted to use of frontage roads or points of public access; otherwise, private access could involve changes with the limitations on number and location in areas of right of way acquisition.
 - h. **National Environmental Policy Act (NEPA) classification:** Typically requires an **Environmental Impact Statement (EIS)** and **Record of Decision (ROD)** or requires a major **Environmental Assessment (EA)** and **Finding of No Significant Impact (FONSI)**.
2. **Minor Change (Type II project)**¹
 - a. **Location:** Generally uses the existing location.
 - b. **Grades:** Generally uses the existing grade lines.
 - c. **Lanes:** Remains the same in number but could allow widening.

¹ The difference between Type I and Type II projects is often determined by the project's Purpose and Need statement, the detailed project concept, the need for right of way acquisition, the magnitude of possible environmental impacts, and the potential for public controversy.

- d. Shoulders and foreslopes: Is paved or granular, consistent with design guidelines for the proposed roadway template.
 - e. Right of way: Usually requires some additional right of way acquisition.
 - f. Public access: Remains the same or involves only minor adjustments.
 - g. Private access: Could involve changes with limitations on number and location in areas of right of way acquisition; would not normally involve frontage roads.
 - h. NEPA classification: Typically requires an EA and FONSI or requires a countersigned [Categorical Exclusion \(CE\)](#).
3. **Stewardship** (that is, repair, replacement, or operations improvement) ([Type III project](#))
- a. Location: No change.
 - b. Grades: No change requiring additional right of way acquisition except in isolated circumstances.
 - c. Lanes: No change; width may change and turning lanes may be added.
 - d. Shoulders and foreslopes: Use as constructed (UAC) except in isolated circumstances.
 - e. Right of way: No additional right of way acquisition required except in isolated locations.
 - f. Public access: No change.
 - g. Private access: No change.
 - h. NEPA classification: Typically requires a countersigned CE or [Programmatic CE \(PCE\)](#).

3.1 PROJECT CONCEPT

Every Iowa DOT project can be categorized by type, as discussed above, as well as by project [concept](#). A concept is a recommendation as to the nature and extent of work required. Iowa DOT's project concepts include the following:

- Bridge replacement and bridge rehabilitation projects
- Road projects
- Safety projects
- Traffic Safety Improvement Program projects
- Intelligent Transportation System projects
- Emergency and Contingency Fund projects
- Emergency relief projects

Any project concept could be a major change (Type I), a minor change (Type II), or stewardship (Type III).

For each of the aforementioned project concepts, projects are identified, funded, and programmed as discussed in [Sections 3.1.1 through 3.1.7](#).

3.1.1 Bridge Replacement and Bridge Rehabilitation Projects

Bridge replacement projects and bridge rehabilitation projects (including bridge repairs and overlays, maintenance bridge projects, culvert replacements, riprap [revetment] projects, and emergency repairs) are identified, funded, and programmed as discussed in [Sections 3.1.1.1 through 3.1.1.6](#). Additional details about the [development process](#) for bridge projects are discussed in [Section 3.1.1.7](#).

3.1.1.1 Bridge Replacements

All bridge-sized structures are inspected every 2 years, and an inspection report is prepared. The inspection report identifies deficiencies and overall condition. Each structure is assigned a sufficiency number and tagged if it is deficient or obsolete. The sufficiency number is based on a number of variables, including element condition and traffic counts. Any structure that is labeled deficient or obsolete and has a sufficiency rating of less than 50 is eligible for federal funding for bridge replacement.

Every year, the Office of Bridges & Structures (OBS) meets with each district to discuss bridge issues. Based on conditions documented in each bridge inspection report and bridge history provided by field maintenance personnel, candidates for replacement are discussed, prioritized, and entered in a database. During the initial assessment of needs or during the project concepting phase, OBS will address whether the structure should be concepted for replacement or repair.

During the yearly programming cycle, OBS reviews the candidates and proposes a certain level of funding (for example, \$40 million in State fiscal year [SFY] 2012) for programming new projects (replacements and repairs) for the non-interstate [primary road system](#). In addition, bridges on the Interstate System in need of replacement or repair are identified. The interstate bridges have no fixed dollar figure; the interstate projects are based on need and condition of the candidates. A preliminary cost estimate for each project is developed by OBS based on approximate bridge sizes and assumed bridge approach work. The intent of programming a targeted dollar figure (\$40 million in SFY2012) for bridge work is to work toward reducing the deficient and obsolete structures on the highway system. Other issues may drive replacement projects, including specific route upgrades and traffic volumes. The extent of the replacement project, especially on an interstate, may result in discussions with the Office of Location & Environment (OLE) and the Office of Design (Design).

The bridge replacement program is then reviewed and balanced, and projects are added or amended as needed to meet the overall objectives of the Five-Year Transportation Improvement Program (Five-Year Program). These additions and changes are reviewed by the Highway Division Director, the Project Delivery Bureau Director, and the Office of Program Management prior to completing the draft Five-Year Program. OBS will provide a final project list to the Project Scheduling Engineer (PSE). The PSE will be responsible for obtaining project numbers and establishing development schedules in PSS. Bridge replacement projects are assigned to the Design – Pre-Design section, which writes the formal concept.

Every year, the Office of Bridges & Structures meets with each district to discuss bridge issues, including prioritizing candidates for replacement.

3.1.1.2 Bridge Repairs and Overlays

To identify bridge repair projects, procedures similar to those used to identify bridge replacement projects, discussed in [Section 3.1.1.1](#), are followed. Typically, OBS would identify a certain level of funding (for example, \$5 million to \$8 million in SFY2012) in repair and overlay projects to program (this is part of the \$40 million [SFY2012] dedicated to primary road system bridge projects). Interstate repairs are also identified based on need. As with the replacement candidates, the repair candidates are reviewed by the Highway Division Director, the Project Delivery Bureau Director, and the Office of Program Management and entered in the Five-Year Program. After the repair and overlay projects are programmed, OBS will provide a final project list to the PSE. The PSE will be responsible for obtaining project numbers and establishing development schedules in PSS. OBS writes the formal concept with assistance from Design and the appropriate District Office.

3.1.1.3 Maintenance Bridge Projects

Maintenance Bridge (MB) projects are identified by each district in discussions with OBS at their yearly meeting to discuss bridge issues. Funding for MB projects is included in the Five-Year Program as a lump sum by State fiscal year in the Statewide Contract Maintenance line item (see [Section 3.2, Funding](#)). MB funding will be \$5 million to \$6 million (SFY2012) per year for projects that include painting, washing, deck patching, riprap, bridge approach work, and miscellaneous repairs. The number of projects is determined based on need and a distribution of funds among the six districts. Once MB projects are identified, OBS will provide a final project list to the PSE. The PSE will be responsible for obtaining project numbers and establishing development schedules in PSS. Typically, projects scheduled for the first 3 years of the Five-Year Program are identified and entered in PSS. The concept is written by OBS or the district depending on the specific work type. Bridge painting and washing projects do not require a written concept because the process is well documented.

Originally, MB funds were dedicated to bridge painting projects. The funding and eligible work types have been increased to accommodate miscellaneous repairs previously done by bridge maintenance crews. These repairs are identified in the biannual inspection reports generated by the OBS Maintenance and Inspection unit. The backlog of work identified in these reports has resulted in a need to contract out some of this work.

3.1.1.4 Culvert Replacements

To date, there is no formal process to program replacement of non-bridge-sized structures, or culverts, which are spans less than 20 feet long. Culverts are discussed at OBS's yearly meeting with each district to discuss bridge issues. If the district requests inspection, the culvert is assigned a Federal Highway Administration (FHWA) number by OBS and is inspected by the OBS Maintenance and Inspection unit. The district is responsible for identifying culvert candidates. These candidates are submitted by the district to the Office of Program Management to be placed on the Monitor List. The Monitor List is reviewed during the programming cycle by Iowa DOT's [Highway Division Management Team \(HDMT\)](#), and selected projects are entered in the Five-Year Program. OBS will provide a final project list to the PSE. The PSE will be responsible for obtaining project numbers and establishing development schedules in PSS. Concepting is performed similar to bridge replacement projects.

3.1.1.5 Riprap (Revetment) Projects

Riprap projects can be identified in a number of ways. During a routine inspection of a bridge-sized structure, the bridge inspection team may document the issue for further review, or the district may identify a site for review based on field observation. Once a site and need are identified, the information is submitted to the OBS – Preliminary Bridge section for further study. A concept, along with an estimate of cost and a proposed layout for the work, is also prepared by the OBS – Preliminary Bridge section. The district determines if the work will be done by field forces or if it will be programmed. If programming is selected, the district will discuss programming options with OBS. If MB funds are available and appropriate, the riprap project is noted as a candidate, and the district places the need on a list to be addressed in the next programming cycle. If MB funding is not appropriate and the [letting](#) is scheduled beyond the current State fiscal year, the district will submit the riprap project to the Office of Program Management to be placed on the Monitor List for future programming. If the need for riprap is an emergency or the letting needs to be scheduled in the current State fiscal year, the district will write a [staff action](#) requesting the use of Emergency & Contingency (E&C) funds.

3.1.1.6 Emergency Repairs

If a bridge is hit and damaged, or if the bridge inspection team identifies a critical issue during a routine inspection, OBS is notified. OBS will assign personnel to visit the site and document the damage. If an inspection team is on site, a field review may not be necessary. OBS writes the concept for repair and requests the use of E&C funds. OBS will provide project information to the PSE. The PSE will be responsible for obtaining a project number and establishing a development schedule in PSS. OBS also prepares a staff action to cover the funding associated with the project. Funding for the project comes from the Statewide Emergency & Contingency line item in the Five-Year Program.

3.1.1.7 Development Process

For complex bridge replacement or rehabilitation/repair projects, involvement of additional Iowa DOT offices may be required. OBS will work with Design and OLE to determine a lead office. If a targeted bridge replacement is within an area where added main-line capacity is needed or main-line relocation has been identified, Design or OLE will be involved with the development of a concept, [logical termini](#), and a [preferred alternative](#).

Whether a bridge project is eligible for federal aid depends on the work type, the bridge sufficiency rating value, and the structure's size (for example, a structure with less than a 20-foot span is not eligible for federal aid bridge funds). Iowa DOT has chosen to not request federal aid for most bridge repair work. Therefore, compliance with NEPA may or may not be required, and other [environmental permits and clearances](#) are concept and location dependent.

Routine cost and schedule updates are provided to the Project Delivery Bureau Director as a basis for annually adjusting the Five-Year Program schedule to accommodate fiscal constraints. Significant changes (cost or delivery time) are added to the Monitor List for future programming.

The need for outside services for design assistance is determined by OBS based on staff workload and proposed project schedules.

3.1.2 Road Projects

Road projects are identified, funded, and programmed as discussed in [Sections 3.1.2.1 through 3.1.2.6](#).

3.1.2.1 Resurfacing, Restoration, Rehabilitation, and Reconstruction

Resurfacing, restoration, rehabilitation, and reconstruction (4R) projects originate from many different sources, including the district, [metropolitan planning organizations \(MPOs\)](#), [regional planning affiliations \(RPAs\)](#), transportation management areas (TMAs), and the central complex offices. More often than not,

Because of the complexity of 4R projects, they often require more development time and are typically led by Design or OLE.

4R projects involve added capacity, involve access to or from the transportation system, or further local economic development opportunities. Because of the increased program cost, typical right of way needs, and development time of a 4R project, this type of project takes a more formal development route. Depending on the complexity of the project and origin of the concept, 4R project needs most often are vetted through the HDMT and routed to a Project Review meeting (see [Section 5.3.2](#)) for developing the Purpose and Need, assigning a lead office, and determining the

preliminary program year. During project initiation and after a Purpose and Need statement and logical termini are defined, the district determines if it has the in-house capability to design the project through letting. If not, the district will indicate a need for assistance in the planning and design effort. This effort

could be assigned to a local sponsor or to the central complex offices. For projects that will be completed by the central complex offices, Design and OLE will agree on which will serve as the lead office as follows:

1. If the concept involves minimal realignment and right of way needs, Design will serve as the lead office, with OLE having a secondary role to complete NEPA and obtain other environmental permits and clearances. In this situation, Design will:
 - Obtain a project number from the Office of Contracts.
 - Write and vet the concept.
 - Develop a schedule and provide it to the PSE.
 - Determine a preliminary cost estimate.
 - With district input, determine if a [Project Management Team \(PMT\)](#) is warranted and, if it is, then establish the PMT membership.
2. If the concept involves a new route, work within a major metropolitan area, major realignment, or significant right of way needs, OLE will serve as the lead office.

In most cases, this type of project will involve federal aid for construction and will require a location study, NEPA review and other environmental permits and clearances, and development of a preferred alternative. However, it is possible that the concept would lead to a Feasibility Study or a Major Investment Study, which does not include NEPA and stops short of a preferred alternative. In either case, OLE will assign the project to a Location Engineer, who will function as the Project Manager (PM). The PM, with input from the District Engineer (DE), will:

- Manage the day-to-day development needs of the project.
- Request a Preliminary Engineering project number from the Office of Contracts.
- Determine and vet with the Transportation Engineering Administrator the need for outside services.
- Request representation for a PMT.
- Develop a project schedule for vetting and ultimate inclusion in PSS.
- Develop and maintain a preliminary cost estimate and provide it as well as routine updates to the Project Delivery Bureau Director for addition to and tracking on the Monitor List.

3.1.2.2 *Resurfacing, Restoration, and Rehabilitation Modernization Program*

The Resurfacing, Restoration, and Rehabilitation (3R) Modernization Program is the major stewardship program for the primary road system. Each district is responsible for management of its 3R Program from project selection and development through construction. Individual projects are identified in the Five-Year Program for the current accomplishment year. Funding for the remaining years is included in the Five-Year Program as a lump sum by State fiscal year in the Non-Interstate Pavement Modernization line item (see [Section 3.2, Funding](#)). The Design – Pavement Design and Management section then sub-allocates funding levels to each district. The dollars are usually provided to the districts 6 to 9 months prior to the beginning of the State fiscal year. The Commission has given the Iowa DOT Highway Division Director authority to manage the 3R Program (that is, the Highway Division can add or remove projects by staff action) provided that Iowa DOT does not exceed the programmed amount for the current accomplishment year.

*The Highway Division
Director is responsible for
managing the 3R Program.*

Once funding levels are established, the first step is to develop a list of 3R candidate projects prioritized by State fiscal year. Each district develops a list of projects as well as a preliminary concept, project termini, and a preliminary cost estimate for each listed project. The total of all preliminary cost estimates for the proposed projects must not exceed the funding allocated to the district. Because of the time

The project concept is a critical first component in project development. It must identify any work needs that are required by other offices.

required for [project development](#), districts generally have a prioritized needs list of 3R projects that extends several years into the future. This list is updated as new needs are identified by district staff.

As district staff begins to develop a project, it requests a project number from the Office of Contracts and provides a copy of the request to the Design – Pavement Design and Management section. The request for a project number needs

to include the county, route, work type, location description, and estimated cost for the project. The request should also include a target date for the concept (D00), field exam (D02), and letting (L09). At the time a project number is assigned, the Office of Contracts enters the project in PSS. Once in PSS, the Project Scheduling section of the Project Delivery Bureau assigns other event dates as needed by work type.

The project concept is a critical first component in project development. It must identify any work needs that are required by other offices (that is, OLE, Design, Traffic & Safety [T&S], OBS, and Right of Way [ROW]). When no right of way is needed, the initial project concept should be completed at least 18 months before the anticipated letting. If right of way is needed, the concept should be developed at least 24 months before the target letting date. Most often, the NEPA process is initiated when a final concept is provided to OLE, and the NEPA document is completed concurrently with design of the project.

Based on the target funding allocations assigned, each district finalizes a project list for the upcoming State fiscal year. The list from each district is submitted by the respective Assistant District Engineer (ADE) to the Design – Pavement Design and Management section. The lists from all districts are assembled by the Design – Pavement Design and Management section and submitted to the Project Delivery Bureau. This is typically done in December of each year at the beginning of the Five-Year Program development process.

The compiled list from all districts is included in the draft Five-Year Program. Once the Five-Year Program is approved by the Commission, the 3R Program and the projects in that programming cycle are funded. The 3R projects are identified and funded for only the current accomplishment year, but are funded as a lump sum by State fiscal year for years two through five in the Five-Year Program.

Districts are typically responsible for leading project development of 3R projects.

For projects in the 3R Program, the district is responsible for preparing, vetting, and distributing the draft and final concept, managing the field exam, and developing the plans and bid documents. In some cases, the district may ask Design to complete the plans. The district must coordinate any special design needs with Design, OBS, and T&S. If the district has any special requests from the Office of Contracts for innovative contracting or increased liquidated damages, those requests need to be submitted 1 month before the plans are submitted to the Office of Contracts.

3.1.2.3 Maintenance Program

Individual maintenance program (MP) projects are not identified separately, but are programmed in the Five-Year Program as a lump sum by State fiscal year in the Statewide Contract Maintenance line item (see [Section 3.2, Funding](#)). MP funds are sub-allocated to each district by the HDMT through the Design – Pavement Design and Management section. Once the funds are assigned, each district submits a list of projects to the Design – Pavement Design and Management section. The information submitted must include the county, route, beginning and ending mile posts, work type, cost estimate, and target letting date. Then the district requests project numbers from the Office of Contracts, and the Design – Pavement Design and Management section enters the projects in PSS. Finally, the district develops the project plans.

Because MP projects are State funded and do not have a federal-aid component (with the exception of emergency relief [ER] projects, discussed in [Section 3.1.7](#)), there is no NEPA requirement. However, other environmental permits and clearances may be required to let the project. The Design – Pavement Design and Management section is responsible for providing a copy of the concept and project number to OLE.

3.1.2.4 Maintenance Program, Interstate - Nonparticipating

Maintenance Program, Interstate - Nonparticipating (MPIN) projects are maintenance projects that are specific to Iowa DOT's stewardship of the Interstate System and have a designated funding allocation from the Five-Year Program in the Statewide Contract Maintenance line item (see [Section 3.2, Funding](#)). Because MPIN projects are State funded and do not have a federal-aid component, there is no NEPA requirement. However, other environmental permits and clearances may be required. Historically, funding for MPIN projects has been \$8 million per year, which at a project level is divided into preventative maintenance (\$4 million per year) and patching (\$4 million per year).

Specific to the preventative maintenance work type, MPIN projects are selected by the Design – Pavement Design and Management section from a list of candidates submitted by the districts. Then a list of projects selected for MPIN funding is given to the districts, and the development process works the same as for MP projects, discussed in [Section 3.1.2.3](#).

3.1.2.5 Slide Repair

Slide repair projects are typically requested by the districts. Depending on the urgency of the repair, the district either processes a staff action for project approval and immediate funding, or requests that the Project Delivery Bureau Director add the need to the Monitor List. When the work is programmed, the Design – Soils Design section will obtain a project number from the Office of Contracts, write and vet the concept, and provide a preliminary cost estimate.

The PSE along with the Design – Soils Design section will develop a schedule to meet the proposed letting date. Generally, slide repair projects are State funded and do not have a federal-aid component; therefore, there is no NEPA requirement. However, other environmental permits and clearances may be required. The Design – Soils Design section is responsible for providing a copy of the concept and project number to OLE.

3.1.2.6 Local Public Agencies

Another source of projects on the primary road system and Interstate System originates with Local Public Agencies (LPAs). Most often, LPA-led projects originate from a local need on the local road system, but have a nexus to the State’s road system. Depending on the project’s concept and the HDMT’s input, project initiation and development could be one of the following:

1. Locally proposed and Iowa DOT developed
2. Locally proposed and locally developed

Projects that follow this path of initiation and development generally have a joint funding component and require the district to vet the concept early in the conceiving process at a Project Review meeting. All such projects are let through Iowa DOT. As with Iowa DOT-proposed and -led projects, LPA-led projects that involve the primary road system or Interstate System require an Iowa DOT project number and must be tracked in PSS. Iowa DOT’s management oversight is typically assigned to the district.

Iowa DOT is responsible for oversight of Local Public Agency projects and often leads development of those projects.

3.1.3 Safety Program

The Safety Program is Iowa DOT’s primary way to sponsor safety projects. The program uses a mixture of State and federal funds depending on the type of work being sponsored. When federal funds are used, projects are assigned a Highway Safety Improvement Program (HSIP) project number to indicate that federal requirements will need to be met.

Safety projects are identified in the highway program for only the current accomplishment year. Funding for the remaining years is included in the Five-Year Program as a lump sum by State fiscal year in the Statewide Safety Projects line item (see [Section 3.2, Funding](#)). The Commission has given the Iowa DOT Highway Division Director authority to manage the safety accomplishment program (that is, the Highway Division can add or remove projects by staff action) provided that Iowa DOT does not exceed the programmed amount for the current accomplishment year.

Safety projects typically require NEPA and permitting, and require the involvement of OLE.

The Safety Program is administered by T&S. Projects aimed at achieving a significant reduction in traffic fatalities and serious injuries are chosen collaboratively by T&S and the districts. Projects are selected based on the emphasis areas listed in the Iowa Strategic Highway Safety Plan or Iowa’s “5 Percent Most Severe Safety Needs Report.” Both resource documents are required by the federal HSIP. For a project to be eligible for federal aid, it must be listed in one of these two resource documents.

Safety projects are typically designed by Design or the districts. T&S maintains a draft 5-year safety program, but projects for only the most recent year are identified in the Five-Year Program. Typical projects include paved shoulders, safety enhancements to curves, safety [corridor](#) improvements, median cable installations, intersection enhancements, and rumble strips. T&S is responsible for requesting a project number from the Office of Contracts and for working with the PSE to enter a development schedule in PSS.

Because safety projects are typically funded with federal aid, there is a NEPA requirement as well as the potential for other environmental permits and clearances. T&S is responsible for providing a copy of the project concept and project number to OLE for NEPA classification. NEPA and any other environmental permits and clearances will be managed and developed concurrently during the project's design activities.

3.1.4 Traffic Safety Improvement Program

Iowa's Traffic Safety Improvement Program (TSIP), also known as the Traffic Safety Fund or Half Percent Program, is a State-funded program where one-half of one percent (0.5%) of all transportation funds is reserved for safety projects on Iowa's roadways. The TSIP is defined in Iowa Administrative Code, Section 761, Chapter 164, and provides funding to cities, counties, and Iowa DOT through three separate categories:

- Site-specific – Construction or improvement of traffic safety and operations at a specific site or corridor with a crash history
- Traffic control devices – Purchase of materials for and installation of new traffic control devices, such as signs, signals, or pavement markings, or replacement of obsolete signs or signals
- Research, studies, and public information – Transportation safety research, studies, or public information initiatives, such as signing or pavement marking research, driver education/information, work zone safety, and crash data analysis improvements

The TSIP is administered by T&S. Applications are accepted annually from cities, counties, and Iowa DOT, and are then reviewed by an internal and external committee comprised of city, county, and Iowa DOT staff. Recommended projects are then presented to the Commission for funding approval. Additional details about TSIP can be found online on the [Traffic Safety Improvement Program web page](#).

Because TSIP projects are State funded and do not have a federal-aid component, there is no NEPA requirement. However, other environmental permits and clearances may be required. For projects managed by Iowa DOT, T&S is responsible for providing a copy of the concept and project number to OLE so that OLE may obtain the necessary permits and clearances. For projects managed by cities and counties, the respective cities and counties are responsible for obtaining the necessary environmental permits and clearances.

3.1.5 Intelligent Transportation System

Intelligent Transportation System (ITS) projects promote increased capacity and safety by capturing traffic data and providing critical information to motorists in real time. Historically, each year \$5 million is set aside in the Five-Year Program in the Statewide Traffic Control Devices line item (see [Section 3.2, Funding](#)). The Systems Operations Bureau is tasked with the creation and administration of an annual ITS program. The Systems Operations Bureau also maintains a draft 5-year Dynamic Message Sign (DMS) program designating where and when permanent DMS will be built. This is reviewed, updated, and approved each year. Both programs are reviewed each year by the HDMT and approved by the Highway Division Engineer. Typical projects include urban ITS deployments in major metropolitan cities; operation, maintenance, and development of 511 services; Road Weather Information System (RWIS); DMS; global positioning system (GPS) devices in snow plows; and maintenance and communications for all ITS devices.

The Systems Operations Bureau is responsible for developing a project concept, obtaining a project number from the Office of Contracts, and working with the PSE to develop a schedule in PSS. ITS projects are typically State funded and let through one of the following:

- Office of Procurement and Distribution – Purchasing section
- Professional Services via Outside Services
- Office of Contracts as a stand-alone project

When ITS projects are State funded and do not have a federal-aid component, there is no NEPA requirement. However, the Systems Operations Bureau is responsible for providing a copy of the concept to OLE so that OLE may verify that no environmental permits and clearances are needed or may obtain the necessary permits and clearances before the work begins.

When ITS projects do have a federal-aid component or when an ITS need will be included in the contract documents for an existing construction project being let, there is a NEPA requirement. For these projects, the Systems Operations Bureau is responsible for providing a copy of the ITS concept and cost estimate along with the associated construction project number to OLE so the ITS component can be incorporated into the NEPA analysis.

For major projects (that is, projects costing over \$500 million), regardless of the need for NEPA analysis, the estimated ITS cost will be provided to OLE. For projects costing under \$500 million that do not require NEPA analysis, the ITS cost component will be provided to Design prior to completion of the field exam (D02).

3.1.6 Emergency and Contingency Funds

Details about the use of E&C funds are provided in Iowa DOT's Policies and Procedures Manual (PPM) 410.01.

3.1.7 Emergency Relief Program

The emergency relief (ER) program administered by FHWA is invoked when there is widespread damage to infrastructure due to natural disaster, such as a flood, earthquake, or tornado. To be eligible for ER program funding, an ER project must be linked to a specific event and time frame by using the following process:

1. **State Disaster Proclamation** – State and local governments complete a preliminary damage assessment and provide that information to the Governor's office. The Governor makes a declaration of emergency, which includes a statement about the gravity of the situation and specifies the area affected. If the cost is above a certain amount (typically \$1 million for each event and time frame), the governor may request federal assistance (that is, a presidential declaration of emergency).
2. **Federal Disaster Proclamation** – The President makes a presidential declaration of emergency, which authorizes the use of federal funding to address the disaster.
3. **Letter of Intent** – Iowa DOT files a letter of intent with FHWA Iowa Division notifying the agency of Iowa DOT's intent to request ER funds.

The emergency relief (ER) program is invoked when there is widespread damage to infrastructure due to natural disaster, such as a flood, earthquake, or tornado.

4. **Damage Assessment** – Iowa DOT (that is, the district, assisted by OBS and other offices) conducts a site visit, documents the damage, and estimates the cost of corrective action, including corrective action that has already been taken to mitigate damage during the disaster. Subsequent to the site visit, District staff documents its findings in Detailed Damage Inspection Reports (DDIRs) that are created and stored in Iowa DOT’s Electronic Records Management System (ERMS). One DDIR is completed for each area that has damage, regardless of whether corrective action has already been completed.
5. **FHWA and Iowa DOT Notification of ER Project** – Using the DDIR electronic distribution list, Iowa DOT submits the DDIR(s) to FHWA Iowa Division and simultaneously notifies Project Delivery Bureau offices that would be involved in the proposed ER project. For example, OLE would be notified because the DDIR would be the basis for evaluating whether NEPA would be required for the proposed ER project.
6. **FHWA Verification of ER Project** – An FHWA Iowa Division Field Engineer reviews the DDIR and the site of each proposed ER project and validates federal participation of each project (that is, FHWA determines if each proposed ER project is eligible for federal funding). FHWA approval of a DDIR is required before any federal funding may be used.
7. **Concept and Plan Development** – Once FHWA approves the DDIR, then Iowa DOT uses the DDIR to develop a concept (that is, a recommendation as to the nature and extent of work required) and project plans for an ER project letting.
8. **Project Number Assignment** – Depending on the scope and urgency of the repairs, project development is typically assigned to Design. As the Design section engineers begin to work on the ER project, they request a project number from the Office of Contracts.
9. **Letting Schedule Development** – The Office of Contracts cross-checks the DDIR for project verification and enters the project in PSS using the concept as written in the DDIR. The Office of Contracts assigns a project number, develops a PSS schedule using the ER project development template, and proposes a letting date.
10. **NEPA Compliance** – ER projects are developed and let either with federal disaster funding secured or with the expectation that federal disaster funds will become available. As such, ER projects require NEPA and other environmental permits and clearances. This requirement is managed based on the ER project’s relationship to work necessary to do the following:
 - a. Prevent or reduce the effects of a disaster while the event is ongoing – Generally, NEPA and other environmental permits and clearances follow the actual emergency work being done. In the case of repairs to get the facility open, a completed NEPA document is not necessary prior to doing the work. However, if federal ER reimbursement is going to be requested, NEPA will be completed when a DDIR is completed and circulated. Therefore, in this case, NEPA is completed after the fact. This is not OLE’s goal, but it does offer flexibility when the situation or conditions warrant.
 - b. Return the facility to pre-disaster status – NEPA and other environmental permits and clearances need to be completed prior to letting the project. Unless a special circumstance exists for a specific project, circulation of a completed DDIR form is the trigger that initiates the various environmental processes and clearances.
 - c. Recover the facility using some form of betterment – NEPA and other environmental permits and clearances need to be completed prior to letting the project. Unless a special circumstance

exists for a specific project, circulation of a completed DDIR form is the trigger that initiates the various environmental processes and clearances.

It is not uncommon following a State and federally declared disaster to have the U.S. Army Corps of Engineers (USACE) declare a modified [Section 404 of the Clean Water Act \(Section 404\) permitting process](#) to facilitate rapid recovery of essential services. In this case, and provided that the proposed work does not have a betterment component, often [Section 404 approvals](#) are obtained after an undertaking has occurred, and permit documentation follows (that is, an after-the-fact permit). There have been instances where the Iowa Department of Natural Resources (Iowa DNR) has also implemented a modified National Pollutant Discharge Elimination System (NPDES) permitting process for stormwater where the permit is obtained after a project is let.

ER projects require NEPA and other environmental permits and clearances.

ER projects for which repairs are completed within 180 days of the date of the presidential declaration of emergency are eligible to receive reimbursement of 100 percent of the costs. If the repairs take longer than 180 days, the State becomes responsible for a portion of the costs—10 or 20 percent depending on the route.

An ER project may consist of a repair or replacement of the existing condition or a betterment project. For betterment projects, the State is always responsible for 10 or 20 percent of the project cost, regardless of the 180-day time frame.

ER declarations come with a funding limitation based on the State's request. Funding beyond that limit would require approval of another federal appropriation. ER project funding for an event ends at the second federal fiscal year following the year of declaration of the event.

Additional information about the ER program is provided in PPM policy 600.08 dated March 11, 2005.

3.2 FUNDING

Revenue is made available to fund individual projects based on project type and, in the case of federal aid, specific work within a project type. These project types are discussed in [Section 3.2.1](#), and federal aid requirements are presented in [Section 3.2.2](#).

3.2.1 Funding by Project Type

Iowa DOT has developed two general categories of funding based on project type: 1) stewardship (that is, maintaining existing infrastructure); and 2) capacity and economic development. All proposed project concepts fit into one of these two general categories.

3.2.1.1 Stewardship

Iowa DOT has established stewardship-level work types and typically funds each annually as follows:

- Bridge reserve, non-interstate structures – \$40 million (SFY2012)
- 3R, non-interstate repair and rehabilitation – \$85 million (SFY2012)
- 4R, including interstate rehabilitation, bridge replacement and repair, and rest areas² – \$115 million (SFY2012)

² This does not include major reconstruction projects. Current examples of projects not included in the 4R work type are I-29, Sioux City; I-80/I-29, Council Bluffs; and I-74, Quad Cities.

- Safety – \$15 million (SFY2012)
- Funded line items in the Five-Year Program

Project-level funding for bridge reserve and 4R projects is identified for the entire Five-Year Program. Project-level funding for 3R and safety projects is identified for only the current accomplishment year. In the case of 3R and safety projects, funding for the remaining years of the Five-Year Program (years two through five) is included in the Five-Year Program as a lump sum by State fiscal year in the Non-Interstate Pavement Modernization and the Statewide Safety Projects line items, respectively. In addition, the Commission has given the Highway Division Director authority to manage the safety accomplishment program (that is, the Highway Division can add or remove projects by staff action) provided that Iowa DOT does not exceed the programmed amount for the current accomplishment year.

3.2.1.2 Capacity and Economic Development

Capacity and economic development projects are funded at varying levels depending on other system needs. Non-reserve projects, the work type for capacity and economic development projects, include major interstate reconstruction and non-stewardship projects, such as major corridor work and joint city and State cooperative work. These non-reserve projects are allocated the remaining amount of funds (estimated yearly revenue minus \$255 million [SFY2012]). Project-level funding for non-reserve projects is programmed for the entire Five-Year Program.

Capacity and economic development projects are funded at varying levels depending on other system needs.

3.2.2 Federal Aid Requirements

The federal-aid funding system has many distinct funding programs; a project's participation in one of these funding programs requires that the project comply with the program's eligibility criteria. For example, funding for the Highway Bridge Program (HBP) (formerly known as Bridge Replacement Funds [BRF]) is not available for projects that involve building a new bridge on a new alignment. However, this funding can be used for projects that replace an existing structure within the same corridor and projects that rehabilitate an existing structure.

Many federal-aid funding sources are more flexible than is HBP. However, there are often constraints in funding, and federal funds typically require a State match (that is, pro rata share), which generally ranges from 10 to 20 percent State funds. Program codes, fund eligibility, and the pro rata share information for the federal-aid system are available online at www.fhwa.dot.gov/programadmin/publicat.htm.

3.3 MONITORING IDENTIFIED NEEDS

Identified needs are monitored on the Highway Candidates List and its three subcategories: Future Base-Program List, Advancement Candidates (AC) List, and Monitor List. These four levels are shown in [Appendix D, Project Monitoring Overview](#), Figure 1.

3.3.1 Highway Candidates List

The Highway Candidates List is a master list of all identified unmet program needs. The list is an online database with a Graphical User Interface (GUI) input screen that is used by the Project Delivery Bureau Director and the Office of Program Management to select and prioritize programmable projects for further development.

Needs are added to the Highway Candidates List as follows:

- The requesting entity (that is, a district or an office in the Project Delivery Bureau) identifies the following:
 - A need, for which a general concept and Scope of Work are developed (Project concepts are discussed in [Sections 3.1.1 through 3.1.7](#), above)
 - Geo-referenced logical termini, which could be a point or a line depending on the project
 - A program cost estimate and a preliminary development schedule
- The requesting entity enters the information above into the Highway Candidates List online database and submits the information.
- The system sends an email message to the Project Delivery Bureau Director and the PSE notifying them that a new need has been entered into the system.
- The Project Delivery Bureau Director and the PSE review the request and either approve or seek additional information from the requestor.

Through a team-driven winnowing process, the Project Delivery Bureau Director prioritizes eligible needs from the Highway Candidates List and categorizes the need as a Future Base-Program project, an AC project, or a Monitor List project, as described below.

3.3.2 Future Base-Program List

Projects on the Future Base-Program List are those that have no right of way needs and are developed and ready to let, or that need right of way and are developed to a point that they are ready for submittal to ROW (that is, [D05](#)). Future base-program projects have a unique multiple listing; they could be listed on the Monitor List as well as the Future Base-Program List. The Future Base-Program List contains Type I, II, and III projects that are eligible to be added to the current Five-Year Program. The long-term intent for this category is to develop a mix of Type I through Type III projects whose funding requirements aggregate to approximately 65 to 80 percent of a normal construction year's programmed amount. This Future Base-Program List would then replace the AC List.

3.3.3 Advancement Candidates List

The AC List contains Type I, II, and III projects that are eligible to be added to the current Five-Year Program or advanced within the current Five-Year Program.

3.3.4 Monitor List

The Monitor List contains Type I, II, and III projects that are eligible to be added to, or advanced within, the current Five-Year Program. However, the primary focus of the Monitor List is to backfill projects in the current accomplishment year of the program.

3.4 PROGRAM DEVELOPMENT

The Five-Year Program is typically developed from December through June. The first step in the programming process is to establish the stewardship funding level for the next State fiscal year. The stewardship funding is then subtracted from the estimated revenue projections, and the resulting amount becomes the funding for the capacity and economic development component of the program.

Concurrently, project managers in the various offices within the Project Delivery Bureau are asked to provide cost estimate updates for projects that are being developed. With funding levels determined and best available cost estimates in hand, the Project Delivery Bureau and Office of Program Management begin to update the Five-Year Program. The goal is to have the draft of the new program to the Commission by April or May. Final approval by the Commission is typically given in June. The programming process is shown in [Appendix D, Project Monitoring Overview](#), Figure 2.

3.5 PROJECT DEVELOPMENT

After projects have been identified, they are assigned to an Iowa DOT office for development. Corridor projects, bridge replacement projects, small reconstruction projects, and planning and feasibility studies are developed as discussed below.

3.5.1 Bridge Replacement Projects or Small Reconstruction Projects

Projects developed by Design are typically bridge replacement projects or small reconstruction projects with minor realignment or right of way impacts. These projects are most often on the AC List and the Monitor List and are initiated by the Highway Division Director through the Project Delivery Bureau Director. Project assignment comes from the Project Delivery Bureau Director to Design's Assistant Office Director, who assigns the project to the Field Exam Engineer. The Field Exam Engineer does the following:

- Develops a concept.
- Requests a project number.
- Provides D00 (concept complete) and D01 (survey complete) dates to the PSE, who will provide a preliminary schedule and enter the schedule in PSS.
- Develops a project-specific concept with alternatives and a preliminary cost estimate, and requests that the Project Delivery Bureau Director update the selected alternative and cost estimate, and enter the proposed work on the Monitor List.

The project needs are reviewed by the Design PM when the concept is developed and NEPA requirements are determined.

After receipt of a final concept, the NEPA section lead will obtain a NEPA document classification from FHWA, will notify the PM of the NEPA classification, and will assign a NEPA staff person to the project team. In this case, the NEPA section will depend on the Design PM for information needed to complete the NEPA document.

After the NEPA document has been approved, the project is then assigned to a Design section, which develops preliminary and final letting plans and specifications.

3.5.2 Corridor Projects

Corridor projects can originate from many sources, but typically projects come from one of two sources: the Commission's public involvement outreach or the HDMT's identification of long-term system or subsystem needs. Project definition will typically be a corridor or some other subsystem need that at packaging time becomes multiple projects for letting, most often over multiple programming years. Once a need and a project are identified, the project is placed on the Highway Candidates List, which has three subcategories (see [Appendix D, Project Monitoring Overview](#), Figure 1).

Project corridors on the Future Base-Program List and AC List are most often initiated by the Highway Division Director through the Project Delivery Bureau Director. Project assignment comes from the Project Delivery Bureau Director to OLE, which does the following:

- Assigns a PM from the OLE – Location section.
- Requests a project number.
- Develops a preliminary schedule and requests that the PSE vet and enter the schedule in PSS.
- Identifies a PMT.
- Develops a preliminary cost estimate and requests that the Project Delivery Bureau Director enter the proposed work on the Monitor List.
- Studies the project needs, completes NEPA, and ultimately develops a preferred alternative and a preliminary engineering cost estimate. In this scenario, and assuming the need and development priority remain unchanged, project packaging and programming typically come toward the end of the NEPA process.
- Passes the completed preliminary engineering work on to Design and OBS for final engineering and development of final letting plans and specifications.

3.5.3 Planning and Feasibility Studies

On occasion, a Type I or II project on the Future Base-Program List is determined not to warrant a full location and NEPA study but instead is better suited for a Planning Study or a Feasibility Study. In this case, the project origination and definition process is the same, but the result is not a preferred alternative. Rather, it is a range of alternatives and costs to be studied further at a later date. Generally, the results of a Planning Study or a Feasibility Study include a Purpose and Need and at least two representative alternatives, which form the base for a subsequent location and NEPA study. A Planning Study or a Feasibility Study is used to sort out needs and possible alternatives as well as to assign development priority for costly and longer term programming needs.

Chapter 4

Bypass Guidance

CHAPTER 4 BYPASS GUIDANCE

In the State of Iowa (State), the **primary road system**, also referred to as the **State highway system**, provides motor vehicles the means to travel to all regions of Iowa and, thereby, the Midwest and the United States. The State highway system is stratified into the following levels that describe the type of connectivity provided by the facility:

- Interstate – Connection to the national network
- Commercial and Industrial Network (CIN) – Connection for Iowa cities with populations of 20,000 or greater to major metropolitan areas
- Area Development – Connections for cities with populations of 5,000 or greater to the CIN and major commercial and industrial centers
- Access Routes – Connections for cities with populations of 1,000 or greater to employment, shopping, health care, and education facilities
- Local Service – Connections for cities with populations less than 1,000 to local commercial and public services

Because of the different types of connectivity that these levels provide, the type of traffic on the State highway system varies significantly. For example, the majority of users of the Interstate System are interested in traveling long distances in as little time as possible. On the other end of the spectrum, the majority of traffic on Access Routes and Local Service highways is generally traveling from community to community within a countywide area.

On the Interstate System, full **access control** is provided, allowing traffic to move as freely as possible. Off the Interstate System, full access control is not provided, and traffic may be delayed by traffic at intersections and private entrances, traffic signals, stop signs, no passing areas, and increased congestion as State highways pass through communities. On higher level State highways,¹ the type of traffic using the highway expects a higher service level with an unimpeded flow of traffic; therefore, **access** is limited. This is especially true on the CIN.

The development of the CIN, as directed by the Iowa Legislature in 1991, is to “improve the flow of commerce; to make travel more convenient, safe, and efficient; and to better connect Iowa with regional, national, and international markets” (Iowa Code Section 313.2A). The provision of bypasses (with higher levels of access control²) on the CIN offers many benefits in meeting this legislatively directed goal. These benefits include:

- Reduction in death and injury crashes by adding safety improvements
- Reduction in travel time for people and goods
- Lower costs of transported goods and services due to greater certainty of arrival time, particularly in the case of just-in-time manufacturing³

¹ Higher level State highways include freeways, expressways, and four-lane divided highways.

² Access is defined as a means of ingress or egress between a primary highway and abutting property or an intersecting local public road or street. Higher levels of access control refers to having a limited number of access points to the roadway, which would allow traffic to move more freely.

³ With just-in-time manufacturing, items are created to meet demand rather than created in surplus or in advance of a need.

- Decrease in fuel and other vehicle operating costs
- Reduction of noise and air pollution
- Reduction of traffic congestion within the bypassed community

Although there are many benefits in constructing bypasses with higher levels of access control, the decision to construct a bypass must be made carefully because of increased construction costs and potential socioeconomic and [environmental](#) impacts associated with a bypass versus a through-town option. The following studies regarding the effects that bypasses may have on communities are available for review and consideration:

- *Primary Road Bypass Study of Selected Iowa Communities*, by Iowa DOT, November 1999
- *A Literature Review of Urban Bypass Studies*, by Iowa DOT, Planning and Research Division, Office of Project Planning, in 1987 and revised in 1992
- *Effects of Highway Bypasses on Rural Communities and Small Urban Areas*, by the Transportation Research Board, *National Cooperative Highway Research Program (NCHRP) Research Results Digest 210*, 1996
- *Road Safety Effects of Bypasses*, *Transportation Research Record: Journal of the Transportation Research Board*, Issue Number 1758, Paper Number 01-0525, 2001

The decision to construct a bypass must be made carefully because of increased construction costs and potential socioeconomic and environmental impacts associated with a bypass versus a through-town option.

Construction of a bypass is a large investment in the State highway system by Iowa DOT. This chapter describes factors that need to be weighed when deciding whether to improve a highway route with a bypass, which has a higher level of access control, or by going through town, which has a lower level of access control.

4.1 EVALUATION AND APPLICATION

The impacts, benefits, and costs of a bypass can vary significantly from community to community. These varying impacts and circumstances make it difficult to provide any simple rules on when bypasses should or should not be built. To identify and evaluate these impacts, benefits, and costs, it is important that an evaluation be conducted in each case. As bypass needs are evaluated, local residents and communities will be consulted and asked to provide input in the decision-making process.

Because every [project](#) is unique, the factors considered in deciding whether a bypass is warranted will also vary case by case. Sound judgment must be exercised to determine which factors apply in each case. In some situations, the property impacts of a representative through-town improvement may alone warrant a bypass. In another instance, this may be only one of the factors considered to reach a decision. In all cases, the decision of whether a bypass is or is not warranted must be vetted with the Iowa DOT [Highway Division Management Team \(HDMT\)](#).

The following sections discuss factors that Iowa DOT will consider when developing the configuration of a bypass option as well as in determining whether a bypass is or is not warranted.

4.1.1 Planning Classification of the Highway

Route continuity and consistency are essential to meet driver expectancy and to retain the benefits of investment in a given [corridor](#). Iowa DOT has [functionally classified](#) Iowa's roadway network. Each

classification has a predefined range of access control, which helps to preserve the function of the network and Iowa DOT’s investment. It is essential when identifying the need for a project that classification of the roadway be reviewed as it directly relates to the benefit of bypasses, as follows:

- Interstate – This bypass guidance is not intended for application on the Interstate System. The Interstate System is required to have full access control, which preserves the free flow of the system regardless of the location of the route.
- CIN – The free flow of traffic on the CIN is important because of the type of traffic that is served and the legislatively directed goals of the CIN. Therefore, bypasses have been found to be beneficial on the CIN.
- Area Development – Area Development highways serve traffic that is traveling to and from different regions of the State. In some instances, the predominant traffic on an Area Development highway may benefit from a bypass.
- Access Routes – Access Routes typically will not benefit from bypasses because the traffic is traveling short distances.
- Local Service – Generally, bypasses will not be constructed on Local Service routes due to the short intra-county trips associated with these highways.

Route continuity and consistency are essential to meet driver expectancy and to retain the benefits of investment in a given corridor.

4.1.2 Route Function

The function of a route is usually similar to the planning classification of the highway; however, it is possible for a route to have a higher function but to be classified lower. For example, a route may function as an Area Development route, and therefore benefit from the consideration of a bypass, but be classified as a Local Service or Access Route. Care and consideration should also be given if the route serves other functions, such as an emergency detour route, a freight corridor route, or a route on which certain types of equipment, such as wind turbines, are transported.

4.1.3 Purpose and Need

All alternatives must meet the Purpose and Need for a project. The Purpose and Need is formulated as simply as possible to address the basic question of why a project is needed and should be closely tied to the classification and function of the corridor. If the Purpose and Need for highway improvements is to provide free flow of traffic through the community, a through-town option may not meet the Purpose and Need, and the construction of a bypass may be more beneficial. Function and classification of the route are of paramount importance in developing the Purpose and Need.

4.1.4 Amount of Through-Traffic

The benefits of a bypass increase as the number of vehicles that pass through a community increases.

The benefits of a bypass increase as the number of vehicles that pass through a community increases because a bypass allows vehicles traveling through the corridor to avoid conflicts with local traffic.

Urban routes typically have a higher number of access points, which can cause safety and operational concerns as through-traffic volumes increase. A bypass allows vehicles traveling through the corridor to avoid conflicts with local traffic. This reduces congestion, the number of crashes, travel time, and vehicle operating costs. In addition to total through-traffic, consideration of the mix of through-traffic (that is, automobiles versus trucks) is also important due to potential congestion, noise, and air pollution impacts.

4.1.5 Route Design

There are many design aspects to consider in developing both bypass and through-town options. Each affects the impacts, benefits, and costs of a representative improvement alternative. A few of the design aspects to consider in developing and comparing the bypass and through-town options are discussed below.

4.1.5.1 Location of Bypass and Through-Town Options

Whether there are more or less impacts associated with a representative through-town option often depends on whether the through-town option traverses the core of a community, the central business district, a fringe area, or a residential area. A decision must be made as to the location of both the bypass and through-town options to allow comparison of impacts, benefits, and costs.

4.1.5.2 Design Criteria

Initial design criteria should be selected for both the bypass and through-town options. The first step in developing design criteria is selecting a roadway type. Routes on the CIN or designated as Area Development routes often have goals of free flow and higher speeds and are often built to freeway or [expressway](#) specifications. Routes built to freeway or expressway specifications similarly often benefit from consideration of a bypass option for the same reasons. In addition, similar to the route function, discussed in [Section 4.1.2](#), care and consideration should be given to the types of loads being transported on the route when selecting design criteria. Whether the route serves as a freight corridor or for the transportation of larger loads, such as wind turbine equipment, should be reviewed prior to determining initial design criteria.

4.1.5.3 Basic Number of Lanes

The [basic number of lanes](#) a highway must have to serve the current and projected traffic as well as to provide the service associated with the route must be determined to allow adequate evaluation of the impacts, benefits, and costs of bypass and through-town options. There are route continuity and driver expectations associated with different basic numbers of lanes, as follows:

- Two-lane – Two-lane corridors typically would not require the construction of bypasses because they typically carry lower traffic volumes.
- Four-lane – Four-lane corridors would typically benefit from the construction of bypasses because of the amount of traffic on the facility and the driver expectation for free flow on four-lane facilities.

4.1.5.4 Cross Section

To be able to adequately compare a bypass option to a through-town option, the [Project Management Team \(PMT\)](#) first determines the location and [cross section](#) of representative bypass and through-town options. Both traffic projections and crash histories can be used to aid in this determination. For example, projected traffic volumes are useful in determining the basic number of lanes needed for both options.

If there is significant crash history, consideration should be given to features such as channelized intersections, left- or right-turn lanes, and traffic signals.

It is desirable to preserve or enhance the [level of service](#) with any highway improvement. Therefore, if the project [concept](#) provides four or more [basic lanes](#) and if the classification of the highway, function of the highway, or Purpose and Need for the project indicates a need for free flow throughout the project area, it may be necessary to include a continuous left-turn lane with a representative through-town option to preserve the level of service of a through-town option. In the

case of four or more basic lanes, a five-lane section generally provides an adequate comparison of options with similar levels of service.

If there is significant crash history, consideration also should be given to features such as channelized intersections, left- or right-turn lanes, and traffic signals. The overall footprint of each option should be used to allow fair and complete evaluation of the impacts, benefits, and costs of both bypass and through-town options.

4.1.6 Access Management

Many highway improvement projects require the acquisition of additional access rights. As numbers of access points increase, crashes also increase while generally the mobility on a highway decreases. Therefore, it is essential that the PMT consider carefully and gather public input related to both the level and the limits of access control.

It is desirable to place interchanges at locations where existing or anticipated traffic patterns would benefit the most from an interchange.

During the initial stages of [development](#), the PMT determines what access rights to the primary highway will be required, the appropriate level of access required, and application of access control throughout the project area. Every situation is different, but in general, the development and evaluation of bypass options versus through-town options should consider the factors discussed in the following sections.

4.1.6.1 Location of Interchanges

It is desirable to place interchanges at locations where existing or anticipated traffic patterns would benefit the most from an interchange. Often this location is at the intersection of the route with other primary roads or other higher volume routes to provide connectivity to the local roadway network and community. If there are no primary roads or other higher volume routes in the vicinity of a proposed bypass option, it may be beneficial to use full or partial (under specific or unique conditions) interchanges at either end of the community as a method of providing local connectivity.

Care should be taken in the development and analysis of a bypass option to place the proposed interchange(s) at the most appropriate location(s) during the bypass evaluation because the placement will affect any comparison of impacts, benefits, and costs between the bypass and through-town options.

4.1.6.2 Access Control Between Interchanges

Access control between adjacent interchanges shall be maintained.

4.1.6.3 Functional Preservation of the Bypass

Care needs to be taken to preserve the investment in a bypass option. It is Iowa DOT's intent to connect a bypass to an existing route via only interchange(s) rather than at-grade intersection(s). Iowa DOT is often approached by a bypassed community and asked to provide at-grade connections at either end of a bypass. Generally, the first at-grade connection beyond access by only interchange has the most potential to become a location with a higher number of crashes after construction of the bypass is complete. Making this location an alternative connection point for the existing route exacerbates the safety concern by focusing additional traffic at an at-grade intersection rather than encouraging access to the community via the

In comparing a bypass option to a through-town option, the presence of an at-grade intersection will increase impacts associated with a bypass and should be considered in the bypass evaluation.

interchange(s). In comparing a bypass option to a through-town option, the presence of an at-grade intersection will increase impacts associated with a bypass and should be considered in the bypass evaluation.

4.1.6.4 Transition Area

At each end of a bypass, the transition from access by only interchange to something less should be accommodated by a transition area allowing access only to public road connections. The extent of this transition will vary by project.

4.1.6.5 Transition from Rural to Urban

The driving environment for a through-town option needs to accommodate a transition from rural to urban and vice versa. This transition area will affect access control and thus the impacts associated with a through-town option. Therefore, this transition should be considered in the evaluation of whether to bypass a community.

4.1.7 Impacts

When developing and comparing alternative options for a project, the PMT must compare the impacts of a potential bypass option to those of a potential through-town option. This evaluation typically occurs early in the [project development process](#) to eliminate unreasonable alternatives. A more detailed evaluation of the remaining reasonable alternatives will occur later in compliance with the National Environmental Policy Act (NEPA). Considerations in this initial review can include both socioeconomic and environmental impacts, as discussed below.

4.1.7.1 Socioeconomic Impacts

There are typically more socioeconomic impacts associated with a representative through-town option than with a representative bypass option. Often these impacts are subjective but nonetheless should be considered in an analysis of whether to bypass a community. Some impacts to consider and to quantify, if possible, are as follows:

- **Right of way** – The acquisition of [right of way](#) causes potential impacts on residences and businesses. Required right of way for each option can be quantified and compared by the number of acres and properties impacted as well as the cost to acquire right of way, including any relocation costs.
- **Safety** – With the exception of crash rates and an analysis of incremental cost savings due to crashes (see [Section 4.1.8](#), below), it is difficult to quantify and compare the potential difference in safety benefits between bypass and through-town options. However, a qualitative approach identifying the potential issues with both options is adequate for comparison purposes.
- **School and pedestrian crossings** – A through-town option may present the potential for more traffic in the vicinity of school and pedestrian crossings. A qualitative review identifying the potential issues for bypass and through-town options is adequate for comparison purposes.
- **Rail crossings** – Areas where grade separations are not cost effective should be identified and discussed if applicable.
- **Quiet zones** – Impacts on quiet zones, such as hospitals, city parks, and retirement centers, within the project area should be identified and discussed when applicable.

Socioeconomic and environmental impacts should be considered when evaluating a bypass.

- **Planning and zoning** – How the proposed bypass and through-town options fit with the planning and zoning in the vicinity of the community should be reviewed. Impacts are difficult to quantify objectively but can be identified and qualitatively evaluated.

4.1.7.2 Environmental Impacts

Environmental impacts include impacts on the natural, physical, and cultural environment. Potential environmental impacts to consider and to quantify, if possible, are as follows:

- **Farmland** – Farmland is a protected resource,⁴ and impacts should be minimized to the extent practicable. Farmland impacts for a bypass or through-town option can be quantified and compared by the number of acres impacted, farmland quality, and right of way cost. To the greatest extent possible, **diagonal severance**⁵ should be minimized and quantified by number of acres of nonfarmable land when avoidance is not possible.
- **Wetlands** – **Wetlands** are a protected resource,^{6,7} and impacts on wetlands should be avoided to the extent practicable. When avoidance is not possible, impacts can be quantified and compared by number of acres impacted and potential cost to mitigate.
- **Stream impacts** – As a protected resource, stream impacts should be avoided to the extent practicable. When avoidance is not possible, impacts can be quantified and compared by length of streams and potential cost to mitigate.
- **Noise** – When comparing bypass and through-town options, noise impacts can be quantified and compared by number of impacted noise receptors and potential cost to mitigate. Noise impacts are generally more acute with a through-town option.
- **Air quality** – Existing air quality in the area of a proposed project should be reviewed, and impacts should be avoided to the extent practicable.⁸ The potential for more traffic congestion within a community has the potential to result in additional air quality impacts. A qualitative review identifying the potential issues for both bypass and through-town options is adequate for comparison purposes.
- **Historic buildings and districts** – As a protected resource,^{9,10} impacts on **historic buildings and districts** should be avoided to the extent practicable. When avoidance is not possible, potential

⁴ Farmland is protected by the Farmland Protection Policy Act of 1981 (7 CFR 658) as well as by local entities through ordinances in accordance with Iowa Code, Chapter 352. In addition, Iowa Code, Section 306.9, states that relocation or construction of highways through cultivated land should be avoided to the maximum extent possible.

⁵ Diagonal severance is the crossing of a parcel by the right of way required for a transportation project in a manner that leaves unusable or inefficient parcels of land.

⁶ Executive Order 11990, Protection of Wetlands, requires federal agencies (including the Federal Highway Administration [FHWA]) to implement “no net loss” measures for wetlands (42 FR 26961). These measures include a phased approach to wetland impact avoidance, then minimization of impacts if wetlands cannot be avoided, and finally **mitigation**.

⁷ **Waters of the U.S.**, including wetlands and streams, are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act, which requires a permit to authorize the discharge of dredged or **fill material** into waters of the U.S. (33 USC 1344).

⁸ Air quality is regulated by the Clean Air Act of 1970, as amended (42 USC 7401 et seq.). Primary and secondary National Ambient Air Quality Standards (NAAQS) established by the Clean Air Act are used as a basis for the review of potential air quality impacts.

⁹ **Section 106** of the National Historic Preservation Act of 1966, as amended (Section 106), and implementing regulations in 36 CFR 800 require federal agencies to determine whether their undertakings will have adverse effects on **historic properties** (16 USC 470f).

¹⁰ **Section 4(f)** of the U.S. Department of Transportation Act of 1966 states that FHWA “...may approve a transportation program or project...requiring the use of...land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the...site) only if...there is no prudent and feasible alternative to using that land; and...the program or project includes all possible planning to minimize harm to the...historic site resulting from the use” (49 USC 303[c]).

impacts can be quantified by number and significance of properties impacted and potential cost to mitigate.

- **Regulated materials sites** – Potential impacts on [regulated materials](#) sites can be quantified and compared by properties impacted and potential cost to mitigate.
- **Environmental justice** – Minority and low-income populations are considered environmental justice populations, which are afforded protection¹¹ against disproportionate adverse impacts. Care should be taken to not disproportionately impact one population over another with either a bypass or through-town option. A qualitative review identifying the potential issues for bypass and through-town options is adequate for comparison purposes.
- **Floodplains** – Federal Emergency Management Agency (FEMA)-designated floodplains and floodways, and overall flooding potential should be considered as well as potential impacts on any levees or flood protection systems. A qualitative review identifying the potential issues for both bypass and through-town options is adequate for comparison purposes.
- **National Pollutant Discharge Elimination System (NPDES)** – Potential pollutant discharge and State water quality regulations as they affect the project should be compared for both bypass and through-town options. A qualitative review identifying the potential issues for both bypass and through-town options is adequate for comparison purposes.

4.1.8 Benefits and Costs

When appropriate, an evaluation of the incremental benefits and costs associated with both bypass and through-town options will be conducted. This provides a measure of potential cost savings in constructing a bypass, which can be compared with that of a through-town option. Several factors to consider in this evaluation are the following:

- Travel time savings
- Potential crash savings
- Difference in maintenance costs

4.1.9 Community Preference

The preferences of county and local agencies, residents, and businesses are important, and all should be considered by the PMT when determining whether to bypass a community as well as when determining the configuration of bypass and through-town options. The community participation for each project will vary, but the following are a few groups to include in the discussions as applicable:

- County Engineer, Board of Supervisors, Sheriff, and County Conservation Board
- City Engineer and Council
- Chamber of Commerce

Designers need to balance the competing needs of local constituents, who often bear the brunt of impacts associated with highway improvement, with Statewide highway users, whose mobility needs the highway serves.

¹¹ Title VI of the Civil Rights Act of 1964 (42 USC 2000d et seq.) ensures that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, and disability. In addition, Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs that a federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority, vulnerable age group, and low income populations (59 FR 7629).

- Land owners and residents within or near the project area
- School board(s)
- Emergency responders
- Police department(s)
- Identifiable local interest or local action groups

Care should be taken to balance the often competing needs of Statewide and local constituents. While the county and local agencies, residents, and businesses often bear greater direct impacts associated with many improvement options, the purpose and function of the route dictate the needs in serving the Statewide population and should be taken into consideration when evaluating whether to bypass a community.

4.1.10 Cost to Construct

A comparison of the cost to construct both bypass and through-town options should be considered when deciding whether to bypass a community. This cost can be weighed against the cost of the impacts and the benefits provided by many of the factors discussed above.

4.2 REVIEW AND APPROVAL

The factors discussed in [Section 4.1](#) are useful in reviewing the impacts, benefits, and costs of both bypass and through-town options. Sound judgment, public input, and a consistent, Statewide approach must be exercised in making the final decision on whether a bypass option is warranted.

Because each project is unique, the PMT is responsible for reviewing the project and deciding which of the aforementioned factors are applicable as well as the level of analysis required. The lead office then prepares a technical memorandum that evaluates the applicable impacts, benefits, and costs of the bypass option. After the PMT has reviewed and accepted the technical memorandum, the PMT's recommendation on whether to bypass a community is vetted with the HDMT in a Project Review meeting or Project Briefing. This may occur during the normal course of [project development](#) if both bypass and through-town options are carried forward in the range of project alternatives, or it may be a separate meeting to decide whether the range of alternatives will include only bypass options.

Sound judgment, public input, and a consistent, Statewide approach must be exercised in making the final decision on whether a bypass option is warranted.

Chapter 5

Guidance for PMTs

CHAPTER 5 GUIDANCE FOR PMTS

The formal basis of the Iowa Department of Transportation’s (Iowa DOT’s) **Project Management Team (PMT)** concept is multidisciplinary collaboration and collective **development** of a specific **project** with input from all affected offices. Therefore, PMTs consist of experts and decision makers in all relevant major planning and development disciplines, who are brought together early in the project planning phase. This chapter offers guidance for PMTs on a variety of topics, including following the guiding principles of the **project development process**, understanding the roles and responsibilities of those involved with the PMT, participating in meetings, understanding the district’s role in Local Public Agency (LPA)-led projects on the **primary road system**, participating in **stakeholder** involvement, coping with project constraints, and staying on track throughout the project development process.

5.1 GUIDING PRINCIPLES

PMTs are to follow the **project development** principles that are discussed in detail in **Chapter 1**. Additional information for PMTs relative to each principle is as follows:

1. *Multidisciplinary project management* – A PMT consisting of experts and decision makers in all relevant major planning and development disciplines takes responsibility (jointly and severally) for developing a quality, constructible project on time and on budget.
2. *Iowa DOT district leadership* – District staff, led by the District Engineer (DE) and others as appropriate during project development, have project oversight.
3. *Early problem identification* – By initiating data collection early and investigating all reasonable alternatives fully, solutions can be developed based on complete, factual, reliable information.
4. *Uniform, integrated development process* – Maximum continuity of data throughout project development optimizes the process and promotes fiscal soundness and project credibility.
5. *Avoidance of environmental impacts* – The PMT should work toward avoiding **environmental** impacts to the maximum extent practicable. When impacts are unavoidable, the PMT should document avoidance and minimization evaluations completed, document reasons for selecting an alternative that does not avoid impacts, make design allowances for minimization details, and make programming allowances for **mitigation** of unavoidable impacts as appropriate.
6. *Context-sensitive solutions, including context-sensitive design* – This approach considers the total context of a transportation project and involves all stakeholders in developing a project **concept** and facility design that:
 - Fit the roadway into its environment (“context”).
 - Preserve scenic, aesthetic, historic, and environmental resources (“sensitive”).
 - Maintain safety and mobility (FHWA 2002).

PMTs consist of experts and decision makers in all relevant major planning and development disciplines, who are brought together early in the project planning phase.

7. *Proactive stakeholder involvement and consensus building* – An open, transparent, multifaceted process provides for broad-based, ongoing input from resource agencies, local governments, and other stakeholders for consideration during decision making. Both internal and external customers are included, and not only are decisions, but also the reasons for the decisions, thoroughly communicated to all affected Iowa DOT offices and stakeholders.
8. *Merged compliance with NEPA and Section 404 requirements* – Merging the [National Environmental Policy Act \(NEPA\)](#) and Section 404 of the Clean Water Act (Section 404) compliance processes streamlines project development and promotes interagency cooperation. [Concurrence point](#) meetings are a means of obtaining buy-in to advance the project from one development phase to the next. (See [Chapter 8, Statewide Implementation Agreement and Concurrence Point Process](#), and [Appendix B, Statewide Implementation Agreements](#).)

The project development principles do *not* authorize PMTs to:

- Remove or replace the project development responsibilities of individual offices within the project development process. For example, the Office of Location & Environment (OLE) does planning and preliminary engineering work, while the Office of Design (Design) does design and final engineering work. The difference is that OLE now does its work by including the early and continuous input and buy-in from those who are affected by its decisions, just as Design does for projects it initiates. In essence, the PMT is the vehicle for earlier and increased involvement and information sharing by all who are charged with developing a project. The buy-in/teamwork concept is further propagated to all those offices with responsibility for developing a project from the planning study¹ through [letting](#).
- Circumvent the resource allocation responsibility of any individual office director. The PMT does not have resource allocation authority other than negotiation and commitment responsibility for the office each member represents. The PMT must identify resource needs as early as possible and work with individual office directors to ensure that resources (internal and/or outsourced) are available and can be committed before a development schedule is finalized or a problem is encountered.
- Make scheduling changes that would directly or indirectly move a project letting between State of Iowa (State) fiscal years without prior approval from either the Highway Division Director or the Project Delivery Bureau Director. Working through the Project Delivery Bureau’s Project Scheduling Engineer (PSE), the PMT does have the authority to make minor adjustments to a schedule within a program year. Additional details about scheduling are presented in [Section 5.2.2.2](#).

The PMT is the vehicle for earlier and increased involvement and information sharing by all who are charged with developing a project.

5.2 ROLES AND RESPONSIBILITIES

The PMT is established by the DE and includes key individuals from the major disciplines (that is, the Project Delivery Bureau offices) involved in developing a project, as noted in [Chapter 1](#). The DE and assigned district staff provide consistency for any PMT because they typically retain overall delivery responsibility of the project from concept development through project letting, and longer if major plan revisions are needed during the construction phase. Other key PMT members typically change roles as a project moves through the project development process. Each member brings different elements to the team by virtue of his or her individual experience and assigned work responsibilities within Iowa DOT.

¹ As used here, a “planning study” is conducted before a project moves into the development process.

The DE and assigned district staff provide consistency for any PMT because they typically retain overall delivery responsibility of the project from concept development through project letting.

In addition, representatives from other Iowa DOT offices or sections within those offices may not be members of the PMT but instead may serve as [support functions](#). Finally, the Iowa DOT [Highway Division Management Team \(HDMT\)](#) offers guidance to the PMT, and the Federal Highway Administration (FHWA) Iowa Division participates as a member of the PMT to provide input on FHWA requirements for the project. The roles and responsibilities of all of those involved with the PMT are discussed below.

5.2.1 PMT Leadership

The DE, who has the overall responsibility to manage and deliver the project, is responsible for PMT leadership because the district is closest to the customer and the most familiar with customer and infrastructure needs. Often, the DE will delegate district-level PMT responsibilities to the District Planner during the planning phase and to the Assistant District Engineer (ADE) during the design phase. Both phases are essentially the same with respect to the application of team leadership at the district level. In addition, on a case-by-case basis, the DE typically delegates administrative lead for day-to-day management of a project to a Project Delivery Bureau office, which typically further delegates project responsibility to an individual Project Manager (PM) within the office.

The concept of developing a project via a PMT remains constant from the earliest planning study through final design, [right of way](#) acquisition, and letting; however, PMT leadership and project management do change as a project moves from the conclusion of preliminary engineering to the beginning of design. PMT leadership will typically shift for a [Type I](#) and some [Type II projects](#) from OLE to either the Office of Bridges & Structures (OBS) or Design. Depending on the project type and general agreement between Project Delivery Bureau offices, the change in PMT leadership typically occurs at the [D00](#), or [D02](#), or [D05](#) event date.

The DE has responsibility to develop a project on time and within the programmed budget and schedule; within these limits, these responsibilities are typically further conveyed administratively to the PMT, except where a major modification is warranted (for example, change in program year, change in [logical termini](#), or major concept change). In that case, the HDMT will inform the DE and PMT of the modification and will modify the project development schedule and/or the programmed budget accordingly. In all other cases, the key elements are within the DE's and PMT's span of control.

5.2.2 PMT Members

Through delegation of responsibilities from the DE and within delegated limits, the PMT is charged with the administrative lead for day-to-day management of the project through all phases of the development process. The PMT makeup and PM would most likely change as a project moves through the various phases of development. For example, once a project has a [preferred alternative](#) (that is, preliminary engineering is done and the [corridor](#) has received NEPA approval), OLE staff will move from a more active role on the PMT to one of support or technical advisor, and OBS or Design will assume the leadership role to champion the development through to letting.

In addition to day-to-day management, which includes coordination with supervisors and support functions, the PMT is responsible for the project development schedule, project cost estimates, and programming.

5.2.2.1 Day-to-Day Management

The PMT's *de facto* authority comes when individual members collectively make decisions based on sound data while keeping their supervisors informed and involved as the project proceeds. Thus, the PMT's responsibility is to develop a project in an open, collaborative, consensus-building, and decision-making process that occurs only after considering all available, relevant data (both internal and external). It is also the PMT's responsibility to effectively build consensus and present the HDMT with a project that has no surprises. To that end, flexibility is built into the process for a PMT to recognize sensitive projects or issues and, where needed, spend extra time acquiring feedback from the HDMT.

Specifically, the PMT members' responsibilities are:

- To provide insight and expertise at each step of the process.
- To ensure that their concerns are adequately addressed throughout the project development process, including selection of the preferred alignment.
- To work together with the other PMT members to identify potential problems early and to develop solutions through consensus.
- To keep supervisors informed of progress on the project.
- To alert supervisors to potential problems early in the process and enlist the supervisors' participation in solving problems identified at the office and PMT levels. For example, if a PMT member recognizes there is a problem with staffing to keep the project on the development timeline, the PMT member should alert the supervisor. It is the supervisor's responsibility to work with the PMT member and, if appropriate, the Project Delivery Bureau Director to develop a solution.
- To bring answers and solutions to potential problems, for example from supervisors or the design project engineer, back to the PMT for discussion and resolution at the team level. For example, if a project is in the develop alternatives phase and one alternative under consideration has a constraint that would require a design exception, Design's PMT member should identify the potential issue, notify the PMT, and seek resolution. If another alternative is not readily available via the prudent and feasible test, the Design PMT member should take the issue to the Design Engineer and ask whether a design exception would be appropriate.
- To act as a liaison to their offices and to areas of specialty or technical experts within their offices.
- To represent the support functions (discussed in [Section 5.2.3](#)) and identify appropriate times to involve them.
- To provide the support functions with all pertinent facts needed to complete their work, or to provide informed guidance.
- To ensure that the support functions' work product and deliverables are incorporated into the project design.

The PMT's responsibility is to develop a project in an open, collaborative, consensus-building, and decision-making process that occurs only after considering all available, relevant data (both internal and external).

PMT members are expected to coordinate within their offices and bring answers and solutions to potential problems back to the PMT for discussion and resolution.

Individual PMT members' authority is somewhat more difficult to quantify, mainly because it has two basic components: 1) authority delegated from supervisors, and 2) authority conveyed from within the PMT, as follows:

- The degree of authority a PMT member has from the supervisor affects the process insofar as the number and level of issues that need to go back to the supervisor for resolution. A situation requiring excessive involvement of the supervisor can negatively affect timely decisions at the PMT level and should be avoided to the fullest extent possible.
- The degree of authority a PMT member has from the PMT is essentially an issue of credibility (that is, how well the member works within a team environment and is able to share ideas and concerns). If a problem arises, PMT members are encouraged to take the issues to their Office Director, the Project Delivery Bureau Director, and/or to the appropriate DE.

If issues are interfering with a PMT's ability to accomplish its mission, such issues should be taken to the DE or the Project Delivery Bureau Director, or brought to a Project Review meeting or Project Briefing (defined in [Section 5.3, Meetings](#)) for discussion and resolution.

5.2.2.2 Project Development Schedule

A valid schedule at the outset and early identification of problems should greatly minimize problems, if not totally eliminate them.

Management of the project development schedule is solely a function of the PMT and the PSE. The PMT must coordinate with the PSE to establish the project schedule very early in the project development process and then manage project development according to that schedule.² The PMT monitors the schedule and recommends changes to the DE, Project Delivery Bureau Director, and the PSE. If the PMT is functioning as intended, early identification of problems should enable the PMT to guide the project over potential hurdles without major impacts on the schedule or budget. The PMT has the authority to work directly with the PSE to modify the project development schedule

within a program year; however, a change that moves the delivery of a project from one State fiscal year to another requires approval from the Project Delivery Bureau Director. It cannot be overemphasized that a valid schedule at the outset and early identification of problems should greatly minimize problems, if not totally eliminate them.

5.2.2.3 Project Cost Estimates

The PMT in concert with the DE and PM prepares engineering cost estimates, scheduling updates, financial plans, and project management plans at various phases and for various reasons in the project development process. Each updated estimate should be based on more constrained project variables and should better reflect the final estimate. PMTs need to be ever vigilant to refrain from incremental ratcheting up of major costs or delays without the HDMT's prior buy-in.

Cost updates and changes to the budget must be reported to the DE and Project Delivery Bureau Director. Cost escalation due to inflation and refined estimates needs to be captured in the Financial Plan and provided to the Project Delivery Bureau Director. Cost escalation due to project creep and changes in concept shall be documented on a cost change form ([Appendix E, Cost Estimate Change Form](#)) and formally presented to the HDMT at a Project Review meeting or Project Briefing (see [Section 5.3](#)) prior to full implementation.

² In the case of projects without a PMT, the PSE initiates the schedule in cooperation with the production schedule team.

In conjunction with budget management, the PMT, through the PM, is also responsible for developing and maintaining the Financial Plan for projects and project corridors (NEPA limits) with a cost of \$100 million or more. FHWA guidance on financial plans is available at http://www.fhwa.dot.gov/ipd/project_delivery/resources/financial_plans/.

5.2.2.4 Programming

On or about December first of each year, the Project Delivery Bureau Director will request that all Project Delivery Bureau offices, Iowa DOT districts, and the Systems Operations Bureau provide updated cost and delivery time estimates for projects being developed that are in the Five-Year Transportation Improvement Program (Five-Year Program) and for selected projects that may be considered for programming but are not in the current Five-Year Program. Typically, this request is specific to the resurfacing, restoration, rehabilitation, and reconstruction (4R) projects and added-capacity-type projects. Separate requests are sent to others about the resurfacing, restoration, and rehabilitation (3R); bridge; and safety programs.

The updates provided to the Project Delivery Bureau Director are used to begin the development of a new Five-Year Program and culminate with the Iowa Transportation Commission's (the Commission's) approval of a new Five-Year Program in June. When asked, PMTs are responsible for generating an updated cost estimate, validating the development schedule, and delivering both to the PSE by mid-January.

The formal program development work occurs from January to the end of March, with meetings between the Project Delivery Bureau, Highway Division Director, various DEs, and the Office of Program Management. It is during this time that projects in the existing program are reviewed for cost and delivery time, and programming consideration is given for new projects and for projects on the Monitor List. The development of a new program is an iterative balancing exercise based on several factors, not the least of which is needs, the Commission's desires, funding capacity (projected State and federal revenue), updated project costs, and estimated letting dates. During this January to March development time, the PMT and PM can expect to receive follow-up questions and requests for additional information. The goal is to have a draft program to present at the May Commission meeting and to have the Commission approve the proposed program at its June meeting.

5.2.3 Support Functions

Support functions are those groups or individuals who do not have direct membership on the PMT but whose work product or expertise is needed for the PMT to make informed decisions, or to provide necessary project [clearances](#) and/or construction permits. Examples are the Design – Soils Design section; Design – Photogrammetry and Preliminary Survey section; OLE – Public Involvement section; Office of Contracts; Office of Local Systems – Project Agreements section; Office of Maintenance; Office of Program Management; Office of Systems Planning – Traffic Modeling section; and District Field Services.

Sometimes it may be more efficient to add a support function to the PMT during its mission-critical phase of the work. On a case-by-case basis, the PMT should decide whether to include the support function by asking, "What is reasonable and most efficient?"

5.2.4 Iowa DOT Highway Division Management Team

The HDMT's role is to keep the Commission apprised of the project through updates and programming changes and then to provide guidance to the PMT leadership. Due in part to the DE's involvement with Commission workshops, some of this guidance happens almost real-time, while other times guidance comes later through other less formal interactions with the Commission.

5.2.5 FHWA Iowa Division

FHWA Iowa Division will participate in PMTs in accordance with the *Federal-aid Highway Program Stewardship and Oversight Agreement* between Iowa DOT and FHWA Iowa Division. "For Full Oversight projects, FHWA will participate in all PMT meetings. For State Administered projects requiring either an [Environmental Assessment and Finding of No Significant Impact] EA/FONSI or an [Environmental Impact Statement and Record of Decision] EIS/ROD, FHWA will participate only in PMT meetings until the NEPA process is completed" (FHWA 2012).

For PMT meetings, FHWA will actively participate in the meeting and provide input on FHWA requirements for the project. PMT minutes will document those discussions and agreements and will be reviewed by FHWA. Comments will be provided to Iowa DOT if errors or omissions are noted by FHWA.

5.3 MEETINGS

PMT members participate in a variety of meetings: PMT meetings, Project Review meetings, and Project Briefings. The purpose and timing of each meeting type is discussed below.

5.3.1 PMT Meetings

PMT meetings are held when the PMT needs to get together to identify and resolve issues, build consensus, and manage the project needs. A good management strategy is to schedule recurring (perhaps monthly) meetings well into the future. That allows meetings to be held at the tentatively scheduled times if there are agenda items, or to be canceled if there are no items. This approach has advantages, but the meeting frequency is a PMT decision. PMT meetings should have an agenda to keep the meeting focused and meeting minutes to document decisions.

PMT meetings should have an agenda to keep the meeting focused and meeting minutes to document decisions.

It is important that the PMT not lose sight of the goal of continuous, multidisciplinary participation, and buy-in during the development of a project. PMTs should not wait to schedule a meeting until they have an identified problem. It is imperative to be proactive and maintain continuous communication and information dissemination to all team members.

5.3.2 Project Review Meetings

The purpose of Project Review is to update and track project development progress, to seek guidance on any one of multiple project issues, to provide project-specific information to the HDMT and FHWA on alternatives, to provide information and address concerns from public meetings and other stakeholder input, and to seek input from the HDMT in a formal setting.

5.3.2.1 Scheduling

Project Review meetings are pre-scheduled a year in advance, typically on the first Friday morning of each month, and are managed by the Project Delivery Bureau Director. The Project Delivery Bureau will send out a request for agenda items about 2 weeks prior to a monthly meeting and will provide an agenda about 1 week prior to the meeting. When a request for agenda items is sent out, a DE would request that his or her particular project be added. If there are no agenda items for a particular month, an email will be sent out canceling that month's meeting.

5.3.2.2 Format

DEs generally lead the discussion, with selected PMT members present for support as needed. Data presented at the meetings should be structured as informational briefings. Project Review meetings are approximately 3 hours (9:00 to 11:30 a.m.) and can have more than one project for discussion, so presentation time and content are important.

Examples of issues taken to Project Review meetings are the following:

- Information being prepared for a formal [public hearing \(PH\)](#). Depending on the results of a hearing, a follow-up meeting could be necessary if something unanticipated resulted.
- [Value Engineering \(VE\) studies](#).
- Preliminary discussions about corridor preservation opportunities.
- Project-specific programming and development schedule changes. This could include discussions about any of various agreements needed to let a project.
- HDMT input or direction.

5.3.3 Project Briefings

The concept and use of Project Briefings has evolved because some decisions need to be vetted with the HDMT in a small group setting. A Project Briefing is an informal, internal working meeting that does not usually include a wide Iowa DOT audience or FHWA. As with a Project Review meeting, the purpose of a Project Briefing is to update and track project development progress, resolve issues, discuss preliminary decisions, address concerns received from the local agencies and the public, and seek input from the HDMT.

Depending on a particular project's size, the complexity of the work, and the HDMT's desires, a Project Briefing can be one of the following:

- An item/issue added to the formal Quarterly Project Briefing agenda
- Regularly scheduled meetings specific to a particular project. Typically, this is applicable to large urban-type corridors with high visibility.
- Ad hoc meeting driven on a case-by-case basis of a project's needs.

The commonality in the three is the PMT's need to seek guidance and provide feedback to the HDMT on a particular issue or list of concerns. The three types of Project Briefings are detailed below.

5.3.3.1 Quarterly Project Briefings

The Assistant Office Director of OLE manages the Quarterly Project Briefing schedule and agenda. Quarterly Project Briefings are scheduled a year in advance, and every effort is made to hold the meetings in the second full week of January, March, June, and September. As with the Project Review meeting process, a call for agenda items is distributed to each DE, Design, OBS, and OLE Location Engineers

about 2 weeks prior to a meeting. If there are any topics, an agenda will be prepared and circulated to the same distribution list. If there are no agenda items, the meeting will be canceled for that quarter.

As a general rule, the PM, DE, or office director for a given project will request an agenda item for discussion and will be responsible for preparing any handouts as well as leading the discussion during the meeting. Other PMT members and district staff are welcome to attend to gather information and to provide subject matter expertise as well as support.

5.3.3.2 Regularly Scheduled Project-Specific Briefings

It has become common for large urban corridor studies to have recurring scheduled Project Briefings specific to that project. Typically, the DE along with the PM and the Project Delivery Bureau Director will determine if the project/corridor would benefit from having regular meetings with the HDMT. If so, OLE's PM will be responsible for pre-scheduling a block of monthly meetings with the DE, Project Delivery Bureau Director, Highway Division Director, OLE Director, and other key PMT staff as needed. Depending on the phase of development, it could be necessary to include Design and OBS as well as the Office of Right of Way (ROW).

As a general rule, the PM is responsible for developing agendas and preparing any handouts as well as leading the discussion during the meeting. Other PMT members and district staff are welcome to attend to gather information and to provide subject matter expertise as well as support.

5.3.3.3 Ad Hoc Project Briefings

Ad hoc project briefings can be called at any time all affected parties are available. This type of meeting is typically scheduled by the PM or the DE and focuses on a single issue.

5.4 DISTRICT'S ROLE IN LPA-LED PROJECTS ON THE PRIMARY ROAD SYSTEM

An LPA-led project on the primary road system, for the purpose of this manual, is the development (up to letting) of either of the following:

- A potential construction project or corridor study initiated and contractually administered by a city or county on a primary road or interstate road under Iowa DOT's jurisdiction
- A project that involves the [secondary road system](#) and has an agreement to be transferred to the primary road system once the project is completed or at some later date

These projects could result in one of the following:

- Iowa DOT programming and LPA- or Iowa DOT-administered construction of a segment on the [National Highway System \(NHS\)](#)
- LPA-led programming and construction as part of the secondary road system, but through agreement, the project ultimately will be transferred to Iowa DOT and added to the NHS
- LPA-led programming and construction as part of the NHS or other primary road system

LPA-led projects on the primary road system can present process challenges, particularly when they do not follow Iowa DOT's standard project development process and lack proper coordination with appropriate Iowa DOT central complex offices and field staff. These challenges can result in key staff being uninformed about a project that has already progressed to a point where significant

Iowa DOT's involvement in LPA-led projects varies, but in the end, Iowa DOT has a stake in risk management, design standards, funding, and QA/QC in LPA-led projects.

development work has been completed but the project is lacking the quality assurance/quality control (QA/QC) and management review required for an Iowa DOT-led and -administered project.

It is Iowa DOT's preference that primary road system and interstate projects be developed and administered by Iowa DOT. That said, it is recognized that there are a few situations where it might be logical for an LPA to take the lead, such as an earmark championed and received by the LPA.

5.4.1 Iowa DOT Responsibility for LPA-Led Projects

For multiple reasons, there are different duties, responsibilities, and oversight priorities for Iowa DOT-led versus LPA-led project development and FHWA's full oversight responsibilities for interstate projects (refer to the [FHWA/Iowa DOT Oversight Agreement](#)). LPA-led projects are not tracked by the various offices within Iowa DOT that have process responsibilities for primary road system and interstate projects because the assessment of risk is not Iowa DOT's to manage for an LPA-led project. However, Iowa DOT has a stake in risk management, design standards, funding, and QA/QC in the case of an LPA-led project that will ultimately be one of the following:

- A project constructed on the primary road system without regard for construction contract administration lead
- A project that involves right of way being acquired in Iowa DOT's name, or ultimately transferred to Iowa DOT without regard for which entity actually acquires the right of way
- A project acquired by Iowa DOT via a transfer of jurisdiction, project agreement, or other mechanism

In those cases, adequate background and involvement is needed so that Iowa DOT's risk management and project development principles are factored into the project and, further, so Iowa DOT is able to pick up the project while maintaining the development momentum.

5.4.2 District Duties for an LPA-Led Project on the Primary Road System or Interstate System

Districts have several coordination and management duties for an LPA-led project on the primary road system that cannot be overlooked. The majority of these involve fulfilling the duties of a PMT for coordination with central complex offices, Iowa DOT field staff, and the HDMT. For example, the district is responsible for completing the following tasks:

- Obtaining an Iowa DOT project number.
- Ensuring that a project concept is written and circulated in accordance with Design's Project Concept standards for roadways (W:\Highway\Design\PreDesign\3R and 4R\Shells\4R Draft Concept.docx) and bridges (W:\Highway\Design\PreDesign\bridges\Shells\DraftConceptShell.docx).
- Generating and circulating for review and comment any pre-design and development agreements through the various Iowa DOT Highway Division offices. The purpose is to ensure that everyone is aware of the project's goals and overlap responsibilities from the onset.
- Working with the PSE to establish a project schedule in Iowa DOT's Project Scheduling System (PSS). A PSS schedule is required for developing any Iowa DOT project as is an Iowa DOT project number. Without a PSS schedule and an Iowa DOT project number, all processes that are driven during an Iowa DOT-developed project are not triggered; therefore, there is incomplete QA/QC, and risk management components are not factored into the project.

- Ensuring that the multidisciplinary involvement and information-sharing principles of Iowa DOT’s project development process are instituted from the beginning. The district may either follow the PMT concept of development provided in this manual or adapt some other methodology. The key is neither what the collaborative group is called nor its exact makeup. What is important is that there is active and ongoing project awareness, consultation, and information sharing not only at the project and district levels, but also including all central complex offices typically included in a State-developed project.
- In the case of an LPA-led project, obtaining a schedule and ensuring that the schedule in PSS is maintained. This could involve district staff inputting data and clearing events for tasks completed by the LPA or its consultant.
- Ensuring that [resource agency](#) coordination meetings are conducted in accordance with Iowa DOT’s merged NEPA/404 concurrence process (see [Chapter 8](#)).
- Adding the project to the Production Schedule Review meetings so as to actively track and discuss the project during the development process.
- Ensuring that the principles of context-sensitive solutions (CSS) are applied and documented in accordance with FHWA and Iowa DOT guidelines (see [Chapter 6](#)).
- Ensuring that VE is completed in accordance with FHWA guidance in 23 CFR 627, as modified by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).
- Depending on the cost of a project/corridor, ensuring that a Financial Plan and Project Management Plan are developed in accordance with FHWA requirements and Iowa DOT guidance. (Corridor costs equal to or greater than \$100 million require a Financial Plan, and corridor costs equal to or greater than \$500 million also require a Project Management Plan.)

Iowa DOT encourages LPAs to use the Iowa DOT project development process as described in this manual to develop any project that an LPA manages.

5.4.3 Application of Iowa DOT’s Project Development Process for an LPA-Led Project

Iowa DOT encourages LPAs to use the Iowa DOT project development process as described in this manual to develop any project that an LPA manages. However, use of the project development process is optional for any work being developed by an LPA. Because of the interdependency of all tasks in the project development process, the benefits from using the process will not be achieved by shortcuts and incomplete deliverables, or by missed opportunities to implement the process described in this manual.

5.5 STAKEHOLDER INVOLVEMENT

Iowa DOT’s approach to stakeholder involvement is “early and often.” Early stakeholder involvement is typically a responsibility of the district, which could include PMT involvement.

For projects on the NHS and the Interstate System that require a formal PH, projects that implement corridor preservation, and projects that involve Iowa Code Chapter 6B right of way impacts, the district will coordinate with the OLE – Public Involvement section to schedule and conduct formal PHs.

Any project requiring a NEPA document—specifically an EA or an EIS—must have a written [public involvement plan \(PIP\)](#) that is retained as part of the project’s administrative record. The PIP also must document Title VI project considerations and, if needed, how Title VI requirements will be addressed.

A PIP can be developed by the PMT, the district, or through a joint effort. It need not be voluminous, but it does need to be detailed enough to include the following:

- Document and track the stakeholder involvement steps for the project and when they are planned to occur.
- Identify who manages the process and organizes meetings at the various stages of stakeholder involvement.
- Identify who is responsible for certifying the property owner list.
- Identify who is responsible for producing and publishing the notice of hearing, displays, and the various handouts for a meeting.
- Describe how the meeting and any comments received will be documented.
- Provide a verifiable measurement that those steps were completed.

Iowa DOT's approach to stakeholder involvement is "early and often."

It is important to apply flexibility in tailoring the stakeholder involvement program to the particular needs of each project. To further the goal of open meetings and enhanced stakeholder involvement, [Chapter 7, Guide to Stakeholder Involvement](#), provides guidance on structuring flexible stakeholder information.

5.6 CONSTRAINTS

Developing a project from inception to letting is at best a choreographed balancing act that starts with assembling disassociated bits of information. Over time, new initiatives like Geo Nexus and Geographic Information Systems (GIS)-based Asset Management may help link the various bits of information and streamline the project development process, but for now, examples of challenges the PMT could face are discussed in the following subsections.

The early development of a project concept is essential because this is when the project's Purpose and Need are established and the level of NEPA action required is determined.

5.6.1 Project Concept Development

Developing a project concept can be easy in the case of a minor change and improvement project where the Design Field Exam Engineer writes the project concept, or it can be challenging in the case of a corridor where there are competing interests. The early development of a project concept is essential because this is when the project's Purpose and Need are established and the level of NEPA action required is determined. Without a project concept, the environmental and NEPA compliance process cannot be initiated and time is lost. For minor change and improvement projects, a project concept is also used to establish corridor study limits, so without a concept, corridor data collection cannot begin.

5.6.2 Project Kickoff and Scheduling

Getting a project off the ground and getting the field data collected can be a challenge. During project scheduling, it is important to consider the seasonal restrictions for taking aerial photography and conducting field studies, as follows:

- [Aerial Photography](#) has a season-sensitive data collection window, and developing a [digital terrain model \(DTM\)](#) is sequential based on having good photography. If a project is initiated after the spring flight window, the PMT can expect up to a 1-year delay. This can be compounded because the DTM can take several months more to be developed. With some limitations, light detection and ranging (LiDAR) can fill this gap for early planning purposes; however, for credible data, LiDAR also has a season-sensitive data collection window.

- Field studies for cultural artifacts, [historic properties](#), wetland delineations, and threatened and endangered species are non-winter activities. Therefore, if a project starts at a time that does not allow this work to begin during the field season or does not initially allow for roughly one full field season, a delay in data availability will occur. If an environmental constraint map for the corridor study limits is not timely, project decisions for preliminary engineering and NEPA will need to be delayed until the data are available, thus slowing down the project development process.

5.6.3 Traffic

Iowa DOT is required by FHWA to use design-year traffic projections from the appropriate [metropolitan planning organization \(MPO\)](#) or [transportation management area \(TMA\)](#) model. However, the MPO/TMA model is not always reliable. If the project's proposed letting date plus the 20-year design life is outside the existing model's certification date, then an updated model is needed from the MPO/TMA, or the Office of Systems Planning will need to complete a projection to match the project's design-year needs.

On several occasions, updating a specific segment of the model has become a project responsibility. Not only does this take time and increase the project's cost, but also any modeling work that Iowa DOT does for the MPO or TMA has to have the MPO's or TMA's signature accepting it as a valid part of its model.

5.7 STAYING ON TRACK

The best solution for processes that are likely to cause a scheduling problem is early and continuous involvement of all stakeholders. For assistance, the PM should work with the PSE.

The project development process offers the opportunity to manage scheduling challenges effectively because of PMT oversight, concurrent processing, improved communication, and stakeholder involvement. It cannot be emphasized enough that taking a serious approach to managing projects, instead of letting the projects manage Iowa DOT, will enable a credible and viable scheduling process to be developed. Once a credible schedule is developed, the PMT and mid-level managers can use this planning tool to tell the HDMT: "The consequences of doing 'X' are 'A' (delivery time), 'B' (project cost), and 'C' (resources)."

Until the PSE has a formal scheduling process in place, the PMT should formally lay out the project schedule at one of the first PMT meetings, modeling it after the schedule shown in [Appendix A, Project Development Gantt Charts](#).

The project development process offers the opportunity to manage scheduling challenges effectively because of PMT oversight, concurrent processing, improved communication, and stakeholder involvement.

Chapter 6

Context-Sensitive Solutions

CHAPTER 6

CONTEXT-SENSITIVE SOLUTIONS

Context-sensitive solutions (CSS), which includes context-sensitive design (CSD), is a collaborative, interdisciplinary approach to project planning and development that transforms highway design. The CSS approach “considers the total *context*¹ within which a transportation improvement project will exist” (FHWA 2007). It fits the roadway into the environment² rather than modifying the environment to fit the roadway. Stakeholder input and project context guide the development of the project concept and design elements to provide “a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility” (FHWA 2007). CSS is an important part of the Iowa Department of Transportation’s (Iowa DOT’s) project development process.

The Federal Highway Administration (FHWA) supports CSS. In its *Flexibility in Highway Design* guide, FHWA states: “For each potential project, designers are faced with the task of balancing the need for the highway improvement with the need to safely integrate the design into the surrounding natural and human environments” (FHWA 1997).³

FHWA promotes CSS as an integral part of its efforts to advance environmental stewardship and streamlined implementation. CSD, a component of CSS, “begins with the early project planning and scoping phases and involves the environmental and public participation process, preliminary and final design, and even construction” (see Appendix F, FHWA Memorandum on Context-Sensitive Design). FHWA urges State Departments of Transportation (DOTs) to “seek to institutionalize the principles of CSD with the same commitment that drove the implementation of the Interstate Highway System” (FHWA 2002). This calls for “innovative thinking, improved coordination, cooperation, interdisciplinary decision-making, streamlined implementation, and community acceptance” (FHWA 2002).

Context-sensitive solutions fit the roadway into the environment and preserve scenic, aesthetic, historic, and environmental resources while maintaining safety and mobility.

6.1 HISTORY OF CSD AND CSS

The catalyst for CSD was the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) (Public Law [Pub. L.] 102-240). FHWA’s *Flexibility in Highway Design* states that when Congress passed ISTEA in 1991, it

maintained a strong national commitment to safety and mobility. ...[and] made a commitment to preserving and protecting the environmental and cultural values affected by transportation facilities. The challenge to the highway design community is to find design solutions, as well as operational options, that result in full consideration of these sometimes-conflicting objectives. (FHWA 1997)

¹ The project *context* includes the environment and the people who live, work, or pass through the area.

² As used here, “environment” is an inclusive term that encompasses not only the natural and historic environments but also the human and socioeconomic environments.

³ Major portions of this chapter and the figures have been excerpted and adapted from *Flexibility in Highway Design*, FHWA-PD-97-062. References to other FHWA publications are also cited.

FHWA's *Flexibility in Highway Design*

...is about designing highways that incorporate community values and are safe, efficient, effective mechanisms for the movement of people and goods. It is written for highway engineers and project managers who want to learn more about flexibility available to them when designing roads. ... Aesthetic, scenic, historic, and cultural resources and the physical characteristics of an area are always important factors because they help give a community its identity and sense of place and are a source of local pride. (FHWA 1997)

Subsequently, a policy statement in the 1994 American Association of State Highway and Transportation Officials (AASHTO) *National Highway System Design Standards* lends support to CSD. The policy states that AASHTO will work “on design criteria and a design process for NHS [[National Highway System](#)] routes that integrate safety, environmental, scenic, historic, community and preservation concerns, and on standards which also foster access for bicycles and pedestrian traffic along with other transportation modes” (FHWA 2005)

In addition, the National Highway System Designation Act of 1995 (Pub. L. 104-59) lends support to CSD. The 1995 act calls for designs that take into account “the constructed and natural environment of the area; the environmental, scenic, aesthetic, historic, community, and preservation impacts of the activity; and access for other modes of transportation.”

CSD and CSS are not new concepts at Iowa DOT. The basics have been applied on a case-by-case basis for some time. Recent examples of projects and concepts for which CSS has been implemented are:

- Updating rest areas using designs that revolve around a theme of local or State of Iowa (State) interest.
- Using a Local Aesthetics Advisory group to consult with the [Project Management Team \(PMT\)](#) for large urban projects.
- Developing an early aesthetic theme for a [corridor](#) project, such as incorporating to-scale art work, a general color scheme for noise walls and structures to accent a local theme, or structural elements for visual effects while traveling through the corridor.
- Allowing the public to have an important role in selecting a motif for bridge type and aesthetic features.
- Using curbed sections to reduce the [right of way](#) needs and avoid local impacts.
- Conducting pre- and post-construction condition surveys and including seismic monitoring in the construction documents to protect historically sensitive buildings and structures.
- Changing from driven pile to drill shafts for bridge, retaining wall, and noise wall foundations to reduce ground-induced vibrations and noise when nighttime work has been specified.
- Establishing design speed for the desired operating speed based on the situation and context of the project.
- Adding bike lanes and pedestrian accommodations for roadways and bridges.
- In sensitive areas, accounting for light pollution when designing roadway lighting.
- Shifting the preferred alignment to avoid cultural and historical features as well as to minimize impacts on Iowa's ecosystems.
- Constructing noise walls with local resident input for aesthetics.

6.2 CONTRAST WITH TRADITIONAL APPROACH

CSS takes [project development](#) to a higher level by asking planners and designers to “think beyond the pavement” and to consider the impacts a highway will have on the area it traverses. The resulting project is in harmony with its surroundings, and the various project elements are in harmony with one other.

CSS remedies the traditional situation in which the decisions made in the early planning and corridor development phases greatly limited flexibility during the detailed design phase and detracted from the

CSS takes project development to a higher level by asking planners and designers to “think beyond the pavement” and to consider the impacts a highway will have on the area it traverses. The resulting project is in harmony with its surroundings, and the various project elements are in harmony with one other.

ultimate design. Traditionally, detailed design occurred in the middle of the process, linking the preceding planning and corridor development phases with the subsequent final design, right of way acquisition, construction, and maintenance phases. While these are still distinct activities, Iowa DOT’s project development process broke with the linear (end-to-end) process and introduced concurrent development among the various disciplines.

In contrast to the traditional approach, CSS allows flexibility when applying design standards as necessary to accomplish the overall project goals. CSS first analyzes the project’s Purpose and Need and then equally addresses safety; mobility; and preservation of scenic, aesthetic, historic, environmental, and other community values.

Community involvement plays a more critical role than in the past. In some situations, private citizens or citizen groups are a part of the project steering committee. Working together with Iowa DOT, communities can have their greatest influence on the final design features during the initial three phases—planning, corridor development, and early design.

6.3 KEY ELEMENTS

Successful CSS enhances design by including:

1. Early, ongoing use of a multidisciplinary design team to assist the PMT
2. Early and continuous stakeholder involvement
3. Definition of the project’s Purpose and Need and the project’s goals
4. Extensive field reviews
5. Development of multiple alternatives (by starting with a blank sheet of paper and involving stakeholders)
6. Attention to details and documentation of the pros and cons of these details as project development progresses
7. Development and evaluation of creative and innovative design solutions
8. Application of flexible and creative design criteria
9. Visualization techniques to help stakeholders and external customers understand the project
10. Refinements during corridor development

Working together with Iowa DOT, communities can have their greatest influence on the final design features during the initial three phases—planning, corridor development, and early design.

The three elements of CSS—stakeholder involvement, problem definition, and [visualization tools](#)—are discussed in more detail below.

6.3.1 Stakeholder Involvement

Stakeholder involvement is effective only if sought from the beginning, while the need for the project is being defined and opportunities for design changes are the greatest. For a smoother and faster process, stakeholder input should also be enlisted while:

- Assessing the characteristics of the area
- Determining community values
- Identifying potential alternatives
- Solving design conflicts

These efforts should be proactive and should go far beyond the usual presentation of well-developed design alternatives at formal [public information meetings](#) and [public hearings](#). For a variety of innovative techniques, see:

- [Chapter 7, Guide to Stakeholder Involvement](#)
- [Public Involvement Techniques for Transportation Decision-making](#), by FHWA and the Federal Transit Administration (FTA), August 2002
- [Community Impact Assessment: A Quick Reference for Transportation](#), by FHWA, Publication No. FHWA-PD-96-036, September 1996, which describes the community impact assessment process

Stakeholder involvement is effective only if sought from the beginning, while the need for the project is being defined and opportunities for design changes are the greatest.

Figure 6-1 illustrates the stakeholders' role in providing input along with professionals during the project development process.

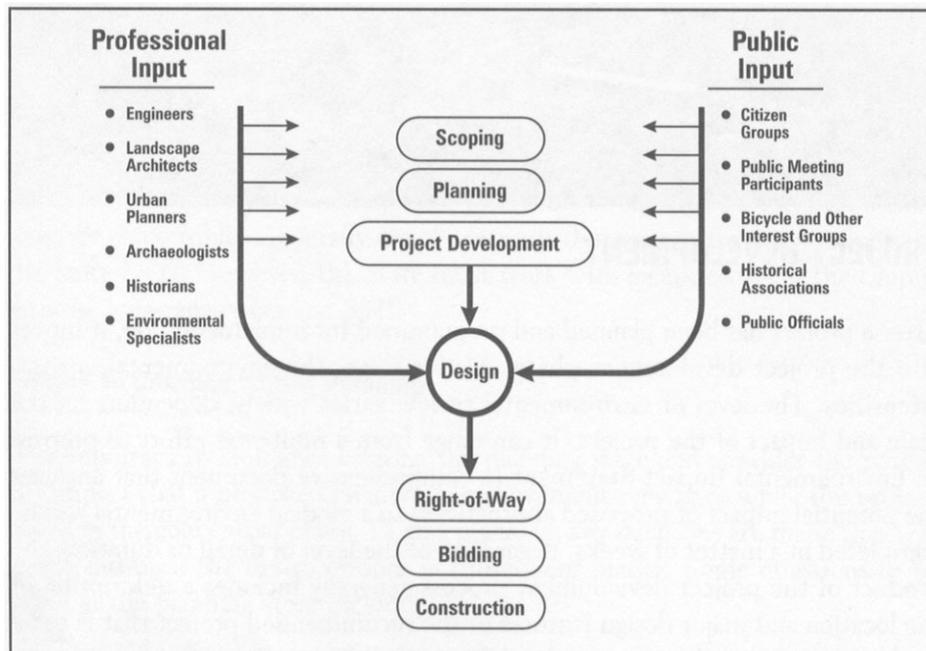


Figure 6-1. Balanced Design with Professional and Public Input

6.3.2 Problem Definition

6.3.2.1 Forward Vision

During the planning and corridor development phases, it has always been important to look ahead and consider the potential impact of a proposed facility or improvement. Forward vision is even more vital when CSS is applied because key decisions will affect and limit the design options in subsequent phases.

Questions to answer during the early phases, with the help of stakeholder involvement, include:

- How will the proposed transportation improvement affect the general physical character of the area surrounding the project?
- Does the area to be affected have unique historic or scenic characteristics?
- Does the area to be affected have any unique natural or human resources that need to be protected?
- What are the community's safety, capacity, and cost concerns?

Questions such as these provide an understanding of the landscape involved, the neighboring community, and the valued resources in the area before engineering design begins. Knowing, for example, which physical features are most valued by the community, and thus have the greatest potential for impact, can help designers avoid them. This reduces the need for [mitigation](#) and the likelihood for controversy.

6.3.2.2 Consensus

Typically, the need for any highway or bridge improvement project is first defined during the planning and/or corridor development phase. This definition usually occurs at the district, regional, and/or local level, depending on the scale of the proposed improvement. For all Iowa DOT work, this is the time to engage the stakeholders and obtain input into the decision-making process.

Defining the transportation problem should include understanding the landscape, the neighboring community, and the valued resources in the area.

Regardless of the problem (or set of problems) identified, all parties must agree that the problem actually exists and that it is accurately identified and well defined. Consensus on acceptable solutions (a range, if possible) is also needed. If early consensus on the definition of the problem and possible solutions cannot be reached, it will be difficult to move ahead in the process and unrealistic to expect consensus on the final design.

Also, there must be agreement that the problem should be remedied. For example, some communities may decide not to pursue a project. They may acknowledge that a roadway is operating over its capacity, but may not want to improve the roadway for fear that such action would encourage more growth along the corridor. Similarly, road access may be a problem, but a community may decide against increasing access because it might spur development. Such decisions are not necessarily standard highway design solutions but are definitely well within the parameters of CSS considerations.

6.3.3 Visualization Tools

Effective communication between two parties requires a common language. In design, this can be achieved with illustrations that show stakeholders what a project will look like after it is built. Increasingly, computer-generated visualization tools are used for this purpose. Designers can communicate conceptually what they are planning for an area, and stakeholders can react with a certain degree of confidence that they understand what is intended. Lower-end computer systems use a

photograph of the existing project area and, by means of computer graphics, superimpose a drawing depicting the new construction. Visualization tools such as these help stakeholders gain a better understanding of the proposed project.

6.4 DEVELOPMENT OF A CONTEXT-SENSITIVE SOLUTIONS CONCEPT

A design concept that follows CSS focuses the project and helps to move toward timely consensus building. Each of the many elements in a highway involves a number of separate but interrelated design decisions. Integrating all these elements to achieve a common goal helps the designer in making decisions. Figure 6-2 illustrates some of the many considerations involved.

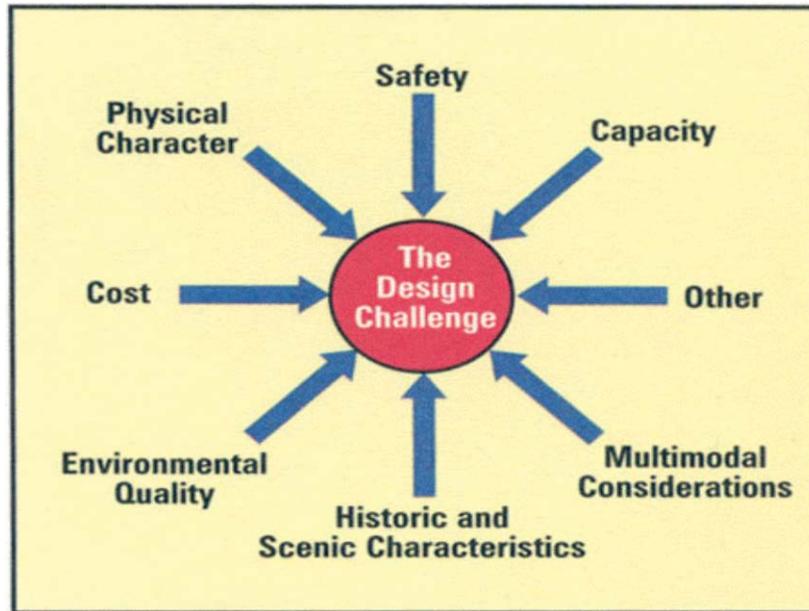


Figure 6-2. Design Considerations

Here again, Iowa DOT's project development process enhances CSS because the PMT is charged with:

- Achieving early and continuous stakeholder involvement
- Establishing a design theme for the roadway and/or determining the existing character of the corridor that needs to be maintained
- Maintaining design consistency with regard to physical size, visual continuity, and avoidance of environmental conflicts, all of which are important factors in CSS

These important functions of the PMT prevent having to forfeit design elements as add-ons late in the project development process, such as landscape treatments to try to embellish a design that is not quite right or is unacceptable to the community. CSS enhances opportunities for early input from landscape architects, architects, planners, urban designers, and others. Enlisting their skills from the beginning increases the chances of project success.

The CSS approach does not necessarily result in the most conservative or lowest-cost design, but it fits the environment better and demonstrates that impacts can be minimized.

Using stakeholder input and project context to guide the development of the concept helps achieve a harmonious, [holistic design](#). Often this approach does not result in the lowest first-cost, and it does not always apply the highest (most conservative) design standards, but it is warranted to fit the roadway into the environment rather than unduly alter a sensitive environment to fit the roadway. In addition, this approach demonstrates to stakeholders that impacts can be minimized.

6.4.1 Scale

People driving in a car see the world at a much different scale than people walking on the street. This large discrepancy in the design scale for a car versus pedestrians has changed the overall planning of our communities.

CSS fully integrates the two different design scales and considers the safety of pedestrian and non-vehicular traffic along with the safety of motorists. For example, proper consideration of scale would minimize the chance of a proposed “improvement” turning a roadway that once allowed pedestrian access to both sides into a barrier and changing the way pedestrians use the road and its edges.

The wider the overall roadway is, the larger its scale. The design element with the greatest effect on the scale of the roadway is its width, or [cross section](#). The cross section can include a clear zone, shoulder, parking lanes, travel lanes, and/or median. Certain design techniques can help to reduce the perceived width, and thus the perceived scale, of the roadway and make it look less imposing. Examples are:

- Limiting the width of pavement
- Breaking up the pavement with a grass or planted median
- Using grass shoulders, as in many parts of the Southeast, which limits the perceived width of the roadway and still provides a breakdown area for motorists
- Providing green space between the travel lanes and the sidewalks or non-motorized vehicle paths

Whether such design techniques are appropriate depends on the context of the area; volume, type, and speed of traffic; and the needs of bicyclists and pedestrians.

Elements (or a lack of elements) along the roadside also contribute to the perceived width of the road. The following may help reduce the perceived width and speed of the road:

- Horizontal and vertical alignment
- Cross section elements
- Vegetation along the roadway
- Buildings close to the road
- On-street parking
- Noise walls

Considering such elements as these is critical in designing a facility that is compatible with its surroundings. These elements can even affect the speed at which motorists travel. All else being equal, the wider the perceived road, the faster motorists will travel. Figure 6-3 illustrates the concept of perceived roadway width.

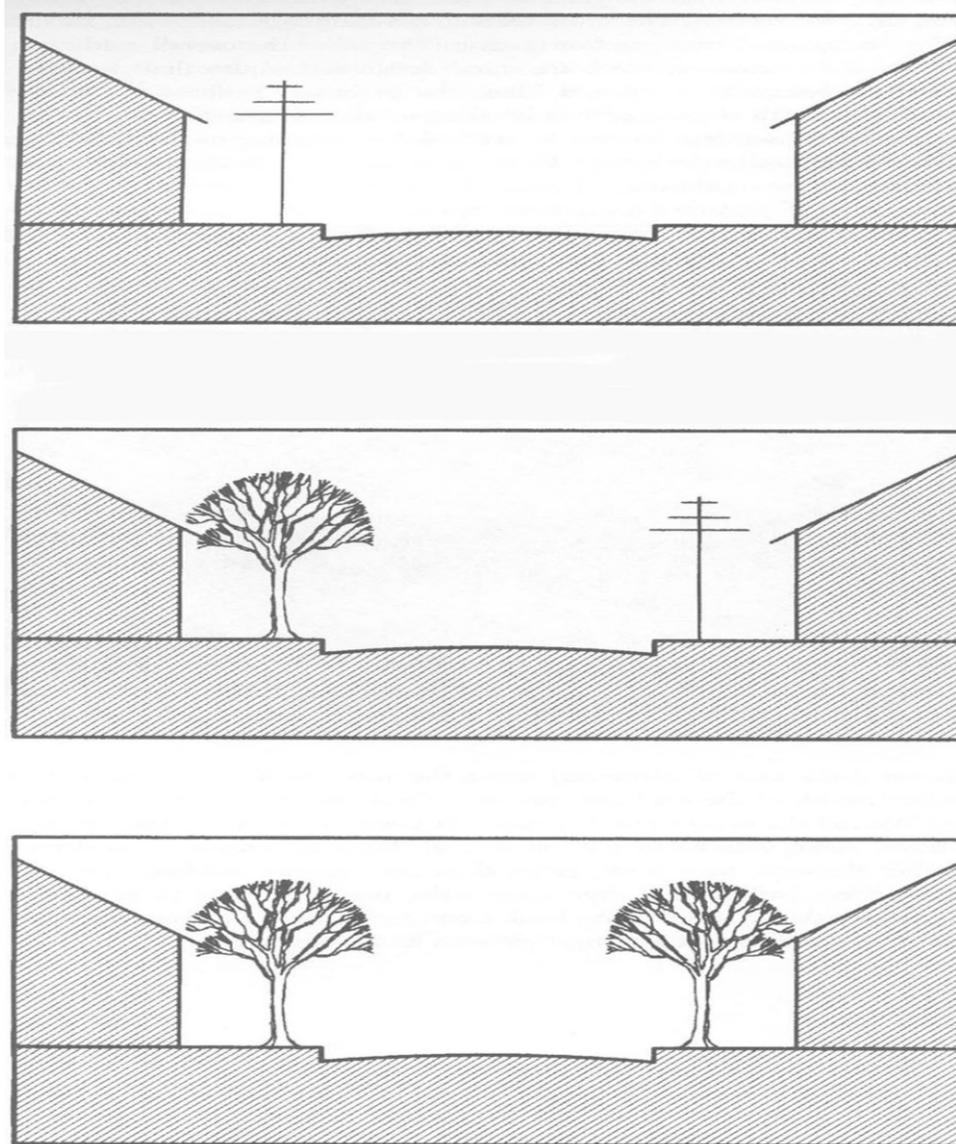


Figure 6-3. Differences in Perceived Roadway Width

6.4.2 Scoping

As in planning, many decisions are made during the scoping phase of corridor development, regardless of the level of detail being studied. Therefore, it is important to identify the various stakeholders in the project and give them the opportunity to become involved (see [Chapter 7, Guide to Stakeholder Involvement](#)). The general public should not be omitted during scoping, although a different approach is usually needed with the general public than with those who are more intensely interested.

A good community impact assessment will help identify stakeholders and avoid overlooking inconspicuous groups. This assessment process is described in FHWA's guide titled *Community Impact Assessment: A Quick Reference for Transportation* (FHWA 1996).

To be sensitive to the environment surrounding the project, the PMT must carefully consider the context and physical location during all phases of development. This is true whether a house, road, bridge, or something as small as a waiting shelter for bus passengers is to be built. A data collection effort may be needed. Site visits and contacts with residents and other stakeholders in the area may also be involved in this effort.

Several important considerations during scoping are illustrated in Figure 6-4. Questions to ask during this phase include:

- What are the physical characteristics of the corridor? Is the setting urban, suburban, or rural?
- How is the corridor being used (other than for vehicular traffic)? Do bicycles and other non-motorized vehicles or pedestrians travel along the road? Are there destination spots along the traveled way that require safe access for pedestrians to cross?
- What is the vegetation along the corridor? Is it sparse or dense? Are there many trees or special plants?
- Are there important viewsheds from the road? On the other hand, are there reasons to obscure the proposed roadway?
- What is the size of the existing roadway, and how does it fit into its surroundings?
- Are there historic or especially sensitive environmental features (such as [wetlands](#) or endangered species habitats) along the roadway?
- How does the road compare with other roads in the area?
- Are there particular features or characteristics of the area (such as a rural character, neighborhood atmosphere, or main street) that the community wants to preserve or change?
- Is there more than one community or social group in the area? Are different groups interested in different features or characteristics? Are the groups affected differently by possible solutions?
- Are there concentrations of children, the elderly, or disabled individuals with special design and access needs (such as pedestrian crosswalks, curb cuts, audible traffic signals, or median refuge areas)?

Project scoping and data collection should identify the context and character of the project area as the basis to develop CSS.

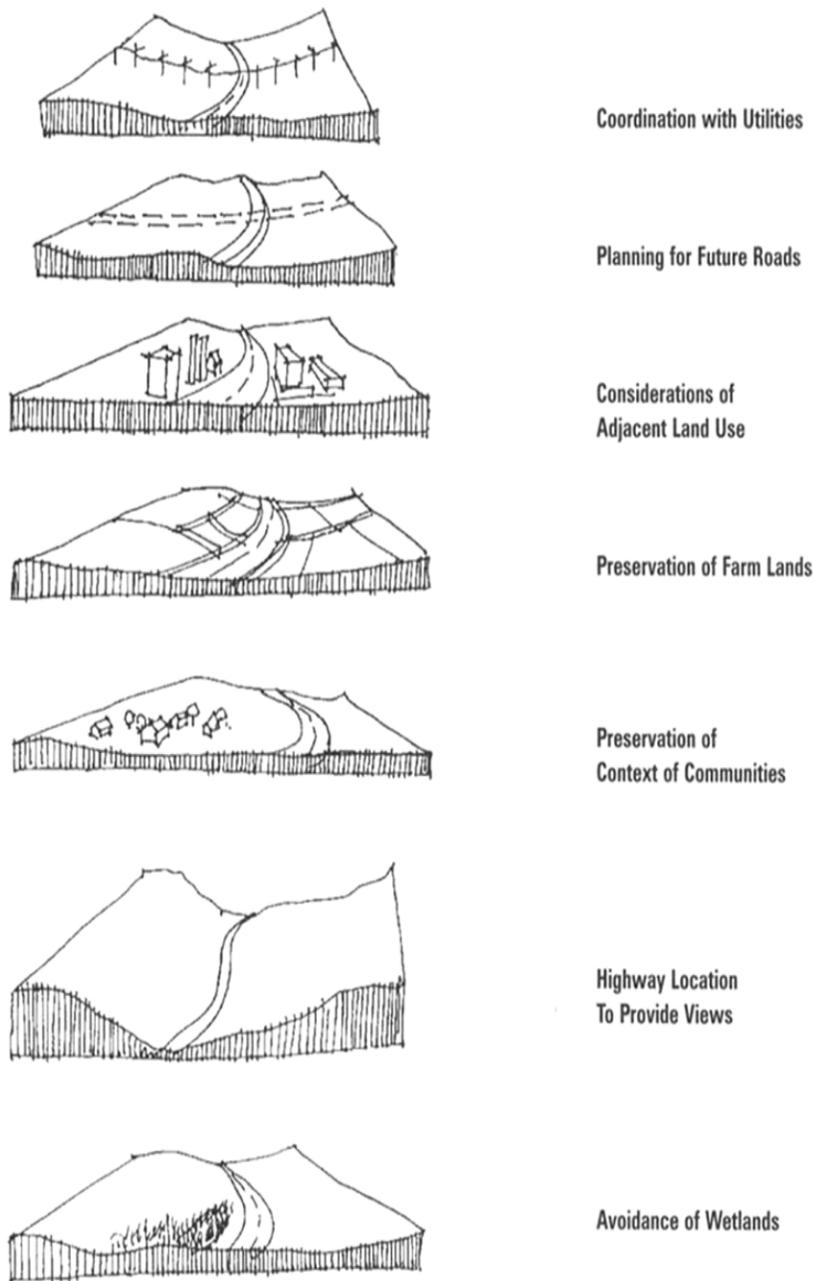


Figure 6-4. Scoping Issues

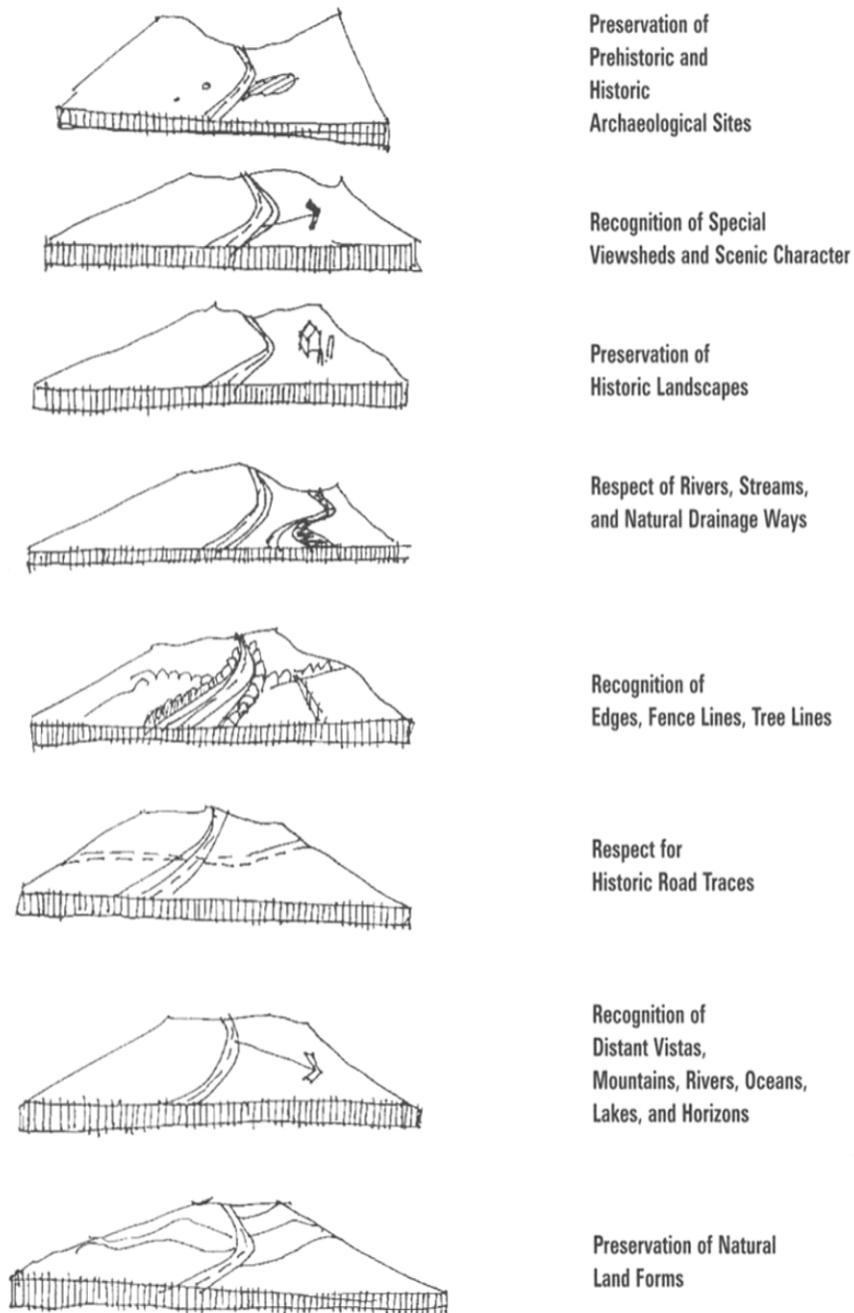


Figure 6-4. Scoping Issues (cont'd)

6.5 FLEXIBILITY IN DESIGN

After a [preferred alternative](#) has been identified, the environmental document is completed, and the Iowa Transportation Commission has approved it, a project moves into the final design and right of way acquisition phase. In this phase, imagination, ingenuity, and flexibility come into play within the general parameters established during planning and corridor development. Designers need to be aware of design-related commitments made during project planning and development, as well as proposed mitigation. They also need to recognize minor changes in the original project and design concepts developed during the planning phase that can result in a better final product.

6.5.1 Green Book

The reference most often used by designers during the design of a highway project is *A Policy on Geometric Design of Highways and Streets*, commonly referred to as the “[Green Book](#).” The Green Book has been published by AASHTO, in one form or another, since the late 1930s. FHWA has adopted applicable parts of the Green Book as the national standard for roads in the NHS, which comprises all interstates and some other primary routes. The design of roads other than those in the NHS is subject to the standards of the particular state, which are usually based on Green Book criteria.

Designers need to be aware of design-related commitments made during project planning and development, as well as proposed mitigation.

While the Green Book is often viewed as dictating a set of national standards, it is not a design manual. The Green Book is actually a series of guidelines on geometric design within which the designer has a range of flexibility. The foreword states:

The intent of this policy is to provide guidance to the designer by referencing a recommended range of values for critical dimensions. Sufficient flexibility is permitted to encourage independent designs tailored to particular situations. (AASHTO 2011)

The Green Book guidance on the geometric dimensions of a roadway includes the widths of travel lanes, medians, shoulders, and clear zones; width and shape of medians; turning radii; and other dimensions. Many aspects of design are included by reference, rather than directly, such as:

- Aesthetic treatment of surfaces
- Agreement on, and writing of, the project’s Purpose and Need statement
- Design within the appropriate context
- [Design criteria classification](#) (see [Section 6.5.4, Highway Classification](#)), appropriate functional requirements, capacity, and [level of service](#) (see [Section 6.5.6, Level of Service](#))
- Landscape development
- Light fixtures
- Roadside development
- Structure design
- Traffic operations

The new aspect in CSS is a broader view of the final product than is possible with Green Book design standards alone. CSS takes into account the natural and human environment through the expressed interests and involvement of affected stakeholders. Many of the same techniques employed to facilitate

public participation during the earlier corridor development phases need to be continued during the final design phase.

6.5.2 Detailing the Design

The PMT is responsible for ensuring that important design details are considered and are compatible with community and environmental values. Often, the details of the project are the most recognizable to the public. For example, a special type of tree used as part of the landscape plan, antique lighting, brick sidewalks, and ornamental traffic barriers are all highly visible roadway elements that leave an impression. Therefore, the treatment of such details is a critical element of good design, although aesthetics and environmental avoidance/mitigation are not the only CSS considerations.

Design involves the difficult process of merging previous design decisions with the appropriate design criteria in the Green Book and the Office of Design's Design Manual, working within the existing environmental and other important constraints, and using a designer's best judgment and experience to make decisions.

6.5.3 Design Exception Process

Despite the range of flexibility that exists with respect to virtually all the major road design features, there are situations in which the application of even the minimum criteria would result in unacceptably high costs or major impact on the adjacent environment. In such cases, when appropriate, the design exception process allows for the use of criteria lower than those specified as minimum acceptable values in the Office of Design's Design Manual. Additional information is provided in the Green Book.

For projects on NHS routes, FHWA requires justification and documentation of all exceptions from accepted guidelines and policies as well as formal approval for 13 specific controlling criteria. Projects using only State funds are encouraged, though not required, to follow this justification and documentation process. Examples of these controlling criteria are:

- Bridge width
- Cross slope
- Design speed
- Grade
- Horizontal alignment and horizontal clearance (not including clear zone)
- Lane width
- Shoulder width
- Stopping sight distance
- Structural capacity
- Super-elevation
- Vertical alignment and vertical clearance

There are situations in which the application of even the minimum criteria would result in unacceptably high costs or major impact on the adjacent environment. In such cases, the design exception process allows for the use of criteria lower than those specified as minimum acceptable values.

A few points to consider when evaluating design exceptions are:

- Effect on the safety and operation of the facility
- Compatibility with adjacent sections of the roadway

- Design criteria classification of the road, volume and character of the traffic, type of project, and accident history of the road
- Cost of attaining full standards and any resultant impact on scenic, historic, or other environmental features
- Degree to which a guideline is being reduced
- Effect on other guidelines
- Any additional features being introduced that would mitigate the design exception

6.5.4 Highway Classification

6.5.4.1 Relation to Highway Design

The Green Book explicitly recognizes the relationship between the **functional classification** of a highway and the design criteria. FHWA defines *functional classification* as “the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide” (FHWA 1997). There are three functional classifications for all streets and highways: arterial, collector, and local roads. The classification depends on the character of the traffic (local or long distance) and the degree of land access allowed.

State, county, and city highway design manuals likewise relate the functional classification to the design criteria. The Green Book states:

The first step in the design process is to define the function that the facility is to serve as well as the context of the project area. The level of service needed to fulfill this function for the anticipated volume and composition of traffic provides a rational and cost-effective basis for the selection of design speed and geometric criteria within the ranges of values available to the designer. The use of functional classification as a design type should appropriately integrate the highway planning and design process. (AASHTO 2011, 1-13)

The functional classifications listed in the Green Book are not used in Iowa. Instead, Iowa DOT has opted for the following design criteria classification system:

- **Freeway** – a multi-lane divided highway with full access control⁴
- **Expressway** – a multi-lane divided highway with at-grade intersections, often in combination with interchanges at high-volume intersections and primary routes
- **Urban** – a roadway with an urban cross section that controls surface drainage using curbs and an enclosed storm sewer system
- **Rural** – a two-lane undivided highway with at-grade intersections and enhanced geometrics to improve operational and safety features

The design criteria classification of a particular roadway defines the allowable range of design speed, which, in turn, defines the principal limiting design parameters associated with horizontal and vertical alignment. Similarly, the design criteria classification establishes the basic roadway cross section in terms of lane width, shoulder width, type and width of median area, and other major design features.

⁴ Access is allowed only at interchanges.

The design criteria classification process, as it relates to highway design, is important because the classification decisions are made well before an individual project is selected to move into the design phase. Moreover, such decisions are made on a systemwide basis by the city, county, Iowa DOT, or metropolitan planning organizations as part of their continuing long-range transportation planning functions. Such systematic reassessments are typically undertaken on a relatively infrequent basis. Thus, the classification of a particular section of highway may well represent a decision made 10 or more years ago. Even after the decision has been made to classify a highway section, there is still a degree of flexibility in the major controlling factor of design speed.

6.5.4.2 Periodic Re-evaluation

Traffic service patterns on a roadway and the roadway's function can change over time. If the classification system for a specific jurisdiction is not updated on a regular basis, roadways may be designed using inappropriate design standards.

The CSS method is to re-evaluate a locality's highway classifications on a relatively frequent and regular basis to ensure that the classification of any particular route accurately reflects the current and foreseeable traffic function. This continuing reassessment process can be viewed as an application of design flexibility even before the decision is made to begin designing a particular project. The decision to change the classification should be made based on a careful review of changed conditions and sound reasoning.

6.5.4.3 Limitations

One of the difficulties surrounding the relationship between highway classification and design guidelines is that the classification process is not an exact science. The predominant traffic service associated with a particular route cannot be definitely determined without exhaustive origin-destination surveys of traffic patterns on each link of the road network. Engineering judgment based on experience, together with stakeholder input, must play a role in making design decisions.

Design criteria classification guidelines established in the Office of Design's Design Manual have overlapping ranges of values. This allows the designer greater flexibility in choosing the most appropriate road design within the determined classification. This flexibility allows designers options to create CSS that is appropriate for that roadway without creating a design exception.

6.5.4.4 Impact of Land Use Changes

Land use is an important determinant of the function of an area's roads. As land use changes because of development, especially at the urban fringe, road functions also change. It is not uncommon for roads that once served as rural local access routes to farmland to become routes serving suburban residential subdivisions and commercial land uses. These roads should then be reclassified as [reduced-speed urban facilities](#)⁵ or [transitional facilities](#),⁶ depending on the intensity of development and the type of traffic generated by the development. Design standards or guidelines must also change to meet actual or impending change in traffic character and road function.

Furthermore, a local jurisdiction's actions to control or direct the form and location of growth or to preserve the current physical and scenic characteristics of a highway corridor should reflect the need to re-examine existing classifications and perhaps even jurisdictional responsibilities.

⁵ A reduced-speed urban facility is a roadway with an urban cross section and reduced speed.

⁶ A transitional facility is a roadway that transitions between a high-speed rural driving environment and a reduced-speed urban environment.

6.5.5 Role of Design Speed

6.5.5.1 Design Speed Designation

Design speed warrants further discussion because CSS emphasizes flexibility, fitting the highway into the environment, and minimizing accumulated conservatism. The design speed is used to determine individual design elements, such as stopping sight distance and horizontal curvature. Therefore, designation of the design speed is pivotal to all the various design elements affected by it and should be justified on that basis.

The selected design speed affects all geometric design elements of the highway in some way. Some roadway design elements are directly related to, and appreciably vary with, design speed. These include horizontal curvature, super-elevation, sight distance, and gradient. Other elements are less related to design speed, such as pavement and shoulder width and clearances to walls and traffic barriers. The design of these features can, however, significantly affect vehicle operating speeds. As a result, more stringent criteria for these features are generally recommended for highways with higher design speeds. Conversely, less stringent criteria for these features may be more appropriate for roadways with lower design speeds.

The designation of a design speed is influenced by:

- Design criteria classification of the highway
- Character of the terrain
- Density and character of adjacent land uses
- Anticipated traffic volumes
- Economic and environmental considerations

The selected design speed affects all geometric design elements of the highway in some way.

The Green Book and Iowa DOT design standard values are minimum acceptable design speeds for the various terrain conditions and traffic volumes associated with new or reconstructed highway facilities. For CSS, designers have to balance the advantages of a higher design speed against the flexibility lost in design. It may be more important to retain the maximum possible flexibility so that a context-sensitive roadway more in tune with the needs of a community is designed using a lower design speed.

For example, for any particular highway other than a freeway or expressway, the design speed would typically decrease as land use density increases. The design speed of an urban collector street passing through a residential neighborhood should be appreciably lower than that of a rural highway with the same functional design classification. This also recognizes the fact that bicyclists and pedestrians would be more likely to use a route located in an urban area.

Similarly, in areas with significant historic interest or visual quality, a lower design speed may be appropriate because of lower average operating speeds and the need to avoid affecting the historic or aesthetic resources.

The Green Book, in agreement with this philosophy, states:

Above-minimum design criteria for specific design elements should be used, where practical, particularly on high-speed facilities. On lower speed facilities, use of above-minimum design criteria may encourage travel at higher than the design speed.
(AASHTO 2011, 2-54 and 2-55)

There is a range of allowable design speeds that may be appropriate for each of the various functional design classifications for use in the design of new or reconstructed highway facilities. Situations may arise where even the use of the lowest typically acceptable value would result in unacceptably high

For CSS, designers have to balance the advantages of a higher design speed against the flexibility lost in design.

construction or right of way costs or impacts on adjacent properties. In such instances, design exceptions can be employed. For the most part, design exceptions are easy to identify and define. For example, the reconstruction of a two-lane rural arterial route through a relatively flat but environmentally sensitive area might need to employ a design speed of 50 miles per hour (mph) rather than the recommended design classification of 60 mph.

6.5.5.2 Application of Appropriate Design Speed

For some projects, affected community residents may perceive an imbalance between what they consider to be an appropriate scale of improvement and what the highway designers deem appropriate. Much of this conflict can be traced to the design speed for the specific project.

For example, an older two-lane rural road with a posted speed limit of 45 mph may be adequate to accommodate current and anticipated future traffic demands, except for a short section that contains several sharp curves and has a high incidence of accidents. If this facility were classified as a minor arterial, the State’s design criteria might suggest a minimum design speed in the range of 60 to 70 mph for reconstruction of the deficient roadway section. The reconstructed section would then have a significantly higher design speed (and, hence, a higher operating speed and magnitude of physical impact on its surroundings) than the immediately adjacent sections of highway, resulting in a potentially unsafe condition.

The CSS method would be to apply a lower uniform design speed over the entire length of the route. This would suggest a 50 mph design speed for the reconstruction project to preserve the design continuity and character of the route.

Note that the design speed must be higher than the posted speed and should also be above the operating speed on a facility, regardless of the posted speed.

6.5.6 Level of Service

Once an appropriate design speed has been selected, the other basic defining elements of the highway—the number of lanes and basic configuration of junctions with other highway facilities—can be determined. This is done by applying the acceptable peak-hour level of service (LOS), which is a grading system for the amount of congestion. LOS “A” represents the least amount of congestion, and “F” refers to the greatest amount.

The appropriate degree of congestion (that is, the LOS) to use in planning and designing highway improvements is determined by considering a variety of factors, including the desires of the motorists, adjacent land use type and development intensity, environmental factors, and aesthetic and historic values. These factors must be weighed against the financial resources available to satisfy motorists’ desires.

Level of service is another critical factor in CSS as it determines the number of lanes and configurations of junctions.

While the *Highway Capacity Manual* provides the analytical basis for design calculations and decisions, judgment must be exercised in selecting the appropriate LOS for the facility under study (Transportation Research Board 2010). Then all elements of the roadway should be designed consistently to the selected LOS.

For example, along recreational routes subject to traffic demands that vary widely with the time of year, or in response to environmental or land use considerations, the designer may find it appropriate to select a LOS lower than what is usually recommended. The selection of the desired LOS for a facility must be weighed carefully because the facility's overall adequacy depends on this decision.

6.5.7 Horizontal and Vertical Alignments

6.5.7.1 Holistic Design

One definition of a visually attractive and unobtrusive highway is the degree to which the horizontal and vertical alignments of the route have been integrated into its surrounding natural and human environments. This takes careful planning and design, as noted in the Green Book:

Coordination of horizontal alignment and profile should not be left to chance but should begin with preliminary design, at which time adjustments can be readily made.... The designer should ... study long, continuous stretches of highway in both plan and profile and visualize the whole in three dimensions. (AASHTO 2011, 3-166)

The degree to which a road is integrated into its surroundings separates the outstanding project from one that merely satisfies basic engineering design criteria. The book *Aesthetics in Transportation* describes this holistic design process:

A general rule for designers is to achieve a “flowing” line, with a smooth and natural appearance in the land, and a sensuous, rhythmic continuity for the driver. This effect results from following the natural contours of the land, using graceful and gradual horizontal and vertical transitions, and relating the alignment to permanent features such as rivers or mountains. (Héder and Shoshkes, 1980)

The greatest opportunities for influencing the horizontal and vertical alignments of a highway occur during the planning and preliminary engineering phases associated with a new-location facility. The designs of such facilities have the most dramatic effects on the natural and human environments through which they pass.

Important points to consider regarding horizontal and vertical alignments are that they should be consistent with the topography, preserve developed properties along the road, and incorporate community values. Superior alignments are those that follow the natural contours of the land and have no detrimental impact on aesthetic, scenic, historic, and cultural resources along the way. When less earthwork is needed, construction costs can be reduced in many instances and resources preserved. It is not always possible to avoid impacts on both the natural and human environments. Therefore, superior alignments incorporate input from the community through a participatory design process.

When possible, the alignment should be designed to enhance attractive scenic views, such as rivers, rock formations, parks, historic sites, and outstanding buildings. The designation of certain highways as scenic byways recognizes the importance of preserving such features along our nation's roadways.

Equally as important as the facility's horizontal alignment is its vertical alignment. Factors that influence the vertical alignment of a highway include:

- Natural terrain
- Minimum stopping sight distance for the selected design speed
- Number of trucks and other heavy vehicles in the traffic stream
- Basic roadway cross section, such as two lanes versus multiple lanes
- Natural environmental factors, such as wetlands
- Historic, cultural, and community resources

Superior alignments are those that follow the natural contours of the land, incorporate input from the community, and have no detrimental impact on aesthetic, scenic, historic, and cultural resources along the way.

This country has numerous examples of excellence in integrating the horizontal and vertical alignments of highways into their surroundings. Unfortunately, there are also examples of new or widened highways that have scarred a rural landscape or disrupted an established community. While these past actions cannot easily or inexpensively be rectified, future problems can be avoided by applying CSS and the creative approaches outlined herein.

6.5.7.2 Cross Section Elements

Some of the most challenging aspects of highway design have to do with cross section elements, which include the number of lanes, width of travel lanes and shoulder areas, type of drainage, and desirability of including sidewalks or bicycle/pedestrian paths as part of the project. The cross section elements contribute to the theme of the roadway, and the design of these elements can add greatly to the appearance of the roadway. The right of way can be defined as the publicly owned parcel of land that encompasses all the various cross section elements, considered as a unit.

Some decisions about the cross section, such as the capacity and number of lanes, are made during project development. Other decisions, such as the functional design classification, are made earlier in the process. Within these parameters, the Green Book recommends a range of values for the dimensions to use for cross sectional elements. Deciding which elements to include and selecting the appropriate dimensions within these ranges is the role of the designer. In selecting the appropriate cross section elements and dimensions, designers need to consider factors such as:

- Volume and composition (percentage of trucks, buses, and recreational vehicles) of the vehicular traffic expected to use the facility
- Likelihood that bicyclists and pedestrians will use the route
- Climatic conditions (such as the need to provide storage space for plowed snow)
- Presence of natural or human-made obstructions adjacent to the roadway (such as rock cliffs, large trees, wetlands, buildings, and power lines)
- Type and intensity of development along the section of highway being designed
- Safety of the users

The most appropriate design for a highway improvement is the one that balances the mobility needs of the people using the facility (motorists, bicyclists, or pedestrians) with the physical constraints of the corridor within which the facility is located.

Some of the first elements that users of a facility notice are details such as the design and width of the median and traffic barriers, and the selection of plant material. Even if highway facilities are designed

The most appropriate design for a highway improvement is the one that balances the mobility needs of the people using the facility (motorists, bicyclists, or pedestrians) with the physical constraints of the corridor within which the facility is located.

with the greatest concern to fit them into their surrounding environments, they still can leave an unappealing impression without carefully thought-out design of cross section details. For example, designers may go to great length to preserve vegetation along the roadway because of its importance to the community and its scenic qualities. If they use concrete barriers as shields in front of this vegetation, however, that one element may be what catches the users' attention. Figure 6-3, above, illustrates the influence of cross section details on the perception of roadway width. The CSS method is to work with a multidisciplinary PMT from the beginning of the project development process through the last design detail to achieve a unified look.

6.5.8 Avoidance of Impacts

During the era of interstate construction, from the 1950s to the 1980s particularly, a number of instances of new highway construction had a devastating impact on communities and areas of environmental sensitivity. It is readily acknowledged that there will be some degree of physical impact on the surroundings associated with the construction of any new-location highway or major reconstruction or widening of an existing highway. From the perspective of horizontal and vertical alignment, however, much of this impact can and should be alleviated.

The CSS method is to minimize impacts on the surrounding human and natural environments by careful attention to detail during the route location and preliminary design phases and by a willingness of all concerned parties to work together toward a common goal. When the horizontal and vertical alignments are designed separately from one another, unnecessarily large cuts and fills may be required, resulting in very dramatic and often visually undesirable changes to the natural landscape.

One way to ensure the most effective coordination of horizontal and vertical alignment is to use a multidisciplinary PMT during the planning and engineering phases of a project. The combined expertise of landscape architects, urban designers, structural engineers, and historic preservationists, in addition to civil engineers and highway designers, can result in superior highway improvement projects.

6.5.9 Restricted Right of Way

Many existing roads were not built to today's standards. These roads may be located in restricted right of way corridors that have scenic or historic resources adjacent to the roadway. Efforts should be made to avoid impacts on these resources when considering highway improvements.

CSS offers four potential remedies:

- Reconsider the design criteria classification and design speed of a particular section of highway. These are key decisions in defining the basic design parameters for an improvement of the facility. Changing the functional design classification or lowering the design speed decreases the minimum width dimensions of the cross section elements.
- Maintain the road in its existing condition.
- Designate the road as a resurfacing, restoration, and rehabilitation (3R) project. Design criteria are generally lower for 3R projects than for reconstruction projects.
- Seek design exceptions.

Whichever alternative is chosen, the designer should try to maintain consistency in the roadway cross section. If only a small stretch of highway is located within restricted right of way, it would be unsafe to narrow that stretch while maintaining a much wider roadway before and after it.

6.5.10 Bridges and Other Major Structures

Bridges and other related major structures play an important role in how a highway affects the aesthetic, scenic, historic, and cultural resources of the corridor in which it is located. Some of the distinguishing features of a number of major cities are their bridges. For example, thoughts of San Francisco bring the Golden Gate Bridge to mind. Even smaller structures have a visual impact.

6.5.10.1 Guidelines for Geometrics of Bridge Design

The geometric criteria in the Green Book for new or replacement bridges deal primarily with the width of the bridge deck and its relationship to approach roadways. Early design coordination is important when establishing the width of a new or replacement bridge and determining its horizontal and vertical alignment. Input from highway engineers, architects, and landscape architects, as well as members of the community, can help the bridge designer determine the appropriate geometric dimensions and overall appearance of the bridge. The Green Book offers a range of options for cross section widths for bridges with a span of less than 100 ft, depending on the functional design classification and average daily traffic (ADT). The Green Book recommends the following:

The minimum clear width for new bridges on arterial streets should be the same as the curb-to-curb width of the street including any existing or proposed on-street bicycle lanes. In addition, on streets with sidewalks, the sidewalks should also continue across the bridge. (AASHTO 2011, 7-38)

For existing bridges that do not meet the criteria for travel-way width, the Green Book recognizes that:

...reasonable attempts should be made to improve those structures.... When making this decision, an important consideration is the extent to which such features that do not meet current policies and guidelines are likely to contribute to crash frequency and operational deficiencies for all users. Other factors to be considered include the remaining life, the cost of improvements and/or rehabilitation compared to replacement, the continuity of pedestrian and bicycle facilities, and the historical significance and aesthetic value of the structure. (AASHTO 2011, 7-38)

Because of this, AASHTO has criteria for minimum roadway widths and minimum structural capacities for bridges that are to remain in place. It is important to consider this option for each aesthetically and historically significant bridge on a case-by-case basis before deciding to demolish and replace it.

6.5.10.2 Design Elements

Designers must consider many design elements. Basically, bridges are viewed from two perspectives:

- Traveling over the bridge deck, the driver of a vehicle sees the travel-way, bridge railings, and view to either side.
- Crossing over another roadway, the driver can view water or land both on the side and underneath.

Bridge designers should keep in mind that these two perspectives may require consideration of additional aesthetic treatments for the bridge.

For the design of the bridge deck, the major components include the width of the roadway and shoulders, and pedestrian and other non-vehicular accommodations, as mentioned above. Other components include railings, lighting fixtures, and other design details. For the side of the bridge, the major components include the piers, the side fascia, abutments, and wing walls. In addition, the bridge railings and other fixtures selected for the top of the bridge play a design role for the side because they can be seen from below.

6.5.10.3 Compatible Design Scale

When rehabilitation of existing bridges is not feasible, a common concern of local residents is whether the proposed new structure will visually fit into the community. The CSS method for designing a visually attractive and context-sensitive new bridge is to be flexible and to work with the community from the beginning to obtain public input. Professionals from other disciplines, such as architects, can also assist, especially if engaged early in the design of the structure. It is important to consider how use of the geometric criteria will affect the overall scale of the bridge and how that scale will relate the bridge to its surroundings.

Chapter 7

Guide to Stakeholder Involvement

CHAPTER 7

GUIDE TO STAKEHOLDER INVOLVEMENT

This chapter is a reference guide for creating and implementing successful **stakeholder** involvement programs. It is the Iowa Department of Transportation's (Iowa DOT's) goal to build and sustain relationships with resource agencies, local governments, and other stakeholders¹ in its stakeholder involvement programs. Furthermore, Iowa DOT intends to promote meaningful stakeholder involvement while attempting to minimize controversies that delay **projects** and erode public trust.

This guide discusses the basics of stakeholder involvement and identifies who is responsible for Iowa DOT's stakeholder involvement programs. In addition, this guide includes techniques for enlisting stakeholder participation and explains how to develop, implement, and evaluate a **Public Involvement Plan (PIP)** for the public and other stakeholders. If there are any questions about Iowa DOT's public involvement policy or preparing a PIP, please contact the Office of Location & Environment (OLE) – Public Involvement section.

It is Iowa DOT's goal to build and sustain relationships with resource agencies, local governments, and other stakeholders in its stakeholder involvement programs.

7.1 THE BASICS OF STAKEHOLDER INVOLVEMENT

Stakeholder involvement provides a service to the community. Citizens of the U.S. have had input into the government process since the founding of this country. Government “of the people, by the people, and for the people” is a basic element of democracy and forms the underlying ideal of stakeholder involvement.

Iowa DOT's stakeholder involvement program is centered on developing a PIP for each project. The PIP defines the actions that Iowa DOT will take to work with the community affected by the project. The first stakeholder involvement occurs about the time the project **concept** is written, well before any Iowa DOT site activity occurs. The districts have the ability and responsibility to customize the stakeholder involvement process to fit the needs of the individual project, the public, and special interest groups.

Iowa DOT uses **Public Hearings (PHs)** and **Public Information Meetings (PIMs)**, along with other techniques, to reach out to the public and other stakeholders. A PH is conducted² when the project

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involves an **environmental** document (specifically an **Environmental Assessment [EA]** or **Environmental Impact Statement [EIS]**) and the environmental documentation process is nearing completion. A project may also require a public hearing for implementation of a **corridor preservation zone**. The PH culminates in the preparation of a transcript that is circulated to the public, local governments, and Iowa DOT staff. A transcript includes an overview of the hearing, a transcription of the formal portion of the hearing, handout materials used at the hearing, comments received from the public, and responses to those comments. For projects that do not involve an EA or EIS, typically a PIM is conducted rather

¹ Other stakeholders include local citizens, interest groups, and nongovernmental organizations.

² Projects typically involve a single public hearing; however, the PMT may decide a second hearing is warranted due to the time elapsed since the first hearing.

than a PH. The PIM culminates in the preparation of a meeting summary, which is similar to a transcript but is circulated to only Iowa DOT staff, not the public and local governments. Either a PH or a PIM may be used to comply with the public notification requirements related to use of eminent domain under Iowa Code Chapter 6B.

7.1.1 Legal Requirements

Iowa DOT's efforts to involve the public meet Iowa Code Chapter 6B as well as the federal government's and the State of Iowa's (State's) requirements for citizen participation.

The stakeholder involvement procedures in this guide apply not only to federally funded projects that require [National Environmental Policy Act \(NEPA\)](#) documents (including EAs and EISs) but also to non-federal-aid projects. While looking at compliance with these regulations, Iowa DOT must create an environment that takes stakeholder, including [resource agency](#), needs into account.

7.1.2 Goals and Objectives

As stated above, Iowa DOT's goal for stakeholder involvement is not merely to satisfy the letter of the law, but also to build and sustain relationships with citizens, business people, interest groups, legislators, and other government agencies. Iowa DOT is genuinely committed to addressing the concerns and needs of local interests.

Iowa DOT's primary stakeholder involvement responsibility is to inform the public and other stakeholders about how it proposes to maintain and improve the State's transportation infrastructure. Transportation improvements, especially the construction of large-scale facilities, influence the overall economic and social development of a community; therefore, the public should be involved. The goal of stakeholder involvement is also to provide an opportunity for local citizens to participate fully in making decisions that affect their individual lifestyles and shape their collective future.

The process of soliciting, listening to, and responding to what stakeholders have to say about a public agency's plan for action can be complicated, challenging, and often intimidating for all involved. When it is done well, however, the process becomes a rewarding and meaningful experience that leads to better decisions.

The public in general is expecting greater accountability from public officials. They are also demanding higher levels of efficiency and quality from the products and services provided by government agencies. In many instances, projects and programs are being scrutinized to ensure that they are worthy of the public's investment and are in the public's best interest. The public also understands that no issue is so compelling that it cannot be challenged.

At the same time, skepticism exists as to whether the public's involvement will result in any real influence on government programs or projects. Unfortunately, the history of gathering public input reinforces this perception. Holding a formal PH after the bulk of planning and [project development](#) decisions have been completed is clearly not sufficient for any agency committed to being responsive to the public's needs. Failure to seek meaningful public involvement can negatively affect trust and the final outcome of a project, plan, or study.

The process of soliciting, listening to, and responding to what stakeholders have to say about a public agency's plan for action can be complicated, challenging, and often intimidating for all involved. When it is done well, however, the process becomes a rewarding and meaningful experience that leads to better decisions.

Purposeful communication with a community is always productive. An organized stakeholder involvement program ensures that citizens' expectations are met and their concerns are addressed. It also provides citizens with a better understanding of how transportation problems can be solved through active dialogue.

An organized stakeholder involvement program ensures that citizens' expectations are met and their concerns are addressed.

Therefore, Iowa DOT must actively seek public input and explicitly consider this input in its decision making. Iowa DOT must develop PIPs with attention to the complexities of the project and the characteristics of the project area, and must tailor each PIP to the individual project. Doing so will foster improved two-way communication and mutual trust, leading to the [development](#) of better projects and services.

7.1.3 Commitment

Stakeholder involvement is successful only when everyone involved in planning and project development has made a commitment to it in terms of time, resources, and energy. The challenge may seem daunting, but it is one that public agencies cannot afford to ignore. Not only is stakeholder involvement required by law, but it also will help develop the best plans and projects possible. Ultimate success can be realized only by going out into communities and engaging in a dialogue with all stakeholders.

7.1.4 Reaching Out and Building Consensus

Openness is a fundamental ingredient of a successful stakeholder involvement program. It is gained by approaching the public as partners and stakeholders during the earliest stages of project development. Reaching out and making Iowa DOT's presence known early and often provides the community with access to the decision makers, allows Iowa DOT representatives to gain an understanding of the community's issues, and promotes openness in discussing the issues. This also creates a sense of shared responsibility during the project's development.

Therefore, stakeholder involvement programs should:

- Seek information and meaningful comments from the public and other stakeholders.
- Enable an open dialogue with interested citizens.
- Solicit the public's comments on alternatives.
- Provide the public with access to decision makers.
- Include public views and preferences in decision making, and document that consideration.
- Strive to reach a consensus within the community on a recommended course of action.
- Provide useful, timely information to the community throughout the [project development process](#).

Openness is a fundamental ingredient of a successful stakeholder involvement program. It is gained by approaching the public as partners and stakeholders during the earliest stages of project development.

Throughout the project development process, Iowa DOT strives to build consensus among the resource agencies as well as with the public and other stakeholders. Consensus is desired for issues such as project needs, alternatives, and [mitigation](#) measures.

A well-organized stakeholder involvement program can effectively guide public discussion toward resolution of key issues. The stakeholder involvement program should outline the techniques and practices that can focus public dialogue and local involvement in a productive and useful way.

Iowa DOT's stakeholder involvement efforts provide Iowa residents with an important role in shaping the decisions that will affect their communities. This cooperative approach to transportation planning involves Iowa DOT, resource agencies, local governments, and other stakeholders in a continuing dialogue about the community's goals for the future. Together, they can reach consensus about the specific transportation improvements needed to help the community achieve its goals.

Throughout the project development process, Iowa DOT strives to build consensus among the resource agencies as well as with the public and other stakeholders.

7.2 STAKEHOLDER INVOLVEMENT RESPONSIBILITIES

Various Iowa DOT offices as well as the Federal Highway Administration (FHWA) and consultants have certain responsibilities for the stakeholder involvement program, as discussed below. In addition, the same offices and FHWA serve on the [Project Management Team \(PMT\)](#), as discussed in [Chapter 1, Introduction](#), and [Chapter 5, Guidance for PMTs](#).

7.2.1 District Office

Coordination of the stakeholder involvement effort is assigned to the District Office in conjunction with the OLE – Public Involvement section and the PMT. These entities work together to prepare a PIP for a proposed project.

It is the responsibility of the District Office to secure a site for the PH or PIM as well as to provide the OLE – Public Involvement section with a list of invitees, including local officials, politicians, schools, emergency services, organizations, and other stakeholders that have expressed an interest in the project. If the roadway will be closed during construction, it is the responsibility of the district to provide detour information to the OLE – Public Involvement section for inclusion in the public notice.

For projects developed by the district or by a Local Public Agency (LPA), the District Office is also responsible for providing the public notice, sending invitation letters, and providing displays and [exhibits](#) for the PH or PIM.

When Iowa Code Chapter 6B compliance is required, a certified list containing all potentially affected owners of agricultural land whose property exceeds 10 acres must be obtained from the County Auditor's Office. This list should include the names and addresses of everyone who has an ownership in the property. It is the responsibility of the district to provide a certified list of property owners and tenants to the OLE – Public Involvement section.

The District Office also provides sufficient personnel to assist with the PH or PIM.

7.2.2 Office of Location & Environment

The OLE – Public Involvement section is responsible for setting the PH or PIM date. This effort requires coordination with the District Office, the Office of Design (Design), the Office of Right of Way (ROW), and the OLE – NEPA Compliance section. The OLE – Public Involvement section typically prepares the necessary paperwork (for example, newspaper advertisements, letters of invitation to local governments and property owners, a project statement for presentation at the PH or PIM, and a transcript or summary of the PH or PIM) for the proposed project.

For projects being developed by OLE, OLE is also responsible for providing the public notice, preparing invitation letters, and providing displays and exhibits for the PH or PIM. OLE also assists the district in responding to stakeholder comments regarding project development and environmental issues.

OLE provides sufficient personnel to assist with the PH or PIM as well as discusses preliminary design, the environmental document, cultural/historic issues, and mitigation concerns.

7.2.3 Office of Design

Design prepares exhibits for design PHs and PIMs, arranges for review of the display, attends the PH or PIM, and responds to stakeholder comments regarding design. It also provides copies of the replies to the OLE – Public Involvement section for the hearing transcript or meeting summary.

7.2.4 Office of Right of Way

The responsibilities of ROW include providing [right of way](#) design layout information and a parcel checklist (that is, a property owner list) to the OLE – Public Involvement section, attending the PH or PIM, responding to stakeholder comments regarding right of way questions, and providing copies of the replies to the OLE – Public Involvement section for the hearing transcript or meeting summary.

7.2.5 Office of Bridges & Structures

The Office of Bridges & Structures (OBS) attends the PH or PIM at the request of the District Office or the PMT.

7.2.6 Federal Highway Administration

The role of FHWA is one of oversight and guidance. Its attendance at a PH or PIM is not required, but FHWA Iowa Division staff should be notified and invited to attend PHs and PIMs.

7.2.7 Consultants

Design and environmental consultants attend the PH or PIM at the request of the District Office or PMT, and provide support services as requested. PH or PIM exhibits are prepared by the consultant when included in the scope of services and requested by Iowa DOT. At no time should a consultant conduct a PH or PIM. The consultant's role is support and technical assistance.

7.2.8 General

All staff attending the PH or PIM should record the names of the people with whom they talked; the issues, questions, and concerns expressed by the public or other stakeholders; and the replies provided by the staff. Iowa DOT and consultant staff attend a debriefing session immediately following a PH or PIM to review comments and meeting notes. These comments and notes are later combined into one document that becomes part of the hearing transcript or meeting summary.

7.3 TECHNIQUES FOR STAKEHOLDER INVOLVEMENT

A source of stakeholder involvement techniques for consideration when developing a PIP is the FHWA and Federal Transit Administration (FTA) publication [Public Involvement Techniques for Transportation Decision-Making](#) (FHWA and FTA 2002). A combination of techniques provides the most effective PIP. It should be noted that stakeholder involvement and a PIP are project-specific and that what worked successfully on one project may not work for another project.

7.3.1 Commonly Used Techniques

The following techniques have led to successful stakeholder involvement in Iowa:

- *Open forum public hearings and meetings* – to elicit comments from the public and other stakeholders, and to disseminate information. These events can be used to facilitate participation in the planning and development processes and can provide for stakeholder input at any stage of the process.

When selecting the site for the PH or PIM, the following criteria should be taken into consideration:

- Is the site close/convenient to the project location?
- Does the site meet Americans with Disabilities Act of 1990 (ADA) accessibility requirements?
- Is the room of adequate size?
- Are there sufficient tables/display areas and chairs?
- Is there adequate parking?
- Is there good air circulation/air conditioning?
- Is there a public address system?
- Is there a video system/projection equipment/screen?
- Are there sufficient electrical outlets?

It should be noted that stakeholder involvement and a PIP are project-specific and that what worked successfully on one project may not work for another project.

The meeting format traditionally used by Iowa DOT is an open forum that allows the public and other stakeholders to come and go as they wish and provides an informal atmosphere where uninhibited one-on-one discussion can occur. This has been favorably received by the public.

A PH, in addition to the open forum session, also includes a formal portion with a presentation and question and answer session that is recorded. Those persons wishing to speak during the formal portion would register to do so upon arrival at the PH.

PIMs often include displays and exhibits, and sometimes include formal presentations. In addition, depending on the demographics of the project area, materials may be available in multiple language translations.

- *Focus groups (neighborhood groups)* – to gauge in-depth opinions of community members through an informal, interactive, and conversational meeting. This method of stakeholder involvement through discussion is ideally suited to a small number of people who are allowed to elaborate as much as possible on selected project issues. This method of stakeholder involvement allows Iowa DOT a better and more comprehensive understanding of various problems and issues, along with a range of possible solutions.
- *Drop-in centers (on-site information centers)* – to provide program or project information to the stakeholder in accessible Iowa DOT offices. These convenient centers, which may be stationary, mobile, temporary, or permanent, are staffed with a knowledgeable representative who educates and informs as well as records questions and comments.
- *Briefings* – to provide program or project information to a specific group or part of the community. Briefings are information meetings with a community group or leader, such as elected officials, business leaders, the media, regional groups, or special interest groups. Briefings usually involve issue-focused communication between Iowa DOT administrators, PMs, board members, or other staff and a specific group or part of the community.

- *Media strategies* – to attempt to inform and educate the public by disseminating Iowa DOT, program, or project information through public notices, [news releases](#), [press kits](#), newspapers, radio, television, videos, [news conferences](#), media interviews, websites, email, mass mailings, information booklets, brochures, newsletters, fliers, and posters. Media strategies are particularly important when a program or project requires public focus, understanding, and consensus. The more these goals are met, the greater the opportunity for understanding and participation.
- *Transportation fair* – to provide maps, videos, models of projects, or other exhibits to present information to the public about Iowa DOT and various programs or projects as well as to elicit casual stakeholder input. Its chief objective is to improve public awareness and interest. A fair keeps attendees informed and up-to-date on various transportation-related matters.
- *Citizen surveys* – to assess widespread public opinion rather than to garner increased public participation. These surveys can be conducted formally or informally and may or may not be representative of the larger population. Through written questionnaires or telephone interviews, a randomly selected or targeted audience is asked carefully constructed questions regarding Iowa DOT, a program, or a project. Citizen surveys generally give broadly applicable results that enhance Iowa DOT comprehension of a problem or issue.

7.3.2 Other Techniques

Additional stakeholder involvement techniques include:

- *Brainstorming* – A diverse range of participants generate new and fresh ideas to various problems and issues. Participants generate as many possible solutions as they can, without initial comment or evaluation. These ideas can then be prioritized and evaluated in order to reach some type of group consensus. Brainstorming is valuable in that it often results in new and creative answers to both new and old problems.
- *Citizen advisory groups (CAGs)* – Representative groups of stakeholders are given periodic opportunities to discuss and comment on various project issues and concerns. Members should be diverse and given equal status once on the CAG. The CAG functions most effectively when the representatives seek input from and provide information to those they represent.
- *Telephone/cable/Internet techniques* – Several techniques can be used to elicit public participation. Examples are [telephone hotlines](#) or voice bulletin boards, telethons, interactive cable television information, email queries, electronic town meetings, and websites. These techniques are interactive and initiate a conversation or query. They have the potential to engage a wide array of citizens in Iowa DOT-related matters.
- *Video and multimedia techniques* – These are recorded messages that attempt to educate and inform the public on any range of issues. These may be videos or multimedia presentations, including PowerPoint slides and videos. The videos and multimedia presentations can be made available at local television stations, libraries, Iowa DOT locations, and video stores, or can be distributed by Iowa DOT directly to the citizen. This one-way communication can stimulate interest and target an audience that is attracted to the medium. It is useful in helping stakeholders understand the impacts of various programs or projects.

7.4 DEVELOPING A PUBLIC INVOLVEMENT PLAN

7.4.1 Definition and Purpose

A PIP is a set of project-specific actions designed to enable Iowa DOT to work effectively with the affected community. Developing an effective PIP is a strategic effort that requires assembling a selection of techniques to meet the needs of a given transportation project. The PIP needs to be developed very

early in the project development process to define the role of stakeholder involvement and establish measurements of achievement.

There is great flexibility available to transportation agencies in developing stakeholder involvement programs. Every situation is different, and each approach to a specific stakeholder involvement

Addressing the potential effects of a proposed improvement on the various groups composing the public has become an important part of the transportation decision-making process.

opportunity will be unique. Under District leadership, in coordination with the PM and the OLE – Public Involvement section, the PMT can customize the stakeholder involvement process to the needs of the individual project or of the public.

A major step in developing the PIP is to determine the project’s needs specific to stakeholder involvement, including potential social, economic, and environmental impacts. This information needs to be obtained from many different sources, including, but not limited to, all offices represented on the PMT, local public officials, local interest and development groups, and the various federal and State resource agencies.

7.4.2 Identifying “the Public”

Public concerns cannot be addressed realistically without understanding the characteristics and diversity of the community. “The public” consists of individuals with different life experiences, interests, educational levels, ethnicity, and professions. Individual citizens have varied—and often conflicting—needs, values, and attitudes. They associate with each other through a number of formal and informal networks. An effective stakeholder involvement program should attempt to recognize and be considerate of the expectations and agendas of the various segments of the public.

The project area should be assessed to identify the various groups that make up the public. This effort should include input from the local [metropolitan planning organization \(MPO\)](#), [regional planning affiliation \(RPA\)](#), or [transportation management area \(TMA\)](#), and others with local knowledge, as well as data-driven sources such as the U.S. Census. The results of the assessment help not only to ensure that all of the public is informed of the project but also to define the objectives of the PIP. Addressing the potential effects of a proposed improvement on the various groups composing the public has become an important part of the transportation decision-making process.

The public includes:

- *Stakeholders* – those who have a vested interest in the land that lies within the limits of the [corridor](#) being studied for the transportation improvement. It is essential to reach out to stakeholders early. Not only do they have a right to be involved in the decision making, but they often have extensive knowledge about the area as well, enabling them to provide valuable input. The PMT is key to identifying the stakeholders.
- *Special-interest groups* – those members of the public with common goals and interests, such as religious, economic, environmental, and community groups. Any group with an interest in a project should be informed and given the opportunity for involvement.

“The public” consists of individuals with different life experiences, interests, educational levels, ethnicity, and professions, and an effective stakeholder involvement program should attempt to recognize and be considerate of the expectations and agendas of the various segments of the public.

- *Minority and low-income populations* – those Environmental Justice (EJ) populations whose rights are protected by Executive Order 12898 (59 Federal Register [FR] 7629). Addressing the disproportionately high and adverse human health or environmental effects that a proposed improvement might have on these populations has become an important part of the transportation decision-making process.
- *Persons of Limited English Proficiency (LEP)* – those persons who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English and who are protected by Executive Order 13166 (65 FR 50121). The [Iowa DOT LEP plan](#) provides guidelines for divisions and offices to ensure that persons of LEP have meaningful language assistance. In addition, the OLE LEP plan is intended to identify and engage persons of LEP so that they can meaningfully access services that Iowa DOT provides to the citizens of Iowa, including the stakeholder involvement process. Following is the LEP process used by the OLE – Public Involvement section.

In accordance with the Iowa DOT LEP plan, if demographic data indicate that 5 percent or 1,000 persons or more in a project area speak a language other than English, then there is an LEP need. If this LEP need is not identified in the NEPA document, the following process should be used:

- Review project location and population data to determine potential impacts on the LEP population
- When warranted, contact the appropriate MPO/RPA/TMA requesting an opinion on the need to provide LEP services.
- Forward a copy of the MPO/RPA/TMA response to the district.
- If recommended by the MPO/RPA/TMA, make arrangements for translation and interpreter services as appropriate.
- Publish stakeholder involvement event notices in local ethnic newspapers, and provide notices to local broadcast media when available.
- When appropriate, provide translations of brochures, meeting invitations, and newsletters for stakeholder involvement events.
- When warranted, have translational services available at stakeholder involvement events.
- If written comments are received, use services of a translator and knowledgeable Iowa DOT staff in preparing a response.

If the LEP need was identified in the NEPA document, the necessary translation and interpreter activities should be completed.

- *Traveling public* – those who will be using the transportation improvement. This group should also be made aware of the proposed improvement and be given the opportunity to participate in and contribute to the decision-making process.

7.4.3 Determining the Stage of Project Development

A PIP should be developed and implemented very early in the project development process. If it is not, a major step in developing the PIP is to determine where the project is in the development process. This information can be obtained from the PMT, which is responsible for establishing a development schedule and managing the project to meet that schedule.

7.4.4 Defining the Objectives of the Public Involvement Plan

Objectives should be established as part of the initial phases of early stakeholder involvement activities. Cooperation from all affected groups and individuals not only helps to establish realistic goals and objectives, but it also helps to ensure that the public's concerns as well as planning and project development goals are addressed in the outreach activities.

7.4.5 Identifying Public Involvement Techniques

When preparing the PIP, it is important to consider:

- Whom are you trying to reach?
- What message or information do you want to convey or receive?
- How much will it cost?
- Which combination of techniques is most appropriate?
- How many techniques are appropriate?
- How easy (or difficult) will it be to implement the PIP?
- How does each activity relate to your objectives?
- Who is in charge of the message?

Characteristics of effective stakeholder involvement techniques include those that:

- Meet a particular need and objective.
- Are appropriate for the scale of the project.
- Reach target stakeholders in the relevant geographic area.
- Can be implemented within budgetary and time constraints.
- Are compatible with the community's operations, structure, politics, and style.

7.5 IMPLEMENTING AND EVALUATING A PUBLIC INVOLVEMENT PLAN

To conduct the stakeholder involvement process in compliance with federal and State regulations, Iowa DOT must:

- Invite public comment on the project's Purpose and Need at an early stage in the process.
- Share early project information with the various federal and State resource agencies and seek their input.
- Provide for the appropriate level of environmental documentation.
- Include cooperating agencies as well as other State and local agencies and Native American tribes as appropriate.
- Tailor the stakeholder involvement process to the individual project through a PIP.
- Address impacts associated with property owner relocation.
- Schedule stakeholder involvement opportunities for projects requiring right of way acquisition as provided for in [Chapter 2, Project Development Scheduling](#).
- Provide appropriate notice of PHs and PIMs.

- Provide certain information at the PH, including the project’s Purpose and Need, the project’s alternatives and major design features, impacts of the project, and a copy of the signed NEPA document.
- Prepare a transcript of the PH.

When evaluating the stakeholder involvement effort:

- Base the evaluation on the achievement of objectives and feedback from the public.
- Establish milestones during the stakeholder involvement process to use as points at which the status of the effort can be reviewed against the objectives.
- As issues and concerns change over time, make sure that the PIP reflects these changes. Always ask, “Is this still the case?”

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Chapter 8

Statewide Implementation Agreement and Concurrence Point Process

CHAPTER 8

STATEWIDE IMPLEMENTATION AGREEMENT AND CONCURRENCE POINT PROCESS

8.1 STATEWIDE IMPLEMENTATION AGREEMENT

8.1.1 2001 Statewide Implementation Agreement

A [Statewide Implementation Agreement \(SIA\)](#) was established in 2001 as part of a federal streamlining initiative to merge the [National Environmental Policy Act \(NEPA\)](#) and [Section 404 of the Clean Water Act \(Section 404\)](#) compliance processes. All highway [projects](#) in Iowa needing Federal Highway Administration (FHWA) action under NEPA and a Department of the Army [permit under Section 404](#) are eligible for processing under the SIA.

The SIA commits its signatories, including the Iowa Department of Transportation (Iowa DOT), to consider potential impacts on [waters of the U.S.](#), including [wetlands](#), as early as practical in the [project development process](#), to avoid impacts on such waters and wetlands, to minimize and mitigate unavoidable adverse impacts, and to ensure that the concerns of [regulatory](#) and [resource agencies](#) are considered in a timely manner and that those agencies are involved at key decision points in [project development](#).

The SIA provides for [concurrence points](#), which play a critical role in building consensus among the regulatory and resource agencies. Specifically, concurrence point meetings are a means of obtaining buy-in to advance the project from one [development](#) phase to the next. The concurrence point process is discussed in detail in [Section 8.2](#), and the SIA is provided in [Appendix B, Statewide Implementation Agreements](#).

8.1.2 2009 Programmatic Agreement

In May 2009, a complementary agreement to the SIA was executed to include a [mitigation](#) component with the concurrence point process. “All transportation projects in Iowa needing compensatory mitigation, conservation measures, or other types of mitigation under Section 404 of the Clean Water Act, Section 7 of the Endangered Species Act, or other statute or regulation dealing with natural resources are eligible for processing under this agreement.” “Compensatory mitigation is the restoration, creation, enhancement, or preservation of natural resources to offset unavoidable adverse impacts from transportation projects.”

This approach to mitigation has the following benefits:

- Meeting or exceeding state and federal compensatory mitigation requirements
- Providing Iowa DOT project managers and engineers with increased certainty and flexibility regarding transportation project delivery
- Ensuring that proper controls for development, monitoring, maintenance, long-term protection, and adaptive management are in place for mitigation sites
- Providing a streamlined approach that is easy to implement and enforce

The 2009 Programmatic Agreement is provided in [Appendix B](#).

8.1.3 2011 Modification of the Statewide Implementation Agreement

The 2001 SIA was modified in 2011 to include an option to review projects using a “Streamlined Concurrence Process” or a “Full Concurrence Process.” The streamlined and full concurrence processes are discussed further in [Section 8.2.1](#).

8.2 CONCURRENCE POINT PROCESS

A vital component of the 2001 SIA to merge the NEPA and Section 404 processes, discussed in [Section 8.1.1](#), is the concurrence point process (CPP), which is managed by the Office of Location & Environment (OLE). The purpose of the CPP is to gain [concurrence](#) from resource agencies with early project development decisions and to provide forums for interagency discussion of the SIA-identified concurrence points. The project development process relies heavily on early and continued involvement of and decisions by resource agencies. The following is a guide to using the CPP as a means of obtaining [environmental](#) concurrence from the SIA signatory agencies.

8.2.1 Concurrence Points

The 2001 SIA identified four concurrence points:

- Concurrence Point 1 (CP1) – [Purpose and Need](#)
- Concurrence Point 2 (CP2) – Alternatives to Be Analyzed
- Concurrence Point 3 (CP3) – Alternatives to Be Carried Forward
- Concurrence Point 4 (CP4) – [Preferred Alternative](#)

In 2009, a programmatic agreement (see [Appendix B](#)) among FHWA, Iowa DOT, and the SIA signatory agencies was executed to add a fifth concurrence point:

- Concurrence Point 5 (CP5) – Mitigation Concurrence

Generally, the CPP is applied to major transportation projects that could involve 1) an [Environmental Assessment](#) or [Environmental Impact Statement](#), or 2) an Individual Section 404 Permit.

In 2011, the SIA was modified to provide two forums for interagency discussion of the concurrence points (see [Appendix B](#)):

1. The *full concurrence process* involves face-to-face meetings or agency participation via webinar, teleconference, or videoconference. Project information packets would be sent to the SIA signatory agencies at least 30 days in advance of the scheduled meeting. Verbal concurrence would be provided in the meetings and documented in the meeting minutes.
2. The *streamlined concurrence process* allows agencies to review the project information packets and provide feedback and concurrence via informal systems such as email.

The OLE Environmental Concurrence Coordinator (ECC) is responsible for determining which concurrence process forum is to be used for each project and at each concurrence point. In general, the full concurrence process is intended to be used for larger projects that could have significant environmental impacts or projects with issues that would be better addressed in a meeting, and the streamlined concurrence process is intended for smaller projects that are subject to the CPP but appear to have minimal environmental impacts.

At any point in the CPP, the discussion forum can change to the full concurrence process or the streamlined concurrence process. This change occurs upon the request of one or more of the SIA signatory agencies.

8.2.2 Scheduling

Typically, projects should begin the CPP at CP1. The first concurrence point typically occurs at about the same time as the [environmental scoping process](#) is conducted. See [Chapter 2, Project Development Scheduling](#), for additional information on the environmental scoping process event.

The schedule for concurrence points is tracked by project in the Project Scheduling System (PSS). The ECC is responsible for tracking all concurrence points in PSS and for making timely contact with the SIA signatory agencies. The SIA signatory agencies will not be contacted regarding the CPP more frequently than once every 30 days. For projects using the full concurrence process, at least 4 weeks before the concurrence point date in PSS and on the first business day of the month, the ECC will contact the SIA signatory agencies via email to schedule a meeting. For projects using the streamlined concurrence process, the ECC will contact the SIA signatory agencies via email to initiate the CPP and deliver the project information packets.

8.2.3 Participating Members

Invitations to participate in the CPP should be sent to the appropriate federal, state, and local agencies as well as to affected Iowa DOT staff. At a minimum, the distribution list should contain the SIA signatory agencies: U.S. Army Corps of Engineers – Rock Island and/or Omaha District(s), U.S. Fish and Wildlife Service – Rock Island Field Office, U.S. Environmental Protection Agency – Region 7, Federal Highway Administration – Iowa Division, and the Iowa Department of Natural Resources. Projects involving state borders may require additional contacts.

The CPP applies to the signatory agencies on the agreement. Therefore, the general public is generally not involved during the CPP. However, local planning and interest groups may be invited to attend the concurrence point meetings on a case by case basis with the understanding that they have no official role in the proceedings.

8.2.4 Project Information Packets

Project information packets should be prepared for each concurrence point for both the full and streamlined concurrence processes. The project information packets provide the SIA signatory agencies with pertinent information about the project, including location, description, history, results of public involvement and [scoping](#), results of decision making, and results of engineering and environmental studies. The information contained in the project information packets gives the SIA signatory agencies the opportunity to review the project so that the representative from each agency is prepared to adequately present that agency's position.

OLE has developed standardized project information packet templates for each concurrence point. The OLE Project Advisory Team (PAT) is responsible for populating the project information packets with assistance from members of the [Project Management Team \(PMT\)](#). The OLE – Geographic Information Systems (GIS) section is responsible for preparing standard display material including, but not limited to, location maps, alternative aerial displays, study area constraint maps, environmental constraint maps, and resource impact tables.

8.2.5 Documentation of Concurrence

If the full concurrence process is used, the minutes of each meeting, as revised based on review by the SIA signatory agencies, will serve as documentation of concurrence. The minutes should include the agenda, participant list, and any absent SIA signatory agencies. Minutes should make special note of individual agencies' acknowledgement of concurrence, conflict resolution efforts and outcomes, and any follow-up needed. Draft minutes should be circulated to the participants, especially all SIA signatory agencies, for timely review and approval. The project information packets, presentation materials, and final minutes should be provided to all participants (including absent SIA signatory agencies), and a copy is to be placed in the project directory folder.

If the streamlined concurrence process is used, the SIA signatory agencies are requested to sign and return a concurrence form that is prepared for each concurrence point and contained in the project information packets. The ECC is responsible for collecting returned forms and distributing them to the affected Iowa DOT staff. The project information packets and signed forms should then be placed in the project directory folder.

Chapter 9

Glossary

CHAPTER 9

GLOSSARY

A	
access	A means of ingress or egress between a primary highway and abutting property or an intersecting local public road or street.
access control	Limiting the number of access points to the roadway. Higher levels of access control would allow traffic to move more freely.
area of potential effect (APE)	With respect to the Section 106 process, the area directly or indirectly impacted by a project. The APE is typically smaller than the survey area but could exceed the right of way limits.
B	
basic lanes	<i>See</i> basic number of lanes.
basic number of lanes	The minimum number of lanes that a highway must have to serve the current and projected traffic as well as to provide the service associated with the route.
C	
Categorical Exclusion (CE)	The level of NEPA documentation required for an action that does not require an Environmental Assessment or Environmental Impact Statement because it would not (individually or cumulatively) significantly affect the human and natural environments.
citizen advisory group (CAG)	Representative groups of stakeholders who are given periodic opportunities to discuss and comment on various project-related issues and concerns. CAGs function most effectively when the representatives seek input from and provide information to those they represent.
clear	In the context of environmental investigations of the corridor, to survey in order to ensure that there are no encumbrances from an environmental standpoint.
clearance	A determination, by means of environmental surveys, that the corridor does not contain environmental encumbrances. <i>See also</i> clear.
concept	A recommendation as to the nature and extent of work required.
concurrence	Agency confirmation that information to date is adequate to agree that the project can be advanced to the next phase of project development. Concurrence does not imply that the project has been approved by an agency or that the agency has released its obligation to determine whether the fully developed project meets statutory review criteria.
concurrence point	A point within the NEPA/404 process where the transportation agency requests concurrence from resource agencies: <ul style="list-style-type: none"> • Concurrence Point 1 – Purpose and Need • Concurrence Point 2 – Alternatives to Be Analyzed • Concurrence Point 3 – Alternatives to Be Carried Forward • Concurrence Point 4 – Preferred Alternative • Concurrence Point 5 – Mitigation Concurrence
context	The natural, historic, human, and socioeconomic environments and the people who live, work, or pass through the area.
context-sensitive solutions (CSS)	A collaborative, interdisciplinary approach to project planning and development that fits the roadway into the environment rather than modifying the environment to fit the roadway. This approach uses the project context and public input to guide development of the project concept.

cooperating agencies	“Local public agencies with special expertise in the proposed action,” which cooperate in the preparation of an environmental document (23 CFR 771).
corridor	A strip of land between two termini within which traffic, topography, environment, and other characteristics are evaluated for transportation purposes.
corridor preservation zone (CPZ)	An area where future transportation improvements may occur that would require the acquisition of right of way. Designation of the CPZ allows Iowa DOT to review building permits, subdivision plats, and proposed zoning changes before they are approved by local officials.
cross section	The width of the roadway, including the clear zone, shoulder, parking lanes, travel lanes, and/or median.
D	
design criteria classification	The definition of the allowable range of design speeds and the basic cross section of a roadway. Iowa DOT uses the following classifications: freeway, expressway, urban, and rural.
development	All processes required to bring a project from concept through project planning and design to contract letting.
diagonal severance	The crossing of a parcel by the right of way required for a transportation project in a manner that leaves unusable or inefficient parcels of land.
digital terrain model (DTM)	A three-dimensional ground model of the study area that is generated from aerial photography and developed by completing the field survey work necessary for establishing project photo control.
drop-in center	A center, which may be stationary, mobile, temporary, or permanent, that is staffed with a knowledgeable representative who provides program or project information to stakeholders. The representative educates and informs as well as records questions and comments.
E	
environmental	As used in this document, this term typically has the broadest possible regulatory interpretation.
Environmental Assessment (EA)	A written document prepared in accordance with NEPA and FHWA regulations that describes and evaluates the expected social, economic, and environmental impacts of alternatives proposed for a highway improvement project. The type of environmental documentation (EA or EIS) is determined by the Iowa DOT Office of Location & Environment in coordination with FHWA Iowa Division.
Environmental Impact Statement (EIS)	A comprehensive, full-disclosure document prepared in accordance with NEPA and FHWA regulations. An EIS fully describes each proposed alternative, including anticipated direct, secondary, and cumulative impacts on the environment. An EIS is prepared when Iowa DOT and FHWA have determined, either at the onset of planning or upon preparation and review of an EA, that the project is likely to result in significant adverse impacts on the environment or is likely to be highly controversial. Preparation of an EIS includes gathering data, writing the document, and circulating the Draft EIS to federal, State, and local reviewing agencies and the public. <i>See also</i> Final Environmental Impact Statement .
environmental scoping meeting	A meeting with external regulatory and resource agencies and local jurisdictional representatives and other interested persons to develop mutual understanding about a proposed project and reach early consensus as to the level of environmental documentation required for external approvals. <i>See also</i> scoping .
environmental scoping process	<i>See</i> scoping .

exhibit	A visual, such as a diagram, photograph, or computer display, accompanied by a brief description or introduction. Exhibits can be a useful means of explaining technical and complex projects.
expressway	A multi-lane divided highway with at-grade intersections, often in combination with interchanges at high-volume intersections and primary routes.
F	
fill material	Any material used for the primary purpose of replacing an aquatic area with dry land or changing the bottom elevation of a water body.
final bridge design	A detailed analysis of the design elements of each structure, including foundation design (pile or spread footing), footing design, pier design, design of the superstructure, and development of a complete set of plans that includes a tabulation of bid items and quantities as well as a cost estimate.
Final Environmental Impact Statement (EIS)	A document that serves as an action-forcing device to ensure that the policies and goals defined in NEPA are met. The Final EIS provides full and fair disclosure of significant environmental impacts and informs decision makers and the public of reasonable alternatives that can avoid or minimize adverse impacts and thereby enhance the quality of the human environment. The Final EIS is intended to assess the environmental impact of a proposed action, not to justify decisions already made.
Finding of No Significant Impact (FONSI)	A document, attached to the EA, briefly presenting the reasons why a proposed action would not have a significant effect on the human and natural environment.
focus group	A small discussion group where community members share in-depth opinions through an informal, interactive, and conversational meeting. Participants are allowed to elaborate as much as possible on selected project issues.
freeway	A multi-lane divided highway with full access control. Access is allowed only at interchanges.
functional classification	“[T]he process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide” (FHWA 1997). There are three highway functional classifications: arterial, collector, and local roads. All streets and highways are grouped into one of these classes, depending on the character of the traffic (local or long distance) and the degree of land access that they allow.
G	
Gantt chart	A view of a schedule that includes a list of tasks and graphically represents those tasks using bars representing the duration of each task.
geotechnical design	The soils design work that includes information on bridges, cross sections, subdrains, stability items (benches, berms, blankets, drains, etc.), and borrow design (soil profiles for borrows, borrow cross sections, etc.).
Green Book	<i>A Policy on Geometric Design of Highways and Streets</i> , published by AASHTO. FHWA has adopted applicable parts of the Green Book as the national standard for roads in the National Highway System. The Green Book contains guidance on geometric design.
H	
Highway Division Management Team (HDMT)	A management team consisting of the Highway Division Director, Project Delivery Bureau Director, Systems Operations Bureau Director, District Engineers, and their support staff.

historic property (or historic resource)	“Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource” (16 USC 470w(5)).
holistic design	Careful planning and design that integrates the horizontal and vertical alignments of a route into its surroundings, rather than merely satisfying basic engineering design criteria, to produce a visually attractive, unobtrusive highway.
L	
level of service (LOS)	Depending on the context, either of two definitions: <ul style="list-style-type: none"> • A qualitative rating of the effectiveness of a highway in serving traffic, measured in terms of operating conditions. Level of service (LOS) “A” (free-flow operations) represents the least amount of congestion, and “F” (forced or breakdown flow) refers to the greatest amount. • The quality and quantity of transportation service provided, including characteristics that are quantifiable (safety, travel time, frequency, travel cost, number of transfers) and those that are difficult to quantify (comfort, availability, convenience, modal image).
logical termini	The rational endpoints for a transportation improvement.
M	
memorandum of agreement (MOA)	A signed agreement reached by FHWA, the Iowa State Historic Preservation Office, and any consulting parties in order to resolve adverse project effects on significant historic properties or archaeological sites and to allow mitigation measures to proceed. The MOA may stipulate treatment in the form of protection or preservation measures, additional studies, data recovery, recordation or publications, or agreement that loss of the resource is an acceptable cost of the proposed project.
metropolitan planning organization (MPO)	The organization designated as being responsible, together with Iowa DOT, for conducting transportation planning activities in the urban areas with a population greater than 50,000. It is the forum for cooperative transportation decision making for the metropolitan planning area (40 CFR 51.392; 23 CFR 450.104).
mitigation	Avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (as defined in Council on Environmental Quality [CEQ] regulations at 40 CFR 1508.20).
mitigation of cultural resource impacts	Recording, documenting, moving, and often recovering significant parts of historic structures. These mitigation measures are required when a historically or architecturally significant structure is approved for removal for a highway project.
N	
National Environmental Policy Act (NEPA) process	The development of a full and fair discussion of the social, economic, and environmental issues associated with a proposed project and its reasonable alternatives (40 CFR 1500 et seq.). Its purpose is to ensure that the policies and goals defined in NEPA are infused into the ongoing programs and actions of the federal government.
National Highway System (NHS)	All interstates and some other primary routes.
news conference	An information session or briefing held for representatives of the news media or the general public to provide accurate information concerning important developments or processes. A news conference is used when time-sensitive information needs to reach the media and public and a news release may not be able to address key issues for the community.

news release	A statement sent to the news media (such as newspapers, television stations, or radio stations), generally to publicize progress or key milestones in the permitting process. When carried by the media, a news release can effectively and quickly disseminate information to large numbers of people. It can also be used to announce public meetings, report the results of public meetings or studies, and describe how citizen concerns were considered in the permit decision or corrective action.
notice of availability (NOA)	Information regarding the availability of the NEPA document (EA, Draft EIS, or Final EIS), published in a newspaper with circulation in the affected area and/or in the <i>Federal Register</i> . Information regarding availability of the NEPA document is included in the notice of a public hearing unless project specifics require that the NOA be published separately. Note that, for a FONSI, an NOA is required for notification purposes, but formal publication is not required. The Office of Location & Environment (NEPA Section or Public Involvement Section) can provide assistance. Federal requirements are provided in 23 CFR 771.119, .121, .123, and .125.
O	
on-site information center	A center, which may be stationary, mobile, temporary, or permanent, that is staffed with a knowledgeable representative who provides program or project information to stakeholders. The representative educates and informs as well as records questions and comments.
P	
Phase I archaeological survey	Information gathering to identify archaeological sites within the new or revised project, undertaking, or action area(s) (area of potential effect [APE]), the results of which are submitted to the State Historic Preservation Office (SHPO) and any applicable Tribes for comments. Survey techniques include a search of records or other literature, local area interviews, a preliminary walk-over survey of the ground surface, subsurface probing, and the gathering of geomorphological information about buried prehistoric sites potentially affected by a proposed project.
Phase IA archaeological survey	Generally extensive background research of known resources, with very limited, if any, field investigations, to characterize the project area.
Phase II archaeological evaluation	A targeted subsurface investigation of specific archaeological site(s) within the new or revised project, undertaking, or action area(s) (area of potential effect [APE]), the results of which are submitted to the State Historic Preservation Office (SHPO) and any applicable Tribes for comments. The purpose of the evaluation is to determine if the site(s) is eligible for listing on the National Register of Historic Places (NRHP).
Phase III archaeological mitigation	Data recovery for and documentation to prevent the destruction of data by highway construction. This work is completed for those sites that were determined eligible for the NRHP chiefly for their information potential.
potential borrow and alignment review	A review of corridors and plans for any grade or alignment changes necessitated by the Office of Design – Soils Design section’s considerations, and the identification of multiple potential borrow sites.
preferred alternative	The alternative that best meets the project purpose and need while considering the economic, social, environmental, and technical factors. If a preferred alternative exists at the time the Draft EIS is published, it should be so identified; otherwise, the preferred alternative must be identified in the Final EIS. Note that “preferred alternative” does not mean “selected alternative.”
press kit	A packet of relevant, key information for distribution to reporters. Typically, the kit is a folder with pockets for short summaries of the project, technical studies, newsletters, press releases, and other background materials.

primary road system	A road system that provides motor vehicles the means to travel to all regions of Iowa and, thereby, the Midwest and the United States. The primary road system is also referred to as the State highway system and is separate from the Interstate System.
Programmatic Categorical Exclusion (PCE)	The level of NEPA documentation required for actions that Iowa DOT and FHWA Iowa Division have agreed would have a minimal effect on the environment and can be processed with a minimal amount of review.
project	A portion of a highway that a state proposes to construct, reconstruct, or improve as described in the preliminary design report or applicable environmental document. A project may consist of several contracts or phases over several years.
project development	The major events for project implementation, such as preparation of the environmental document, design, right of way acquisition, and contract letting.
project development process	Iowa DOT's re-engineered and streamlined development process, formerly known as the Can-Do process, was adopted in February 1998, institutionalized in 2002, and revised in 2013. The project development process: <ul style="list-style-type: none"> • Is a streamlined co-development process that minimizes project development time through concurrent activities. • Is designed around a commitment to proactive and continuous public involvement. • Incorporates environmental commitments to avoidance of impacts in preference to mitigation, to early and continuous consultation with environmental resource agencies, and to early investigation and delineation of sensitive resources.
project letting	The process of preparing a project for bidding, conducting the bidding, and awarding the contracts. This involves reviewing the project plans; preparing cost estimates, bidding documents, and proposals; printing proposals and plans; distributing bidding documents to prospective bidders; requesting FHWA approval; advertising and conducting letting; analyzing bids; and awarding contracts.
Project Management Team (PMT)	A multidisciplinary team assembled to guide a project from early planning through letting and possibly into construction. The PMT consists of experts and decision makers in all relevant major planning and development disciplines, who are brought together early in the project planning phase. The PMT is responsible for initially setting and then maintaining the project schedule to proceed to letting on time and on budget. The PMT also identifies needed project resources and works with office directors to schedule those resources when needed.
public hearing (PH)	A public proceeding conducted for the purpose of acquiring information or evidence that will be considered in evaluating a proposed Department of the Army permit action, or federal project, and which affords the public an opportunity to present their views, opinions, and information on such permit actions or federal projects (33 CFR 327.3(a)).
public information meeting (PIM)	A meeting conducted to elicit comments from stakeholders and to disseminate information. This meeting can be used to facilitate participation in the planning and development processes and can provide for stakeholder input at any stage of the process. PIMs often include displays and exhibits, and sometimes include formal presentations.
public involvement plan (PIP)	A set of project-specific actions designed to enable Iowa DOT to work effectively with the affected community. The PIP needs to be developed very early in the project development process to define the role of stakeholder involvement and establish measurements of achievement.
Purpose and Need	The general project goals (the purpose) and the underlying issues that make the project necessary (the need).

Q

question and answer (Q&A) session	A means of direct communication between Iowa DOT and citizens. Representatives are made available after an event such as a presentation, briefing, exhibit, or meeting. Q&A sessions bring Iowa DOT staff and interested citizens together to answer questions one-on-one and address concerns about the project and the development process. The setting may be formal or informal.
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R

Record of Decision (ROD)	A concise document that records resource agency decisions made regarding the project, as published in the <i>Federal Register</i> . It identifies the environmentally preferred alternative, discusses the basis for decisions and planned mitigation measures, and presents responses to any comments received on the Final EIS. No further project development approvals may be given by FHWA until the ROD is approved. A ROD is required only for projects for which an EIS has been prepared.
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reduced-speed urban facility	A roadway with an urban cross section and reduced speed.
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regional planning affiliation (RPA)	The organization designated as being responsible, together with Iowa DOT, for conducting transportation planning activities for the non-metropolitan areas of the state and cover all 99 counties.
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regulated materials	As defined in part by Iowa Code 567-135.2(455B), an element, compound, mixture, solution, or substance that, when released into the environment, may present substantial danger to the public health or welfare or to the environment.
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regulatory agency	An agency that has jurisdiction by law.
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resource agency	An agency that has special expertise with respect to any environmental issue.
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right of way	A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.
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right of way relocation assistance plan	A plan for relocating residents and businesses that would be displaced by the proposed alignment alternatives. The plan is based on an assessment that includes an inventory of the homes, farms, and businesses within the right of way; available properties in the area that could serve as suitable replacement properties; and financial information on property values and mortgage rates in the local market.
--	--

rural (design criteria classification)	A two-lane undivided highway with at-grade intersections and enhanced geometrics to improve operational and safety features.
---	--

S

scoping	“An early and open process for determining the scope of issues to be addressed [in the environmental review process] and for identifying the significant issues related to a proposed action” (40 CFR 1501.7). Scoping considers a range and the extent of action(s), alternatives, and potential impacts as well as Section 404 permit issues to include in the environmental review.
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secondary road system	A road system that provides motor vehicles the means to travel to nearby cities and towns and to transport products to market. The secondary road system consists of former primary highways turned over to counties and local jurisdictions, county highways, and farm-to-market roads.
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Section 4(f)	<p>Section 4(f) of the U.S. Department of Transportation Act of 1966. Section 4(f) was originally set forth in 49 USC 1653(f) and applies only to agencies within the U.S. Department of Transportation. According to its provisions, the Secretary may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, State, or local significance only if there is no prudent and feasible alternative to using that land and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.</p> <p>The environmental regulations for applying Section 4(f) to transportation project development can be found at 23 CFR 771.135.</p>
Section 106	Section 106 of the National Historic Preservation Act of 1966, as amended, which requires federal agencies to take into account the effect of their undertakings on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.
Section 404 permit	A Department of the Army authorization, issued after a case-by-case evaluation of a specific project involving the proposed discharge(s) of dredged or fill material into waters of the U.S. in accordance with the procedures of 33 CFR 323 and 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.
Section 404 process	The permitting process under Section 404 of the Clean Water Act, which establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including wetlands.
staff action	An approval process for Iowa DOT allocation of funds for a consultant contract or certain types of agreements. Depending on work type, the approval of the Office Director, Division Director, General Counsel, Program Management, and External Audits is required. The Office of Operations and Finance is responsible for overseeing the process, but the process applies to all offices within Iowa DOT.
stakeholder	Any non-Iowa DOT entity having an interest in a project, including (but not limited to) resource agencies, local governments, community members, interest groups, and nongovernmental organizations.
State highway system	See primary road system.
Statewide Implementation Agreement (SIA)	An agreement among Iowa DOT and resource agencies that implements a concurrent National Environmental Policy Act (NEPA) and Clean Water Act Section 404 process for highway projects in Iowa. The SIA committed the signatory parties to consider potential impacts on waters of the U.S., including wetlands, throughout project development, and served to facilitate interagency cooperation and consultation throughout the integrated process.
Statewide Transportation Improvement Program (STIP)	A staged, multiyear, statewide, intermodal program of transportation projects that is consistent with the statewide transportation plan and planning processes, metropolitan plans, and Transportation Improvement Programs (TIPs) and processes (23 CFR 450.104).

support functions	Those groups or individuals who do not have direct membership on a PMT but whose work product or expertise is needed for the PMT to make informed decisions, or to provide necessary project clearances and/or construction permits. Examples are the Office of Design – Soils Design section; Office of Design – Photogrammetry and Preliminary Survey section; Office of Location & Environment – Public Involvement section; Office of Contracts; Office of Local Systems – Project Agreements section; Office of Maintenance; Office of Program Management; Office of Systems Planning – Traffic Modeling section; and District Field Services. Support functions generally are represented by a PMT member.
T	
telephone hotline	A toll-free or local telephone number to call to ask questions and obtain information about a project or process. Telephone hotlines provide interested persons with a relatively quick way of expressing their concerns directly and obtaining answers to their questions. Some hotlines also enable callers to order documents.
threatened/endangered species review	Review of the action area to determine the likely presence or absence of any federally or State-listed plant or animal species. Reviews may be conducted via office data or field work depending on the project details.
transitional facility	A roadway that transitions between a high-speed rural driving environment and a reduced-speed urban environment.
transportation facility	A highway, transit system, pedestrian sidewalk, bicycle path, and similar types of facility.
Transportation Improvement Program (TIP)	A staged, multiyear, intermodal program of transportation projects that is consistent with the metropolitan transportation plan (23 CFR 450.104).
transportation management area (TMA)	An area designated by the Secretary of Transportation as having an urbanized area population greater than 200,000.
Type I project (major change)	<p>A project with the following characteristics:</p> <ul style="list-style-type: none"> • <i>Location:</i> Is located on a new alignment or is relocated along a major portion of the highway section. • <i>Grades:</i> Uses completely new grade lines or retains very small segments of the existing grade lines. • <i>Lanes:</i> Uses two lanes, changes from two lanes to multi-lane either divided or undivided, or includes right of way acquisition for future multi-lane construction. • <i>Shoulders and foreslopes:</i> Is paved or granular, consistent with design guidelines for the proposed roadway template. • <i>Right of way:</i> Requires substantial right of way acquisition. • <i>Public access:</i> If a freeway or expressway system, public access is restricted to interchange locations or limited to at-grade connections; otherwise, public access would remain the same or involve only minor adjustments. • <i>Private access:</i> If a freeway or expressway system, private access may be restricted to use of frontage roads or points of public access; otherwise, private access could involve changes with the limitations on number and location in areas of right of way acquisition. • <i>NEPA classification:</i> Typically requires an EIS and ROD or requires a major EA and FONSI. <p>See Policies and Procedures Manual (PPM) 500.02 for additional information.</p>

Type II project (minor change)	<p>A project with the following characteristics:</p> <ul style="list-style-type: none"> • <i>Location</i>: Generally uses the existing location. • <i>Grades</i>: Generally uses the existing grade lines. • <i>Lanes</i>: Remains the same in number but could allow widening. • <i>Shoulders and foreslopes</i>: Is paved or granular, consistent with design guidelines for the proposed roadway template. • <i>Right of way</i>: Usually requires some additional right of way acquisition. • <i>Public access</i>: Remains the same or involves only minor adjustments. • <i>Private access</i>: Could involve changes with limitations on number and location in areas of right of way acquisition; would not normally involve frontage roads. • <i>NEPA classification</i>: Typically requires an EA and FONSI or requires a countersigned Categorical Exclusion (CE). <p>See Policies and Procedures Manual (PPM) 500.02 for additional information.</p>
Type III project (stewardship; that is, repair, replacement, or operations improvement)	<p>A project with the following characteristics:</p> <ul style="list-style-type: none"> • <i>Location</i>: No change. • <i>Grades</i>: No change requiring additional right of way acquisition except in isolated circumstances. • <i>Lanes</i>: No change; width may change and turning lanes may be added. • <i>Shoulders and foreslopes</i>: Use as constructed (UAC) except in isolated circumstances. • <i>Right of way</i>: No additional right of way acquisition required except in isolated locations. • <i>Public access</i>: No change. • <i>Private access</i>: No change. • <i>NEPA classification</i>: Typically requires a countersigned CE or Programmatically Excluded CE (PCE). <p>See Policies and Procedures Manual (PPM) 500.02 for additional information.</p>
type, size, and location (TS&L)	<p>An estimate of the major structural needs, such as bridges and large culverts, for the proposed alignment. The information includes a recommendation for widening, replacing, or using existing structures, as well as a cost estimate for the items identified.</p>
U	
urban (design criteria classification)	<p>A roadway with an urban cross section that controls surface drainage using curbs and an enclosed storm sewer system.</p>
V	
value engineering (VE)	<p>A systematic method of identifying, evaluating, and selecting an alternative by an objective, diverse team not associated with ownership of the project. The VE process takes into account both objective parameters (such as cost, time, or alternatives) and subjective parameters (such as safety or politics) associated with a project.</p>
value engineering (VE) study	<p>The systematic application of recognized techniques by a multidisciplinary team to identify the function of a product or service, establish a worth for that function, generate alternatives through creative thinking, and provide needed functions at the lowest life-cycle costs without sacrificing the safety, necessary quality, and environmental attributes of the project. VE applies to all federally aided highway projects in the National Highway System with an estimated cost of \$25 million or more. Iowa DOT has procedures to identify candidate projects for VE studies early in the project development process.</p>
visualization tools	<p>Illustrations that give stakeholders a certain degree of confidence that they understand what the designers intend a project to look like after it is built. Increasingly, computer-generated graphics are used for this purpose.</p>

W

waters of the U.S.	All waters, lakes, rivers, streams (including intermittent streams), wetlands, sloughs, and the territorial seas, unless excluded from regulation. For a complete definition and exclusions, see 33 CFR 328.3(a), 33 CFR 323.4, and 40 CFR 230.3(s).
wetlands	Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3(b) and 40 CFR 230.3(t)).

Chapter 10

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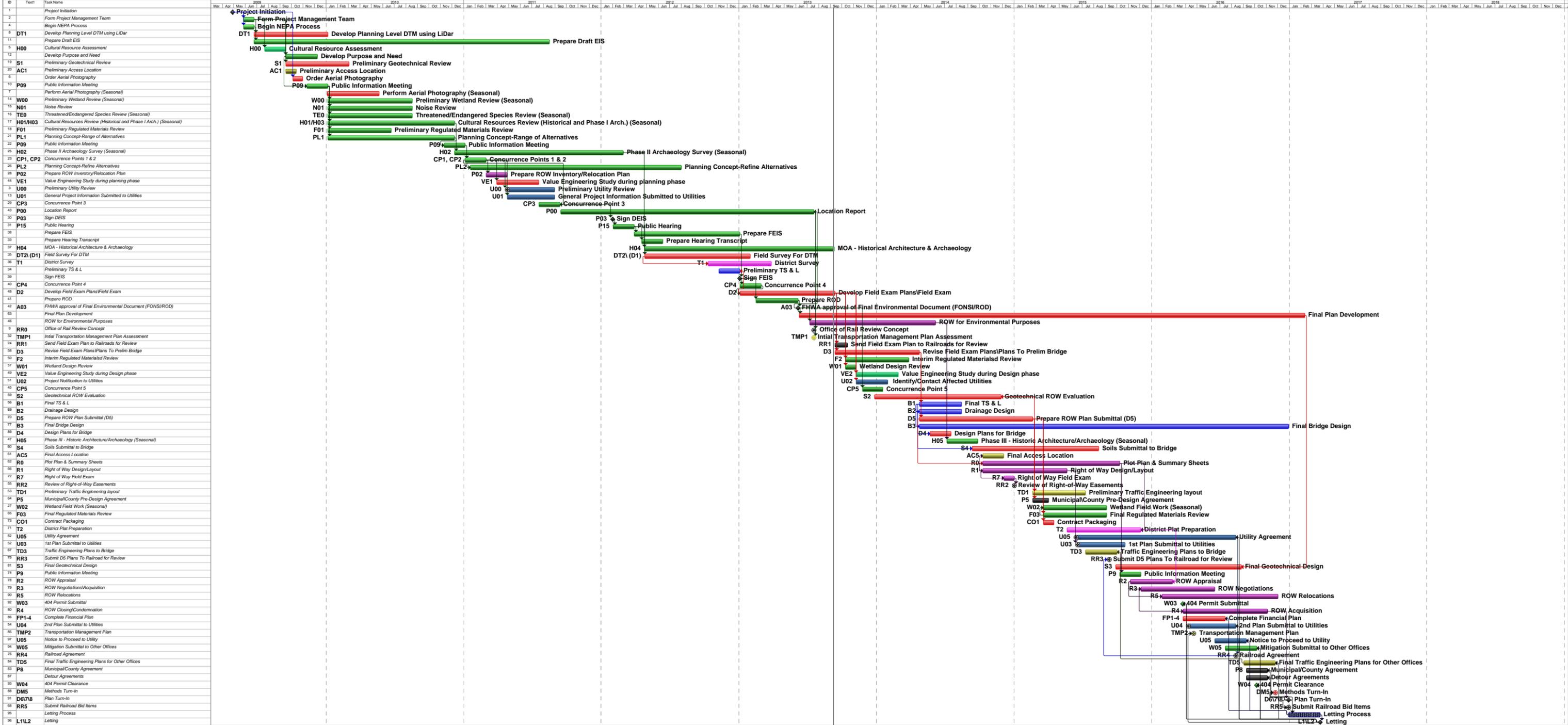
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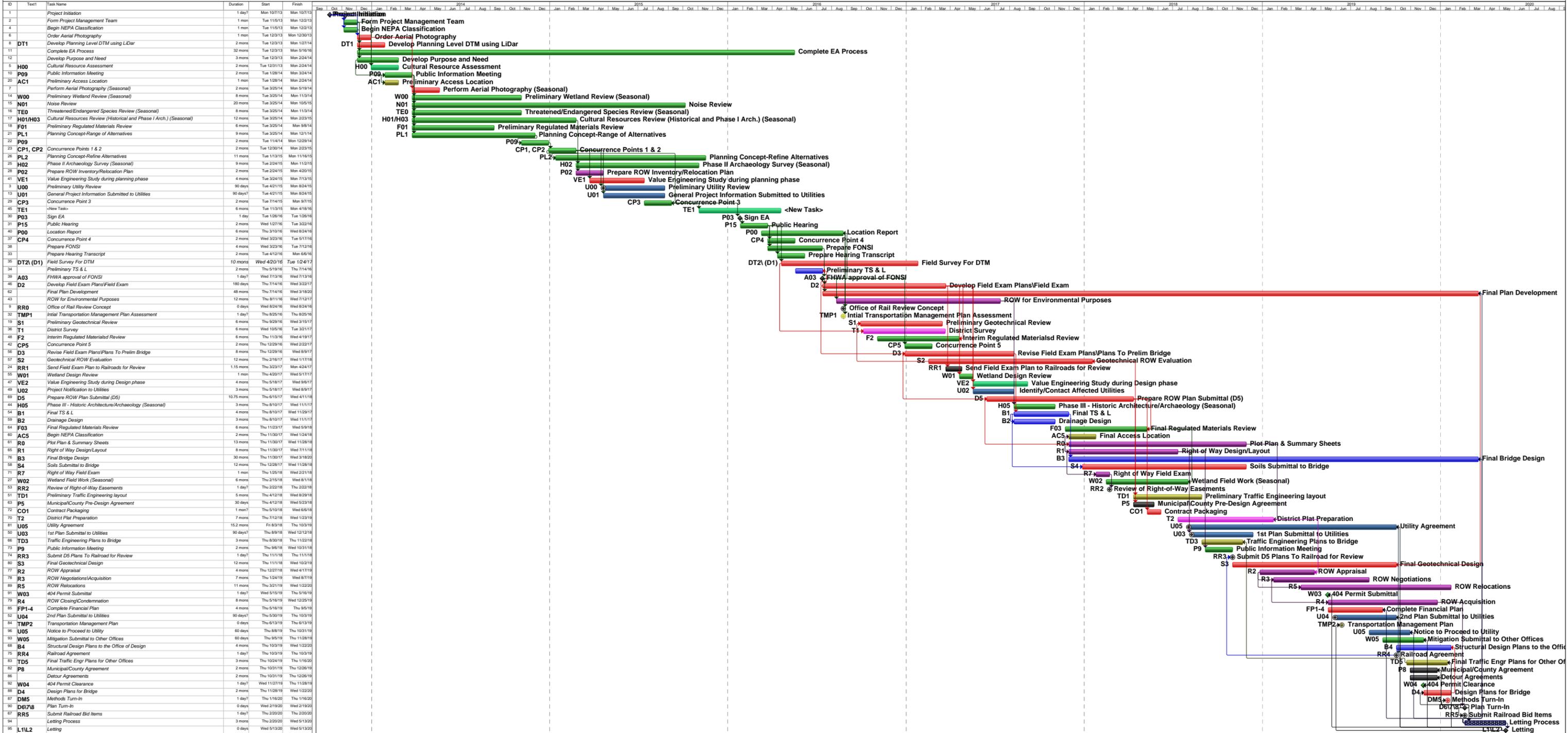
Appendix A

Project Development Gantt Charts

Gantt Chart of The Development Process based on an EIS July 2013



Gantt Chart for The Development Process based on an EA August 28 2013



Appendix B

Statewide Implementation Agreements

Attachment A

2011 Statewide Implementation Agreement Modification

ACKNOWLEDGMENT
STATEWIDE IMPLEMENTATION AGREEMENT
NATIONAL ENVIRONMENTAL POLICY ACT
AND
CLEAN WATER ACT SECTION 404
CONCURRENT NEPA/404 PROCESSES
FOR HIGHWAY PROJECTS IN IOWA

DATE: April 2011

PARTIES:

Iowa Department of Transportation
Iowa Department of Natural Resources
Federal Highway Administration, Iowa Division
U.S. Army Corps of Engineers, Rock Island District
U.S. Army Corps of Engineers, Omaha District
U.S. Environmental Protection Agency, Region 7
U.S. Fish and Wildlife Service, Rock Island Ecological Services Office

I. PURPOSE:

A Statewide Implementation Agreement (SIA) was signed in August 2001 for the purpose of implementing a concurrent National Environmental Policy Act and Clean Water Act Section 404 process for highway projects in Iowa. The SIA committed the signatory parties to consider potential impacts to waters of the United States, including wetlands, throughout project development, and served to facilitate interagency cooperation and consultation throughout the integrated process. The SIA also ensured that concerns of the regulatory and resource agencies would be given timely and appropriate consideration, and that those agencies would be involved at key decision points in project development. A complimentary agreement to the SIA was executed in May 2009 to include a mitigation component with the concurrence process.

The purpose of this document is to acknowledge concurrence among the parties regarding process updates to include a “Streamlined Concurrence Process” and a “Full Concurrence Process.”

II. ACKNOWLEDGMENT:

At a scheduled concurrence meeting on December 8, 2010, in Ames, Iowa, the parties concurred with the following process updates:

The applicability of the integrated process, as described in Section III of the SIA, does not change.

The General Procedures, as described in Section IV, are updated to provide agencies with an option to review projects by utilizing a “Streamlined Concurrence Process” or the “Full Concurrence Process.”

The Streamlined Concurrence Process allows agencies to review concurrence packets and provide feedback and written concurrence via informal systems such as e-mail. This process is intended for smaller projects that are subject to the Environmental Concurrence Process (Merged NEPA/404 process described by the SIA) but have minimal environmental impacts. Concurrence packets will be provided to the agencies via e-mail for a 30-day review period. The agencies will have the option of providing concurrence based on the information provided or they can request that the project utilize the Full Concurrence Process, in which case a meeting will be scheduled.

The Full Concurrence Process involves face-to-face meetings or participation via webinar, videoconference, or teleconference with all participating agencies. Concurrence would be provided at meetings and documented in the meeting minutes, per the original SIA. This process is intended for larger projects that could potentially have significant environmental impacts or projects with issues that would be better addressed in a more formal meeting. For projects pre-determined to utilize the Full Concurrence Process, a meeting will be set up no less than 30 days in advance of the meeting notice, and concurrence packets will be provided to the agencies for their review via e-mail at least 30 days prior to the scheduled meeting date.

The General Procedures are also updated regarding the frequency of concurrence meetings. Pre-scheduled meetings every six months or quarterly will not be required. Concurrence point reviews (either full or streamlined) will not be requested more frequently than once every 30 days.

All provisions of the original SIA continue to remain in effect for the life of the SIA, unless modified in writing at a later date by amendment or supplemental agreement.

STATEWIDE IMPLEMENTATION AGREEMENT

ACKNOWLEDGMENT

NATIONAL ENVIRONMENTAL POLICY ACT
AND
CLEAN WATER ACT SECTION 404
CONCURRENT NEPA/404 PROCESSES
FOR
HIGHWAY PROJECTS
IN IOWA

The Federal agencies and the Iowa Department of Natural Resources in cooperation with the Iowa Department of Transportation (Iowa DOT) acknowledge concurrence among the parties regarding process updates to include a "Streamlined Concurrence Process" and a "Full Concurrence Process", as agreed at the environmental concurrence meeting held December 8, 2010 in Ames, Iowa.

U.S. Army Corps of Engineers



Dan Johnson
Chief
Regulatory Branch, Rock Island District

4/26/2011
Date

Federal Highway Administration



Lubin Quinones
Division Administrator

31 Aug 2011
Date

U.S. Fish and Wildlife Service



Richard C. Nelson
Supervisor
Rock Island Ecological Services Office

8/25/11
Date

U.S. Environmental Protection Agency, Region 7



Karen Flourney
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3-2-2011
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Iowa Department of Natural Resources



Wayne Gieselman
Administrator
Environmental Services Division

3-1-11
Date

Iowa Department of Transportation



John Adam
Director
Highway Division

2/14/11
Date

Attachment B

**2009 Compensatory Mitigation Programmatic Agreement &
2001 Statewide Implementation Agreement**

PROGRAMMATIC AGREEMENT

A CONCURRENCE PROCESS FOR TRANSPORTATION PROJECTS
REQUIRING COMPENSATORY MITIGATION

By Agreement Among

IOWA DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

And

U. S. ARMY CORPS OF ENGINEERS,
U. S. FISH AND WILDLIFE SERVICE,
U. S. ENVIRONMENTAL PROTECTION AGENCY,
IOWA DEPARTMENT OF NATURAL RESOURCES

May 2009

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1. PREAMBLE

What is the Iowa DOT/FHWA compensatory mitigation process?

Compensatory mitigation is the restoration, creation, enhancement, or preservation of natural resources to offset unavoidable adverse impacts from transportation projects. Specific requirements and terms vary, but in general the Iowa Department of Transportation (Iowa DOT)/Federal Highway Administration (FHWA) provide compensatory mitigation for natural resources under the Clean Water Act (CWA), the Endangered Species Act, the National Environmental Policy Act (NEPA), Iowa Code 314.23, and DOT Policy 500.03.

The Iowa DOT/FHWA compensatory mitigation process was developed by Iowa DOT and FHWA, in close collaboration with the regulatory and resource agency Interagency Review Team (IRT), to provide appropriate mitigation for unavoidable impacts to natural resources in Iowa from transportation projects. This approach seeks to integrate multiple natural resource issues and regulatory requirements into a single framework to better facilitate permit compliance and resource management.

What are the goals?

There are three primary goals:

- to create a more flexible, ecologically responsive, and streamlined framework for addressing natural resources in a permitting context;
- to support Iowa DOT/FHWA's transportation mission, while also addressing (and complementing where possible) the missions of state and federal agencies charged with natural resources regulation and management; and
- to establish baseline standards through which mitigation may be planned, evaluated, and delivered.

What are the benefits?

The primary benefits of this program are:

- meeting or exceeding state and federal compensatory mitigation requirements;
- providing Iowa DOT project managers and engineers with increased certainty and flexibility regarding transportation project delivery;
- ensuring that proper controls for development, monitoring, maintenance, long-term protection, and adaptive management are in place for mitigation sites; and
- providing a streamlined approach that is easy to implement and enforce.

How does this differ from existing approaches?

The new program uses as its foundation a standard approach to mitigation based on impacts and types of permits. The new program builds upon the concurrence process

established in 2001 as part of the Concurrent NEPA/404 Process by establishing a concurrence process for compensatory mitigation.

This program also builds upon the compensatory mitigation rules at 33 CFR 332, which established national standards and criteria for the use of all types of compensatory mitigation. Program implementation will require project staff (Iowa DOT staff, resource and regulatory agency staff, and consultants) to become familiar with the specific approaches to mitigation described in this agreement.

2. BACKGROUND AND AUTHORITIES

Please see Appendix 1 for background on mitigation, the Concurrent NEPA/404 Process (*2001 Statewide Implementation Agreement for Concurrent NEPA/404 Processes for Highway Projects in Iowa*), and the authorities under which mitigation activities are conducted.

3. DEFINITIONS

Definitions follow those in 33 CFR 332.2 (Appendix 2), 23 CFR 777.2 (Appendix 2) and in the *2001 Statewide Implementation Agreement for Concurrent NEPA/404 Processes for Highway Projects in Iowa* (Appendix 1).

4. KEY UNDERSTANDINGS

Regulatory and resource agency participation in this process does not imply endorsement of a transportation plan or project. ***Nothing in this agreement is intended to diminish, modify, or otherwise affect the statutory or regulatory authorities of the agencies involved.***

The use of compensatory mitigation is only appropriate for unavoidable impacts. In most cases, applicants must demonstrate that avoidance and minimization measures for wetlands, streams, threatened/endangered species, or other regulated natural resources have been adopted in accordance with the Section 404(b)(1) guidelines, the Endangered Species Act, or other rules as appropriate.

Iowa DOT will develop compensatory mitigation based upon unavoidable project impacts to regulated natural resources, including wetlands, streams, other waters of the United States, threatened/endangered species and/or their habitats, woodlands, or other natural resources of concern. Mitigation concepts include general ideas of proposed activities at mitigation sites and are based on the technical criteria listed in Appendix 3. Because the mitigation project development process takes approximately two years, final mitigation plans will generally not be available at early stages of project development.

It is the policy of the FHWA and Iowa DOT that transportation decisions be made in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of the social, economic, and environmental impacts of the proposed project; and of federal, state, and local environmental protection goals (23 CFR 771.105). Similarly, the U.S. Army Corps of Engineers' regulatory program seeks to

balance favorable impacts against detrimental impacts through a public interest review (33 CFR 320.1). These policies and programs guide the compensatory mitigation decisions covered by this agreement and reflect concerns for both the protection and use of important natural and economic resources.

Federal law requires certain mitigation measures including (1) that mitigation measures incorporated into proposed actions address actual impacts and (2) that the proposed mitigation represents a reasonable public expenditure and assists in compliance with law (23 CFR 771.105).

According to federal law, the justification for the cost of mitigation must be considered in the same context as any other public expenditure; that is, the costs of proposed mitigation measures represent a reasonable public expenditure of public funds when weighed against other social, economic, and environmental values and when the benefit realized is commensurate with the proposed expenditure. Mitigation measures must also give like consideration to traffic needs, safety, durability, and economy of maintenance of the highway (23 CFR 777.5).

When acquiring lands or interests in lands to be used for compensatory mitigation, federal law requires assurances such as, but not limited to, deed restrictions, fee ownership, permanent easement, performance bond, or other appropriate legally recognized instrument (23 CFR 777.11). Iowa DOT may use agreements authorized under Iowa Code 28E with other government agencies to provide for long-term assurances, protection, and management of mitigation sites.

Iowa transportation planning is accomplished by Metropolitan Planning Organizations (MPO's), Regional Planning Affiliations (RPA's), and Iowa DOT. The planning processes include the development of transportation plans addressing at least a twenty-year planning horizon; include both long- and short-range strategies/actions; and provide for the development of transportation facilities which will function as an intermodal transportation system (SAFETEA-LU Section 6001). In the short-term, the MPO's develop a transportation improvement program (TIP) for the metropolitan planning areas, and the Iowa DOT develops a statewide transportation improvement program (STIP) for all areas of the state. The TIP's and the STIP will identify the mode of transportation to be funded, i.e., highways or transit, including bicycle and pedestrian needs. Section 6001 of SAFETEA-LU requires that long-range transportation plans include (1) a "discussion" of environmental mitigation activities and (2) a "comparison" of transportation plans with resource plans, maps, and inventories.

5. APPLICABILITY

All transportation projects in Iowa needing compensatory mitigation, conservation measures, or other types of mitigation under Section 404 of the Clean Water Act, Section 7 of the Endangered Species Act, or other statute or regulation dealing with natural resources are eligible for processing under this agreement. If the mitigation concurrence process is initiated and the project is determined to have only very limited impacts not requiring compensatory mitigation, the concurrence process may cease. If the signatory

agencies later determine that more significant project impacts are present requiring mitigation, the concurrence process may be reinitiated.

In general, the decision to develop a project using the mitigation concurrence process will be made jointly by the signatory agencies. Eligible projects will be developed according to the following criteria:

- The mitigation concurrence process is primarily intended to apply to projects needing compensatory mitigation and authorized via Department of the Army Individual Permits.
- Because Department of the Army Nationwide Permits authorize minimal impacts to the aquatic environment, compensatory mitigation for projects authorized under the Nationwide Permits will not generally be developed using this process. Instead, compensatory mitigation for projects authorized via Nationwide Permits will follow standardized mitigation approaches listed in Appendix 3. If it is determined, after consultation with the signatory agencies, that a project to be authorized via the Nationwide Permits warrants additional coordination and handling, the project may be developed using the process in this agreement.
- The mitigation concurrence process is also intended to apply to projects needing conservation measures or other compensatory mitigation for endangered species developed as part of consultation with U.S. Fish and Wildlife Service (USFWS) or Iowa Department of Natural Resources (Iowa DNR) under Section 7 of the Endangered Species Act or other federal or state statute or regulation dealing with endangered species and habitats.
- If, after consultation with the signatory agencies, it is determined that mitigation concurrence is necessary for a project regardless of anticipated 404 authorization, the concurrence process may be initiated.

6. IMPLEMENTING PROCEDURES

A. *Relationship to Concurrent NEPA/404 Process of 2001*

In 2001, the resource/regulatory agencies agreed upon four concurrence points for the Iowa DOT's project development process. At these points, the Iowa DOT presents current project development information to the resource agencies. The resource agencies review this information and provide concurrence that the Iowa DOT is properly considering and addressing potential natural resource impacts related to the project's development in balance with other social and economic impacts. This process has served to satisfy the requirements for sequential mitigation by primarily addressing avoidance and minimization efforts. This agreement adds another concurrence point called Mitigation Concurrence which deals specifically with compensatory mitigation.

The Concurrent NEPA/404 Process requires that:

- Potential impacts to wetlands and other waters of the United States in Iowa will be considered at the earliest practical time in project development.
- Adverse impacts to such wetlands and other waters of the United States will be avoided to the extent practicable, and unavoidable adverse impacts will be minimized and mitigated to the extent reasonable and practicable.
- Interagency cooperation and consultation will be diligently pursued throughout the integrated NEPA/404 process to ensure that the concerns of the regulatory and resource agencies are given timely and appropriate consideration and that those agencies are involved at key decision points in project development.

The Concurrent NEPA/404 Process provides for concurrence at each of the four following concurrence points:

1. Purpose and need;
2. Alternatives to be analyzed;
3. Alternatives to be carried forward; and
4. Preferred alternative

This process has been effective in adoption of avoidance and minimization measures with transportation projects. Because impacts of projects at early stages of development can be more difficult to quantify and to develop compensatory mitigation options for, adoption of compensatory mitigation measures at this stage has been challenging. As a result, 404 permits are not typically issued at the time of concurrence.

The mitigation program described in this agreement is based upon concurrence by the agencies that compensatory mitigation information is adequate to advance to the next stage of project development. After mitigation concurrence, the next stage of project development is anticipated to be an application for a Section 404 permit. This commits Iowa DOT to locating and planning compensatory mitigation earlier in the project development process and commits the resource/regulatory agencies to earlier review and permitting of transportation projects. This benefits the Iowa DOT by engaging the agencies and obtaining 404 permits earlier in project development and benefits the agencies by offering early input into compensatory mitigation decisions and allowing more time for permit processing.

With this agreement, a new mitigation concurrence process is established after conclusion of concurrence points 1-4 in the Concurrent NEPA/404 Process. This new concurrence process is referred to as “**Mitigation Concurrence**”. It should be emphasized that the mitigation concurrence process may be used any time mitigation discussions and decisions are necessary, not solely as a sequel to the Concurrent NEPA/404 Process.

B. Mitigation Concurrence/Concurrence Points

The following definitions for mitigation concurrence and concurrence points are adopted for the purposes of this agreement.

Mitigation Concurrence. Confirmation by the agencies that the compensatory mitigation information provided is adequate to advance the project to the next stage of development. Concurrence does not imply that the project has been approved by an agency or that it has released its obligation to determine whether the project meets statutory review criteria (i.e., review and public notice process prior to issuance of a 404 permit). If substantial new information is brought forward during project development, the adequacy of the prior concurrence statement may be reconsidered. The further refinement of the project, without a substantive change, will not normally be a reason to revisit the concurrence.

Concurrence Points. Points within the project development process when the transportation agency requests resource/regulatory agency concurrence.

The FHWA and the Iowa DOT will seek concurrence from the other signatories regarding the proposed compensatory mitigation. A primary intent of the concurrence point is to preclude the routine revisiting of decisions that have been agreed to earlier in the process and encourage early substantive participation by the agencies.

The timing of the first four concurrence points in the environmental process is reflected in the accompanying *2001 Statewide Implementation Agreement for Concurrent NEPA/404 Processes for Highway Projects in Iowa* (Appendix 1). The process has a degree of flexibility and range built into it, within which concurrence can be reached on each of the concurrence points. Similarly, the method of accomplishing the concurrence reviews for compensatory mitigation will be through joint meetings of the signatories and other agencies as appropriate (videoconferencing is generally available). The FHWA and Iowa DOT will schedule quarterly meetings, or as mutually agreed upon, at which projects ready for mitigation concurrence will be presented. Iowa DOT representatives from the Office of Location and Environment will develop the agendas and information packets for the meetings. The agenda will include the time and place of the meeting, descriptions of the projects to be discussed, appropriate background information to explain each project, and an indication of the concurrence sought for each project. Iowa DOT will provide the agenda to the signatories, and other agencies as appropriate, at least 30 days in advance of the meeting to allow the regulatory and resource agencies sufficient time for review and preparation of their comments.

These meetings will promote efficient use of time and personnel by bringing together all of the appropriate parties to focus on multiple projects and facilitate the exchange of information necessary to obtain concurrence at the designated decision points. For major or complex projects or projects on expedited schedules, separate meetings may be scheduled. The Iowa DOT will provide

agendas and notifications for such meetings as described above and will document concurrence in written mitigation plans.

C. Documentation of Concurrence

Once the agencies have concurred with the compensatory mitigation concept, **a written mitigation plan will be developed by Iowa DOT that documents agency concurrence, agency comments, and the technical criteria listed in Appendix 3.** The mitigation plan will also include the specific documentation required at 33 CFR 332.4(c) or as directed by Rock Island District of the U.S. Army Corps of Engineers. The written mitigation plan will be included in Section 404 Permit applications and is intended to satisfy the mitigation plan requirements described at 33 CFR 332.4(c). Iowa DOT will forward Section 404 Permit applications to the agencies shortly after Mitigation Concurrence has concluded, so that 404 permits may be issued based upon the information provided.

D. Resolving Disputes at Concurrence Points

It is anticipated that concurrence will be achieved in most cases; however, the probability of non-concurrence may increase for controversial projects. Therefore, a process is needed to resolve disputes when one or more signatory agencies do not concur.

Dispute resolution will consist of informal efforts to reach a general consensus among the signatory Federal and State agencies regarding the issues involved at the particular concurrence stage.

Attempts will be made to resolve issues at the lowest possible level within each agency. Within 30 days of a finding of non-concurrence, the FHWA and Iowa DOT will meet with the agency/agencies involved to determine the direction for resolution of the dispute. The direction for resolution will be agreed upon through consensus of the signatory agencies involved.

The project development process may continue whether or not attempts to reach concurrence are successful. However, if the dispute remains unresolved, any signatory agency in non-concurrence retains the option to elevate its concerns through existing, formal dispute elevation procedures at the appropriate point in the NEPA or Section 404 permit process, in accordance with Section 404(q) procedures. This will encourage all participating agencies to very carefully consider and accommodate the concerns raised by the resource agencies prior to finalization of the NEPA process and proposed issuance of the permit to avoid processing delays.

E. Data Collection and Analysis

The Iowa DOT will ensure that data collection activities provide the specific items of information the U.S. Army Corps of Engineers requires for determining compliance with the Section 404(b)(1) guidelines. Data collection will take place early in the coordination process so that information will be available for discussion at the concurrence point meetings. The resource and regulatory agencies will review the data and evaluations provided by Iowa DOT and provide supplemental information as appropriate.

The Iowa DOT will have preliminary quantitative and qualitative information on the resource impacts for the various alternatives and potential borrow/spoil sites. For proposed compensatory mitigation sites, the Iowa DOT will provide an overview of existing site conditions, existing wetlands or streams, as well as conceptual information on the proposed methods and design of mitigation. Engineering plans will not generally be available for mitigation concurrence. Wetlands will be delineated using the 1987 Wetland Delineation Manual and its Midwest Regional Supplement or the 1996 Food Security Act method for wetlands in agricultural areas. Physical characteristics of the Ordinary High Water Mark of streams and channels will be documented in the field, when present, using the Iowa DOT's Waters of the United States Determination Data Form, or as otherwise directed by the Rock Island District of the U.S. Army Corps of Engineers.

Planning level, field-gathered information will be available for other resources along the highway project and at the mitigation site, which include any other waters of the United States, woodlands, threatened and endangered species habitat, prime agricultural land, known Section 106 properties, regulated substances, and cultural resources. Based on this information, the Iowa DOT will seek concurrence for the proposed mitigation. Following this concurrence point, the Iowa DOT will prepare a Section 404 Permit application for submittal to the agencies.

7. MODIFICATION/TERMINATION

This agreement may be modified upon approval of all signatories. Modification may be proposed by one or more signatories. Proposals for modification will be circulated to all signatories for a 30-day period of review. Approval of such proposals will be indicated by written acceptance. A signatory may terminate participation in this agreement upon 30 days' written notice to all other signatories.

The technical criteria listed in Appendix 3 are intended to be updated as regulations change and agencies adapt to new rules. These criteria may be modified upon written notice from the agency with jurisdiction by law. Once notified in writing by the agency with jurisdiction, the Iowa DOT will notify all signatories of the necessary changes to the technical criteria in Appendix 3.

PROGRAMMATIC AGREEMENT

A CONCURRENCE PROCESS FOR TRANSPORTATION PROJECTS
REQUIRING COMPENSATORY MITIGATION

The Federal agencies and the Iowa Department of Natural Resources, in cooperation with the Iowa Department of Transportation, agree to implement, to the fullest extent practicable and as funding and staffing levels allow, the provisions outlined in this Programmatic Agreement.

This agreement becomes effective upon signature of all agencies and may be modified by written approval of each agency. This agreement may be revoked by agreement of all agencies or by any agency upon 30 days' written notice to the other agencies.

U. S. Army Corps of Engineers


Robert A. Siskler *LTC, E.U.*
Colonel *Deputy Commander*
U.S. Army District Engineer
Rock Island District

28 May 2009
Date

U. S. Fish and Wildlife Service


Richard C. Nelson
Supervisor
Rock Island Ecological Services Field Office

May 22, 2009
Date

U. S. Environmental Protection Agency, Region 7


William A. Spratlin
Director
Water, Wetlands and Pesticides Division

6/11/09
Date

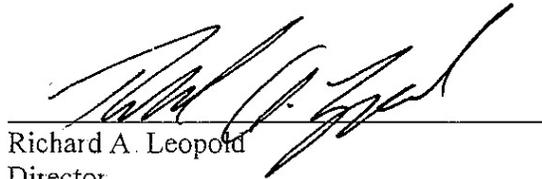
Federal Highway Administration



Lubin M. Quinones
Division Administrator
Iowa Division FHWA

2 June 09
Date

Iowa Department of Natural Resources



Richard A. Leopold
Director
Iowa Department of Natural Resources

5-28-09
Date

Iowa Department of Transportation



Nancy J. Richardson
Director
Iowa Department of Transportation

5.12.9
Date

APPENDIX 1 BACKGROUND AND AUTHORITIES

Mitigation Background:

The term “mitigation” means more than simply “compensation” in the federal regulations and is more specific than the dictionary definition of “to make less severe.” Rather, mitigation includes (from 40 CFR 1508.20):

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

This sequence of mitigation (avoid, minimize, compensate) is consistent throughout the federal regulatory program.

For example, Section 404 regulations require an analysis of alternatives, and mitigation actions must be considered in a specific step-wise sequence: avoidance, minimization, and lastly, compensation. Before the Corps will issue a Section 404 permit, the Iowa DOT must demonstrate that every effort was made to first avoid any impacts to wetlands, streams, and rivers. If impacts were unavoidable, Iowa DOT must show that impacts were minimized as much as possible. Finally, Iowa DOT must compensate for any unavoidable wetland impacts by restoring, creating, enhancing, or preserving wetlands/aquatic resources to replace the wetlands lost to road construction. Stream mitigation may also be required.

This process is called sequencing, and mitigation sequencing is performed in accordance with EPA’s Section 404(b)(1) Guidelines, the Compensatory Mitigation Rule at 33 CFR 332, and with the guidance of Iowa’s resource and regulatory agencies. It should be noted that the U.S. Army Corps of Engineers and the Iowa DNR have the final authority to approve or disallow mitigation plans offered by the Iowa DOT.

Avoidance and minimization actions are typically the most effective measures for mitigating impacts. If compensatory mitigation is required to offset wetland impacts, the Iowa DOT compensates through creation of new wetlands, restoration of historic wetlands, enhancement of existing wetlands, or preservation of existing wetlands. Iowa DOT also compensates for other natural resources impacts through creation, restoration, enhancement, or preservation. Restoration is always preferable to creation because of the scientific uncertainties in constructing new sites versus restoring historic sites. The

resource agencies will allow enhancement or preservation on a case-by-case basis but prefer restoration or creation.

Conservation measures are an example of mitigation that may result from consultation under the Endangered Species Act. During transportation development, the Iowa DOT/FHWA avoid impacts to endangered species and their habitats. If impacts to habitats are unavoidable, Iowa DOT minimizes impacts as much as possible. Finally, Iowa DOT compensates for any unavoidable impacts by restoring, creating, enhancing, or preserving suitable habitat. Often, these mitigation efforts are termed “conservation measures,” which generally fulfill mitigation requirements under the Endangered Species Act. Because FHWA is responsible for ensuring that an action by DOT/FHWA will not jeopardize the continued existence of an endangered species or result in the destruction or adverse modification of critical habitat, there may also be other types of mitigation provided for endangered species in addition to the example here.

Concurrent NEPA/404 Process (Signed in 2001):

STATEWIDE IMPLEMENTATION AGREEMENT

NATIONAL ENVIRONMENTAL POLICY ACT
AND
CLEAN WATER ACT SECTION 404

CONCURRENT NEPA/404 PROCESSES
FOR
HIGHWAY PROJECTS
IN
IOWA

Section 404 Background

In a May 1, 1992, agreement, the U.S. Department of Transportation, the Department of the Army, and the U.S. Environmental Protection Agency (EPA) adopted the document *Applying the Section 404 Permit Process to Federal-aid Highway Projects*. This document endorsed methods to integrate compliance with the National Environmental Policy Act (NEPA) and the requirements of Section 404 of the Clean Water Act.

In a July 31, 1996, agreement, the Federal Highway Administration (FHWA); the Department of the Army, U.S. Army Corps of Engineers, Rock Island District (Corps); and the Iowa Department of Transportation (Iowa DOT) adopted a document entitled "Iowa Local Operating Procedures for Integrating NEPA/404". This document provided some basic agreements on the mutual goal of concurrently processing NEPA and 404 activities, but did not provide a specific process for accomplishing that goal. Also, other Federal and State agencies that are an integral part of the NEPA and 404 processes were not involved in the development of those agreements and did not adopt the July, 1996 document.

In January of 1997, the Iowa DOT Quality Council's "Process" Subcommittee chartered a review team to review the Iowa DOT project development process with the goal of reducing development time while maintaining program integrity and quality. In November of 1997, the team provided a report which outlined a new development process called "Can-Do." Through a streamlined, non-linear process the proposed development time for a typical, non-controversial project was reduced from slightly over eleven years to about five and one-half years. Iowa DOT management approved the process and implementation began in February of 1998.

Section 404 Purpose

This Statewide Implementation Agreement (SIA) is based on the above referenced guidance, continues the spirit of cooperation and agreement contained in the July, 1996 agreement, and implements a concurrent NEPA/404 process for highway projects in Iowa.

This SIA commits its signatories to the following:

- Potential impacts to waters of the United States, including wetlands, in Iowa shall be considered at the earliest practical time in project development.
- Adverse impacts to such waters and wetlands shall be avoided to the extent practicable, and unavoidable adverse impacts shall be minimized and mitigated to the extent reasonable and practicable.
- Interagency cooperation and consultation shall be diligently pursued throughout the integrated

NEPA/404 process to ensure that the concerns of the regulatory and resource agencies are given timely and appropriate consideration and that those agencies are involved at key decision points in project development.

This SIA is intended to:

- Improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public,
- Expedite construction of necessary transportation projects, with benefits to mobility and the economy at large,
- Enable more transportation projects to proceed on budget and on schedule, and
- Protect and enhance wetlands and other waters of the United States in Iowa, which will benefit the State's aquatic ecosystems and the public interest.

Regulatory and resource agency participation in this process does not imply endorsement of a transportation plan or project. *Nothing in this SIA is intended to diminish, modify, or otherwise affect the statutory or regulatory authorities of the agencies involved.*

Section 404 Applicability

All highway projects in Iowa needing FHWA action under NEPA and a Department of the Army permit under Section 404 of the Clean Water Act are eligible for processing under this SIA. If the NEPA/404 concurrent process is initiated and because of subsequent and more complete information the project is determined to have only very limited impacts, the concurrent process may cease. If it is later determined that more significant project impacts are present, the concurrent process may be reinitiated.

In general, the decision to develop a project using the NEPA/404 concurrent process will be made jointly by the signatory agencies. Eligible projects will be developed using the process unless:

- After consultation with the signatory agencies, it is determined that the project is not of sufficient complexity to warrant additional coordination and handling, or
- After consultation with the signatory agencies, it is determined that the discovery of need for an individual permit is too late in project development to revisit purpose and need or alternative points, or
- After consultation with the signatory agencies it is determined that the project is not suitable for the NEPA/404 process outlined in this agreement.

IV. Implementing Procedures

GENERAL PROCEDURES

Section 404 Concurrence/Concurrence Points

The following definitions for Aconcurrence \cong and Aconcurrence points \cong are adopted for the purposes of this SIA.

Concurrence- Confirmation by the agency that information to date is adequate to agree that the project can be advanced to the next stage of project development. Concurrence does not imply that the project has been approved by an agency nor that it has released its obligation to determine whether the fully developed project meets statutory review criteria. If substantial new information regarding a concurrence point is brought forward during project development, the adequacy of the prior concurrence statement may be

reconsidered. The further refinement of the project, without a substantive change, will not normally be a reason to revisit the concurrence point. Rather, it should help decision makers select the least environmentally damaging, reasonable and practicable alternative.

Concurrence Points- Points within the NEPA process where the transportation agency requests agency concurrence.

The FHWA and the Iowa DOT shall seek concurrence from the other SIA signatories regarding **Purpose and Need, Alternatives to be Considered, Alternatives to be Carried Forward, and Preferred Alternative**. The intent of the concurrence points in the process is to preclude the routine revisiting of decisions that have been agreed to earlier in the process and encourage early substantive participation by the agencies. The timing of the concurrence points in the environmental process is reflected in the accompanying Iowa NEPA/404 Merger Concurrence Point Chart dated July, 1999. The chart has a degree of flexibility and range built into it within which concurrence can be reached on each of the concurrence points. The method of accomplishing the concurrence reviews will be through joint meetings of the SIA signatories and other agencies as appropriate. The FHWA and Iowa DOT will schedule meetings approximately every six months, or as mutually agreed upon, at which projects ready for one of the concurrence points will be presented for concurrence. Iowa DOT representatives from the Office of Environmental Services will develop the agendas for the meetings. The agendas will include the time and place of the meeting, descriptions of the projects to be discussed, appropriate background information to explain each project, and an indication of the concurrence point for each. Iowa DOT will provide the agenda to the SIA signatories, and other agencies as appropriate, at least 30 days in advance of the meeting to allow the regulatory and resource agencies sufficient time for review and preparation of their comments.

These meetings will promote efficient use of time and personnel resources by bringing together all of the appropriate parties to focus on multiple projects and facilitate the exchange of information necessary to obtain concurrence at the designated decision points. ***The minutes of the meeting, as revised based on review by the regulatory and resource agencies, will serve as documentation of concurrence.*** For major or complex projects or projects on expedited schedules, separate meetings may be scheduled. The Iowa DOT will provide agendas and notification for such meetings as described above and will document concurrence in the meeting minutes.

Section 404 *Resolving Disputes at Concurrence Points*

It is anticipated that concurrence at each of the concurrence points will be achieved in most cases. In more controversial projects, however, the probability of non-concurrence may increase. Therefore, a process is needed to resolve disputes at any one of the concurrence points when one or more agency(ies) does not concur.

Dispute resolution will consist of informal efforts to reach a general consensus among the participating Federal and State agencies regarding the issues involved at the particular concurrence stage. All parties appropriate to this effort should be involved, but formal concurrence will be required from the agencies with jurisdiction by law.

Attempts will be made to resolve issues at the lowest possible level in each agency. Within 30 days of a finding of non-concurrence at one of the designated points, the FHWA and Iowa DOT will meet with the agency(ies) involved to determine the direction for resolution of the dispute. The direction for resolution will be agreed upon through consensus of the agencies involved.

The NEPA/404 process may continue whether or not attempts to reach concurrence are

successful. However, if the dispute remains unresolved, any agency in non-concurrence retains the option to elevate its concerns through existing, formalized dispute elevation procedures at the appropriate point in the NEPA or Section 404 permit process in accordance with Section 404(q) procedures. This will encourage all participating agencies to very carefully consider and accommodate the concerns raised by the resource agencies prior to finalization of the NEPA process and proposed issuance of the permit to avoid processing delays.

C. Data Collection and Analysis

The Iowa DOT will ensure that data collection activities will provide the specific items of information the Corps requires for determining compliance with the Section 404(b)(1) guidelines. Data collection will take place early in the coordination process so information will be available for discussion at the concurrence point meetings. The resource and regulatory agencies will be responsible for reviewing the data and evaluations provided by Iowa DOT and providing supplemental information as appropriate.

Section 404 *Systems Planning Process*

Iowa transportation planning is accomplished under two separate processes. One is for urbanized areas over 50,000 population, where the plans are developed by the Metropolitan Planning Organization (MPO) designated for the area. The other is for the remainder of the state where the plans are developed by the Iowa DOT. The planning processes are to include the development of transportation plans addressing at least a twenty-year planning horizon and include both long and short range strategies/actions and provide for the development of transportation facilities which will function as an intermodal transportation system.

In the planning processes, the MPOs are to develop a transportation improvement program (TIP) for the metropolitan planning areas and the Iowa DOT is to develop a statewide transportation improvement program (STIP) for all areas of the state. The TIP and STIP are to cover a period of not less than 3 years and include a separate priority listing of projects to be carried out in each of those 3 years. In cooperation with the MPOs, the Iowa DOT will incorporate the metropolitan area TIPs into the STIP creating a single statewide transportation improvement program for all areas of the State.

The transportation planning process will generally establish the purpose and need for projects. The TIPs and the STIP will identify the mode of transportation to be funded, i.e., highways or transit, including bicycle and pedestrian needs.

The process for development of the TIPs and STIP allows for input by the public and the resource and regulatory agencies and also for their review of the TIPs and STIP. The resource and regulatory agencies should provide their input into the process and review the TIPs and STIP as appropriate. Agency participation, along with the list of projects included in the STIP for implementation, will assist the agencies in identifying and prioritizing future workloads.

Section 404 *Scoping*

Scoping is a process that considers a range and extent of action(s), alternatives and impacts, including Section 404 permit issues, to be considered in the environmental review process. It is not a single event or meeting but continues throughout the development of an environmental document and includes public involvement, usually a series of meetings, telephone conversations, or written comments from different individuals and groups. No matter how thorough the scoping process, it may become

necessary to modify the scope of an environmental document if new issues surface during project development.

Scoping has specific and fairly limited objectives. They are: 1) to identify the public and agency concerns; 2) to facilitate an efficient environmental documentation process through assembling the cooperating agencies, identifying all the related permits and reviews that must be scheduled concurrently; 3) to define the issues and alternatives that will be examined in detail in the environmental document while simultaneously devoting less attention and time to issues which cause no concern; and 4) to save time in the overall process by helping to ensure that draft documents adequately address relevant issues, reducing the possibility that new comments will cause a statement to be rewritten or supplemented.

Scoping begins when the Iowa DOT identifies the affected parties and presents a proposal with an initial list of environmental issues and alternatives. This basic information is necessary to explain to the public and the agencies what their involvement is expected to be. The first stage is to gather preliminary information and compose a clear picture of the action proposed.

A good scoping process will lay a firm foundation for the rest of the decision making process. If the environmental documentation can be relied upon to include all the necessary information for formulating policies and making rational choices, the agency will be better able to make a sound and prompt decision. In addition, if it is clear that all reasonable alternatives are being seriously considered, the public and agencies will usually be more satisfied with the alternative selection process.

SPECIFIC PROCEDURES

The signatory agencies have identified four concurrence points which occur during the Iowa DOT's project development process. These are strategic points in time when the Iowa DOT will present updated project development information to the resource agencies. The resource agencies will review this information and provide concurrence that the Iowa DOT is properly considering and addressing potential natural resource impacts related to the project's development in balance with other social and economic impacts. This process will also serve to satisfy the requirements for sequential mitigation (avoid, minimize, and compensate). The goal is to identify and address agency concerns throughout the development process.

The four concurrence points are: 1) Project Purpose and Need (this will equate to the Section 404 Overall Project Purpose), 2) Alternatives to be Analyzed, 3) Alternatives to be Carried Forward, and 4) Preferred Alternative. The final concurrence will be issuance of the required permits. The following describes the information that will be available to the resource agencies at the time the Iowa DOT seeks resource agency concurrence.

1. Purpose and Need-This concurrence point will occur after the Iowa DOT Commission has given approval to begin development of the project, the Iowa DOT has prepared a draft purpose and need statement for review, and the Iowa DOT has held a public meeting for local citizen and governmental input. The Iowa DOT will provide a draft purpose and need statement that will be partly based on information provided from its long-range systems planning office. A summary of input from the public information meeting will be available for the resource agencies. It is anticipated that the discussion on this concurrence point would be held in an environmental scoping meeting, early in the development process.
2. Alternatives to be Analyzed-During the proposed early environmental scoping meeting, the Iowa DOT will present some preliminary draft alignments on aerial photos and USGS quad maps showing beginning and ending points and known sensitive areas. Sensitive

areas include wetlands, woodlands, known 4(f) properties, homes, businesses, roads, known Section 106 sites, threatened and endangered species habitats, utilities, unique landforms, sources of pollution, floodplains, prairies, parks, refuges, etc. This resource information will most likely be obtained from secondary sources. Discussion will be based on general environmental knowledge of the area and aerial photo interpretation. The agency concurrence will acknowledge that the range, number and scope of alternatives to be studied is likely adequate to satisfy permitting requirements. The Iowa DOT will seek guidance and agreement from the resource agencies at this point on the scope, duration, and details of any studies that may be required for any of the alternatives to allow a decision to be made at Concurrence Point 3.

3. Alternatives to be Carried Forward-At this point, the Iowa DOT will have preliminary quantitative and qualitative information on the resource impacts for the various alternatives and potential borrow sites. Planning level, field-gathered information will be available for potential impacts to sensitive areas which include wetlands and other waters of the U.S. (including wetland types and boundaries), woodlands (by type), threatened and endangered species habitat, prime agricultural land, known Section 106 properties, and resources which include regulated substances, and cultural resources for all alternatives. Based on this information, the Iowa DOT will seek concurrence on alternatives that can be dropped from further consideration. Iowa DOT will identify and provide documentation for those alternatives it feels are not practicable. Following this concurrence point, the Iowa DOT will proceed with more detailed development of the remaining alternatives.
4. Preferred Alternative-This concurrence point will be sought following the Iowa DOT Commission's selection of an alternative. The Iowa DOT will provide materials that support the preferred alternative. This will include results from any new studies, information developed following concurrence point 3, information from public and resource agency input, minutes of the Commission meeting, documentation of minimization efforts, and conceptual mitigation site alternatives.

NOTE: The Iowa DOT Commission has statutory authority for the route selection of highway improvements. The Commission's decision incorporates:

- Preliminary engineering design showing the actual footprint for the alternative and resulting resource impacts.
- Comments received about the environmental documents completed and circulated prior to Commission approval.
- Comments (both verbal and written) received during the public hearing.
- Potential borrow(s) and compensatory mitigation options for the alternative.

This process only applies to projects being completed under the Iowa DOT's *Can-Do* project development process. Projects that were started under the previous process may attempt to utilize the concepts stated above, but each project will be handled individually based on its complexity and sensitivity.

Section 404 Modification/Termination

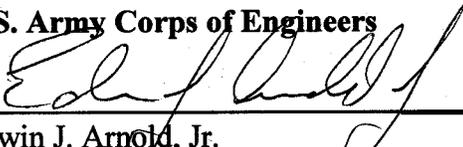
This SIA may be modified upon approval of all signatories. Modification may be proposed by one or more signatories. Proposals for modification will be circulated to all signatories for a 30-day period of review. Approval of such proposals will be indicated by written acceptance. A signatory may terminate participation in this agreement upon written notice to all other signatories.

STATEWIDE IMPLEMENTATION AGREEMENT
NATIONAL ENVIRONMENTAL POLICY ACT
AND
CLEAN WATER ACT SECTION 404
CONCURRENT NEPA/404 PROCESSES
FOR
HIGHWAY PROJECTS
IN
IOWA

The Federal agencies and the Iowa Department of Natural Resources in cooperation with the Iowa Department of Transportation (Iowa DOT) agree to implement, to the fullest extent practicable and as funding and staffing level allow, the solutions outlined in the Statewide Implementation Agreement to the extent they are implemented by Iowa DOT.

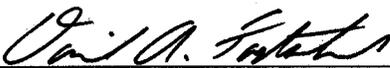
This agreement becomes effective upon signature of all agencies and may be modified by written approval of each agency. This agreement may be revoked by agreement of all agencies or by any agency upon 30-days written notice to the other agencies.

U.S. Army Corps of Engineers



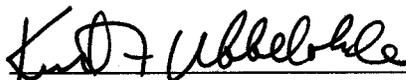
Edwin J. Arnold, Jr.
Brigadier General, U.S. Army
Division Engineer, Mississippi Valley Division

5 Jul 01
Date



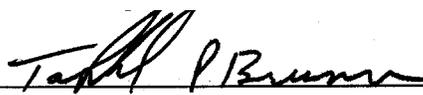
David A. Fastabend
Colonel, Corps of Engineers
Division Engineer, Northwestern Division

24 AUG 2001
Date



Kurt F. Ubbelohde
Lieutenant Colonel (P), U.S. Army
District Engineer, Omaha District

22 August 2001
Date



Torkild P. Brunso
Lieutenant Colonel, U.S. Army
Acting District Engineer, Rock Island District

22 JUN 01
Date

U.S. Fish and Wildlife Service



Richard C. Nelson

Supervisor

Rock Island Ecological Services Field Office

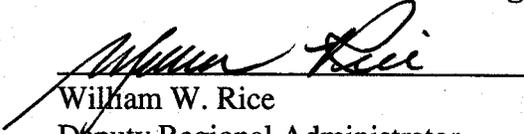
Federal Highway Administration



Bobby Blackmon

Division Administrator

U.S. Environmental Protection Agency, Region 7



William W. Rice

Deputy Regional Administrator

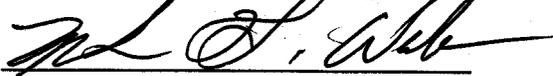
Iowa Department of Natural Resources



Eyle Asell

Acting Director

Iowa Department of Transportation



Mark Wandro

Director

GLOSSARY FOR CONCURRENT NEPA/404 PROCESS

Action – A highway or transit project proposed for the Federal Highway Administration (FHWA) or Federal Transportation Authority (FTA) funding. It also includes activities such as joint and multiple use permits, changes in land use access control, etc., which may or may not involve a commitment of Federal funds (23 CFR 771.107(b)).

Can-Do Process – The Iowa DOT’s revised project development process which was adopted in February of 1998. The process is a streamlined and co-development process which minimizes project development time through concurrent activities. The process is designed around a commitment to proactive and continuous public involvement. It incorporates environmental commitments to avoidance in preference to mitigation, to early and continuous consultation with environmental resource agencies and to early investigation and delineation of sensitive resources.

Intermodal Transportation System – A system for the movement of people and goods that is economically efficient and environmentally sound, provides the foundation for the nation to compete in the global economy, and will move people and goods in an energy efficient manner.

Jurisdiction by Law, Agencies with – Agencies with authority to approve, veto, or finance all or part of the proposal (40 CFR 1508.15).

Metropolitan Planning Organization (MPO) – That organization designated as being responsible, together with the Iowa DOT, for conducting the continuing, cooperative, and comprehensive planning process under 23 U.S.C. 134 and 49 U.S.C. 1607. It is the forum for cooperative transportation decision making for the metropolitan planning area (40 CFR 51.392; 23 CFR 450.104).

Metropolitan Transportation Plan – The official intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area (23 CFR 450.104).

Mitigation – The CEQ has defined mitigation in its regulations at 40 CFR 1508.20 to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts.

Practicable Alternative – Practicable alternatives to a project, as defined in 40 CFR 230.3(q), are those available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. (40 CFR 230 is also known as the Section 404(b)(1) guidelines)

Public Hearing – A public proceeding conducted for the purpose of acquiring information or evidence which will be considered in evaluating a proposed transportation project and/or a Department of Army permit action and which affords the public an opportunity to present their views, opinions, and information on such projects and permit actions (33 CFR 327.3(a)).

Section 106 – Section 106 of the National Historic Preservation Act of 1966, as amended, requires Federal agencies to take into account the effect of their undertakings on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The process for accomplishing these requirements is referred to as the 106 process and is contained in Federal rules at 36 CFR Part 800.

Section 404 Permit – A Department of the Army permit authorizing the discharge of dredged or fill material into waters of the United States pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344).

Special Expertise, Agencies with – Agencies with statutory responsibility, agency mission, or related program experience (40 CFR 1508.26).

Statewide Transportation Improvement Program (STIP) – A staged, multiyear, statewide, intermodal program of transportation projects which is consistent with the statewide transportation plan and planning processes and metropolitan plans, Transportation Improvement Programs (TIPs) and processes (23 CFR 450.104).

Transportation Facilities – Examples include highways, transit systems, pedestrian sidewalks, bicycle paths, and similar types of facilities.

Transportation Improvement Program (TIP) – A staged, multiyear, intermodal program of transportation projects which is consistent with the metropolitan transportation plan (23 CFR 450.104).

Waters of the United States – All waters, lakes, rivers, streams (including intermittent streams), wetlands, sloughs, and the territorial seas, unless excluded from regulation. For a complete definition and exclusions, refer to 33 CFR 328.3(a), 33 CFR 323.4 and 40 CFR 230.3(s).

Wetlands – Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3(b) and 40 CFR 230.3(t)).

4(f) – Section 4(f) of the Department of Transportation (DOT) Act of 1966. Section 4(f) was originally set forth in Title 49, United States Code, Section 1653(f), and applies only to agencies within the DOT. It provides that the Secretary may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, State, or local significance only if there is no prudent and feasible alternative to using that land and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

404(q) Elevation Process – Section 404(q) of the CWA requires development of procedures to expedite permit decisions by eliminating duplicative paperwork. The current process allows some Federal agencies to appeal Section 404 permit decisions made by a District Engineer of the USACE. The process is contained in the 404(q) Memorandums of Agreement referenced in Appendix C.

Authorities:

Federal Authorities:

Clean Water Act (33 USC 1251 - 1377)

Rivers and Harbors Act of 1899 (33 USC 403 *et seq.*)

National Environmental Policy Act (42 USC 4321 *et seq.*)

Council on Environmental Quality's Implementing Regulations for NEPA (40 CFR Parts 1500-1508)

Executive Order 11990--Protection of Wetlands

Regulatory Programs of the Corps of Engineers (33 CFR Parts 320 through 330)

Section 404 (b)(1) Guidelines for the Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 320)

Compensatory Mitigation for Losses of Aquatic Resources (33 CFR 332)

Department of Transportation Order 5660.1A--Preservation of the Nation's Wetlands

Mitigation of Impacts to Wetlands and Natural Habitat (23 CFR 777)

Fish and Wildlife Coordination Act (16 USC 661 *et seq.*)

U. S. Fish and Wildlife Service Mitigation Policy (46 FR 7644-7663, 1981)

Endangered Species Act of 1973 (16 USC 1536 *et seq.*)

Migratory Bird Treaty Act (16 USC 703-711)

Magnuson Fisheries Conservation and Management Act (16 USC 1801 *et seq.*)

National Marine Fisheries Habitat Conservation Policy (48 FR 53142, 1983)

Coastal Zone Management Act (16 USC 1451 *et seq.*)

National Historic Preservation Act, Section 106 (16 USC 470)

Federal Agricultural Improvement and Reform Act of 1996, Public Law 104-494 (16 USC 3801 *et seq.*)

Farmland Protection Policy Act (7 USC 4201-4209)

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
(Uniform Act) (42 USC 4601-4655)

Section 4(f) of the Department of Transportation Act (49 USC 303(b)-303(c))

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users
(Public Law 109-59, August 10, 2005)

State Authorities:

Iowa Code 455B, Jurisdiction of Department of Natural Resources

567 Iowa Administrative Code Chapter 61, Water Quality Standards

Iowa Code 481B, Endangered Plants and Wildlife

571 Iowa Administrative Code Chapter 77, Endangered and Threatened Plant and Animal
Species

Iowa Code 461A, Public Lands and Waters

Iowa Code 314.23, Environmental Protection

Iowa Code 314.24, Natural and Historic Preservation

Iowa DOT Policy 500.03

APPENDIX 2 DEFINITIONS

33 CFR 332.2 Definitions:

Adaptive management means the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. It requires consideration of the risk, uncertainty, and dynamic nature of compensatory mitigation projects and guides modification of those projects to optimize performance. It includes the selection of appropriate measures that will ensure that the aquatic resource functions are provided and involves analysis of monitoring results to identify potential problems of a compensatory mitigation project and the identification and implementation of measures to rectify those problems.

Advance credits means any credits of an approved in-lieu fee program that are available for sale prior to being fulfilled in accordance with an approved mitigation project plan. Advance credit sales require an approved in-lieu fee program instrument that meets all applicable requirements including a specific allocation of advance credits, by service area where applicable. The instrument must also contain a schedule for fulfillment of advance credit sales.

Buffer means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

Compensatory mitigation means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Compensatory mitigation project means compensatory mitigation implemented by the permittee as a requirement of a Department of Army permit (i.e., permittee-responsible mitigation), or by a mitigation bank or an in-lieu fee program.

Condition means the relative ability of an aquatic resource to support and maintain a community of organisms having a species composition, diversity, and functional organization comparable to reference aquatic resources in the region.

Credit means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved.

DA means Department of the Army.

Days means calendar days.

Debit means a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resources impacted by the authorized activity.

Enhancement means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.

Fulfillment of advance credit sales of an in-lieu fee program means application of credits released in accordance with a credit release schedule in an approved mitigation project plan to satisfy the mitigation requirements represented by the advance credits. Only after any advance credit sales within a service area have been fulfilled through the application of released credits from an in-lieu fee project (in accordance with the credit release schedule for an approved mitigation project plan), may additional released credits from that project be sold or transferred to permittees. When advance credits are fulfilled, an equal number of new advance credits is restored to the program sponsor for sale or transfer to permit applicants.

Functional capacity means the degree to which an area of aquatic resource performs a specific function.

Functions means the physical, chemical, and biological processes that occur in ecosystems.

Impact means adverse effect.

In-kind means a resource of a similar structural and functional type to the impacted resource.

In-lieu fee program means a program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for DA permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. However, the rules governing the operation and use of in-lieu fee programs are somewhat different from the rules governing operation and use of mitigation banks. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.

In-lieu fee program instrument means the legal document for the establishment, operation, and use of an in-lieu fee program.

Instrument means mitigation banking instrument or in-lieu fee program instrument.

Interagency Review Team (IRT) means an interagency group of federal, tribal, state, and/or local regulatory and resource agency representatives that reviews documentation for, and advises the district engineer on, the establishment and management of a mitigation bank or an in-lieu fee program.

Mitigation bank means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.

Mitigation banking instrument means the legal document for the establishment, operation, and use of a mitigation bank.

Off-site means an area that is neither located on the same parcel of land as the impact site, nor on a parcel of land contiguous to the parcel containing the impact site.

On-site means an area located on the same parcel of land as the impact site, or on a parcel of land contiguous to the impact site.

Out-of-kind means a resource of a different structural and functional type from the impacted resource.

Performance standards are observable or measurable physical (including hydrological), chemical and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

Permittee-responsible mitigation means an aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

Preservation means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Reference aquatic resources are a set of aquatic resources that represent the full range of variability exhibited by a regional class of aquatic resources as a result of natural processes and anthropogenic disturbances.

Rehabilitation means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Release of credits means a determination by the district engineer, in consultation with the IRT, that credits associated with an approved mitigation plan are available for sale or transfer, or in the case of an in-lieu fee program, for fulfillment of advance credit sales. A proportion of projected credits for a specific mitigation bank or in-lieu fee project may be released upon approval of the mitigation plan, with additional credits released as milestones specified in the credit release schedule are achieved.

Restoration means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riparian areas are lands adjacent to streams, rivers, lakes, and estuarine-marine shorelines. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality.

Service area means the geographic area within which impacts can be mitigated at a specific mitigation bank or an in-lieu fee program, as designated in its instrument.

Services mean the benefits that human populations receive from functions that occur in ecosystems.

Sponsor means any public or private entity responsible for establishing, and in most circumstances, operating a mitigation bank or in-lieu fee program.

Standard permit means a standard, individual permit issued under the authority of section 404 of the Clean Water Act and/or sections 9 or 10 of the Rivers and Harbors Act of 1899.

Temporal loss is the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss. When the compensatory mitigation project is initiated prior to, or concurrent with, the permitted impacts, the district engineer may determine that compensation for temporal loss is not necessary, unless the resource has a long development time.

Watershed means a land area that drains to a common waterway, such as a stream, lake, estuary, wetland, or ultimately the ocean.

Watershed approach means an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation projects address those needs. A landscape perspective is used to identify the types and locations of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by activities authorized by DA

permits. The watershed approach may involve consideration of landscape scale, historic and potential aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements for DA permits.

Watershed plan means a plan developed by federal, tribal, state, and/or local government agencies or appropriate non-governmental organizations, in consultation with relevant stakeholders, for the specific goal of aquatic resource restoration, establishment, enhancement, and preservation. A watershed plan addresses aquatic resource conditions in the watershed, multiple stakeholder interests, and land uses. Watershed plans may also identify priority sites for aquatic resource restoration and protection. Examples of watershed plans include special area management plans, advance identification programs, and wetland management plans.

23 CFR 777.2 Definitions:

Biogeochemical transformations means those changes in chemical compounds and substances which naturally occur in ecosystems. Examples are the carbon, nitrogen, and phosphorus cycles in nature, in which these elements are incorporated from inorganic substances into organic matter and recycled on a continuing basis.

Compensatory mitigation means restoration, enhancement, creation, and under exceptional circumstances, preservation, of wetlands, wetland buffer areas, and other natural habitats, carried out to replace or compensate for the loss of wetlands or natural habitat area or functional capacity resulting from Federal-aid projects funded pursuant to provisions of title 23, U.S. Code. Compensatory mitigation usually occurs in advance of or concurrent with the impacts to be mitigated, but may occur after such impacts in special circumstances.

Mitigation bank means a site where wetlands and/or other aquatic resources or natural habitats are restored, created, enhanced, or in exceptional circumstances, preserved, expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources. For purposes of the Clean Water Act, Section 404 (33 U.S.C. 1344), use of a mitigation bank can only be authorized when impacts are unavoidable.

Natural habitat means a complex of natural, primarily native or indigenous vegetation, not currently subject to cultivation or artificial landscaping, a primary purpose of which is to provide habitat for wildlife, either terrestrial or aquatic. For purposes of this part, habitat has the same meaning as natural habitat. This definition excludes rights-of-way that are acquired with Federal transportation funds specifically for highway purposes.

Net gain of wetlands means a wetland resource conservation and management principle under which, over the long term, unavoidable losses of wetlands area or functional capacity due to highway projects are offset by gains at a ratio greater than 1:1, through restoration, enhancement, preservation, or creation of wetlands or associated areas critical to the protection or conservation of wetland functions. This definition specifically excludes natural habitat, as defined in this section, other than wetlands.

On-site, in-kind mitigation means compensatory mitigation which replaces wetlands or natural habitat area or functions lost as a result of a highway project with the same or like wetland or habitat type and functions adjacent or contiguous to the site of the impact.

Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics, in light of overall project purposes.

Service area of a mitigation bank means that the service area of a wetland or natural habitat mitigation bank shall be consistent with that in the Federal Guidance for the Establishment, Use[,] and Operation of Mitigation Banks (60 FR 58605, November 28, 1995), *i.e.*, the designated area (e.g., watershed, county) wherein a bank can be expected

to provide appropriate compensation for impacts to wetlands and/or other aquatic or natural habitat resources.

Wetland or habitual enhancement means activities conducted in existing wetlands or other natural habitat to achieve specific management objectives or provide conditions which previously did not exist, and which increase one or more ecosystem functions. Enhancement may involve tradeoffs between the resource structure, function, and values; a positive change in one may result in negative effects to other functions. Examples of activities which may be carried out to enhance wetlands or natural habitats include, but are not limited to, alteration of hydrologic regime, vegetation management, erosion control, fencing, integrated pest management and control, and fertilization.

Wetland or habitat establishment period means a period of time agreed to by the FHWA, State DOT, and U.S. Army Corps of Engineers, as necessary to establish wetland or natural habitat functional capacity in a compensatory mitigation project sufficient to compensate wetlands or habitat losses due to impacts of Federal-aid highway projects. The establishment period may vary depending on the specific wetland or habitat type being developed.

Wetland or habitat functional capacity means the ability of a wetland or natural habitat to perform natural functions, such as provide wildlife habitat, support biodiversity, store surface water, or perform biogeochemical transformations, as determined by scientific functional assessment. Natural functions of wetlands include, but are not limited to, those listed by the U.S. Army Corps of Engineers at 33 CFR 320.4(b)(2)(i) through (viii).

Wetland or habitat preservation means the protection of ecologically important wetlands, other aquatic resources, or other natural habitats in perpetuity through the implementation of appropriate legal and physical mechanisms. Preservation of wetlands for compensatory mitigation purposes may include protection of upland areas adjacent to wetlands as necessary to ensure protection and/or enhancement of the aquatic ecosystem.

Wetland or habitat restoration means the reestablishment of wetlands or natural habitats on a site where they formerly existed or exist in a substantially degraded state.

Wetland or wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation, typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Wetlands or habitat mitigation credit means a unit of wetlands or habitat mitigation, defined either by area or a measure of functional capacity through application of scientific functional assessment. With respect to mitigation banks, this definition means the same as that in the Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks.

APPENDIX 3

TECHNICAL CRITERIA FOR COMPENSATORY MITIGATION

Unless otherwise stated, mitigation standards and criteria for waters of the United States follow those at 33 CFR 332. The criteria below further explain and build upon those standards. The U.S. Army Corps of Engineers has jurisdiction by law to determine appropriate mitigation to offset impacts to waters of the United States. The additional criteria below are based on input and guidance from the Rock Island District of the U.S. Army Corps of Engineers.

General – Mitigation of Impacts to waters of the United States:

1. **Objective:** The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States.
2. **Mitigation Approach:** Mitigation will be considered in the following order or as otherwise directed by the U.S. Army Corps of Engineers:
 - Mitigation Bank Credits
 - In-lieu Fee Program Credits
 - Permittee-responsible mitigation under a watershed approach
 - Permittee-responsible through on-site and in-kind mitigation
 - Permittee-responsible through off-site and/or out-of-kind mitigation
3. **Watershed Approach:** Iowa DOT will use both the Iowa DNR's Wildlife Action Plan and Iowa's comprehensive wetland plan (under development) to prioritize wetland mitigation when possible. The State of Iowa's Impaired Waters List (303d) will be used to prioritize stream mitigation when possible.
4. **Site Selection:** Factors for site selection will include watershed needs, on-site alternatives, and practicability of accomplishing ecologically self-sustaining restoration.
5. **Mitigation Type:** In-kind is preferable to out-of-kind. Restoration is preferable to creation. Preservation and enhancement may be used in special cases. Classification of impacts and mitigation will follow Cowardin, et al. (1979) to the class level.
6. **Amount of Mitigation:** Wetland mitigation will include a minimum of 1:1 acreage restoration or creation. Preservation, enhancement, and buffer will be given partial credit to account for mitigation acreages in excess of 1:1. Iowa DOT's policy for wetland mitigation is a minimum of 1.5:1. Stream mitigation will be determined on a case by case basis until a mitigation method is approved and agreed upon by the Iowa DOT and Rock Island District of the U.S. Army Corps of Engineers.
7. **Service Area:** Where feasible and practicable, mitigation will be performed within the same Hydrologic Unit Code (HUC) 8 or adjacent HUC 8 as the project impacts and within the same Ecological Drainage Unit (EDU) and HUC 6. If mitigation will be performed in a different EDU but same HUC 6, a multiplier of 2 will apply (meaning proposed mitigation acreage times 2). In a different HUC 6 but same EDU, a multiplier of 3 will apply. To cross both EDU and HUC 6

boundaries, a multiplier of 4 will apply. For a non-adjacent HUC 8 within the same EDU and HUC 6, a multiplier of 2 will apply. For stream mitigation, mitigation will be performed within the same or adjacent HUC 8, within the same EDU and HUC 6. Stream mitigation proposals outside of these boundaries will be considered by the signatories on a case by case basis.

8. Determination of Impacts: For wetlands, impacts will be calculated based on acreage using the 1987 Wetland Delineation Manual and its Midwest Regional Supplement. Wetlands in agricultural fields will be analyzed using the 1996 Food Security Act Manual method and the Iowa Mapping Conventions for wetlands. Wetland types will follow Cowardin, et al. (1979) to the class level. Stream impacts will be calculated using linear feet of stream impacted until a mitigation method is approved and agreed upon by the Iowa DOT and Rock Island District of the U.S. Army Corps of Engineers.
9. Buffers: When buffers are required by the district engineer as part of the compensatory mitigation package, mitigation credit for buffers will be provided at a 10:1 ratio based on acreage.
10. Financial Assurances: The Iowa DOT will fully fund the planning, acquisition, construction, long-term monitoring and management, and any necessary remediation of compensatory mitigation projects identified during project development, subject to Iowa DOT Commission approval, programming in Iowa DOT's 5-year program, and availability of funds.

Components of Written Mitigation Plans:

The following 12 components will be included in written mitigation plans:

Objectives, site selection, site protection, baseline information, determination of credits, mitigation work plan, maintenance plan, performance standards, monitoring requirements, long-term management plan, adaptive management plan, and financial assurances.

The level of detail of these 12 components will be commensurate with the scale and scope of impacts. Purchase of credits from mitigation banks or in-lieu fee programs need only include baseline information and determination of credits.

Nationwide Permit Mitigation – For projects approved via Nationwide Permits:

The following standard approaches to compensatory mitigation apply to projects authorized via the Nationwide Permits, in order to most appropriately use staff time and agency resources. It is not anticipated that these projects will be developed using the mitigation concurrence process, except for special, non-routine cases. The standard stream mitigation approaches below will be used in lieu of other stream mitigation methods.

Wetland Mitigation

Compensatory wetland mitigation will be provided when impacts exceed 0.1 acres on an acre-for-acre basis, in accordance with the other mitigation provisions

listed in this appendix and subject to the regulatory program of the U.S. Army Corps of Engineers.

Stream Mitigation

The following standard approaches to stream mitigation will be utilized within highway right-of-way where feasible and practicable:

1. Native grass plantings along disturbed stream banks.
2. Rip rap splash basins at inlets and outlets of culverts that are 6X6 feet and larger. Rip rap splash basins for culverts smaller than 6X6 feet will be provided on a case by case basis.
3. In-stream structures such as riffles, grade-control structures, boulder clusters, cross-vane weirs, or other appropriate structures. Structures will be designed to be fish-passable. In-stream structures are not feasible or practicable for all projects.

After consultation with the signatory agencies, if it is determined that mitigation concurrence is necessary for a project regardless of anticipated 404 authorization, the concurrence process may be initiated.

Endangered Species Act Mitigation:

For compensatory mitigation provided in accordance with the Endangered Species Act, mitigation will be developed in consultation with the U.S. Fish and Wildlife Service and/or the Iowa DNR. Mitigation may include conservation measures resulting from Section 7 consultation. Mitigation details depend upon the species or habitats of concern and the associated impacts. Projects requiring compensatory mitigation for threatened or endangered species will be developed using the mitigation concurrence process.

Appendix C

Project Types

Project Types

Type I Major Change:

- ❖ **Location:** New Alignment or relocation along major portion of highway section
- ❖ **Grade:** Complete new grade lines, or very small segments of existing grade line retained
- ❖ **Lanes:** Two lanes, change from two lanes to multi-lane either divided or undivided, or right of way acquired for future multi-lane construction
- ❖ **ROW:** Substantial right of way acquisition required
- ❖ **Public Access:** If freeway or expressway system, restricted to interchange locations or limited at-grade connections. Otherwise, would remain the same or would involve only minor adjustments.
- ❖ **Private Access:** If on freeway or expressway systems, may be restricted to use of frontage roads or points of public access. Otherwise, could involve changes with the limitations on number and location in areas of right of way acquisition.

Applicable Project Groups

- New Construction
- Relocation
- Reconstruction
- Bridge Replacement (Major crossing)

Corresponding Work Types

- ◆ Grading
- ◆ Pavement: New/Replace
- ◆ Right of Way
- ◆ Bridge: New/Replace

Work Codes

- ✓ 1011 through 1034: Pavement-New/Replace
- ✓ 2011 through 2500: Bridge-New/Replace
- ✓ 3511 Grading
- ✓ 5511 Right of way Purchase
- ✓ 5521 Corridor Preservation
- ✓ 6011 Planning
- ✓ 6021 Engineering-Design
- ✓ 6031 Right of Way
- ✓ 6051 Research
- ✓ 6071 Environmental Assessment
- ✓ 9010 Preserve Corridor Right of Way
- ✓ 9020 Planning Study
- ✓ 9030 Outside Services Planning
- ✓ 9032 Outside Services Right of Way
- ✓ 9033 Outside Services Engineering
- ✓ 9034 Outside Services Survey
- ✓ 9040 Preliminary Engineering

TYPE II Minor Change

- ❖ **Location:** Generally uses existing location
- ❖ **Grades:** Generally uses existing grade lines.
- ❖ **Lanes:** Remains the same in number but will normally be widened
- ❖ **ROW:** Usually requires some additional right of way
- ❖ **Public Access:** Remains the same or involves only minor adjustments.
- ❖ **Private Access:** Could involve changes with limitations on number and location in areas of right of way acquisition. Would not normally involve frontage roads.

Applicable Project Groups

- Reconstruction
- Rehabilitation
- Restoration
- Bridge Replacement
- Intersection Improvement

Corresponding Work Types

- ◆ Grading
- ◆ Pavement Rehabilitation
- ◆ Bridge: New/Replace
- ◆ Pavement: New/Replace
- ◆ Right of Way
- ◆ Traffic/Safety

Work Codes

- ✓ 3511 Grading
- ✓ 1511 PCC Pavement Widening
- ✓ 1512 PCC Pavement w/ACC Resurfacing
- ✓ 1513 PCC Pavement Widening w/PCC Resurfacing
- ✓ 1514 PCC Overlay-Bonded
- ✓ 1515 PCC Overlay-Unbonded
- ✓ 1521 ACC Pavement Widening
- ✓ 1522 ACC Pavement Widening w/ACC Resurfacing
- ✓ 1523 ACC Resurfacing
- ✓ 1527 PCC Pavement Widening with ACC Resurfacing
- ✓ 1528 PCC Pavement Widening w/ACC Resurfacing
- ✓ 5511 Right of Way Purchase
- ✓ 6031 Right of Way

TYPE III Repair, Replacement or Operational Improvement

- ❖ **Location:** No change
- ❖ **Grades:** No change requiring additional right of way, except in isolated circumstances.
- ❖ **Lanes:** No change, Width may change and turning lanes may be added.
- ❖ **Shoulders:** May be widened and may be granular surfaced.
- ❖ **ROW:** No additional right of way required except at isolated locations.
- ❖ **Public Access:** Remains the same.
- ❖ **Private Access:** Remains the same.

Applicable Project Groups

- Rehabilitation
- Restoration
- Maintenance
- Bridge Replacement
- Bridge Repair
- Bridge Rehabilitation
- Safety Improvement
- Other

Corresponding Work Types

- ◆ Pavement Rehabilitation
- ◆ Bridge Rehabilitation
- ◆ Traffic/Safety
- ◆ Shouldering
- ◆ RCB Culvert
- ◆ Right of Way
- ◆ Bridge: New/Replace
- ◆ Rest Areas/Weigh Scales
- ◆ Other

Work Codes

- ✓ 1511 through 1571 Pavement Rehabilitation
- ✓ 2011 through 2057 Bridge-New/Replace
- ✓ 2511 through 2599 Bridge Rehabilitation
- ✓ 3041 through 3133 RCB Culvert
- ✓ 3521 through 3599 Grading
- ✓ 4011 through 4062 Shouldering
- ✓ 4511 through 4562 Erosion Control/Landscaping
- ✓ 5011 through 5062 Traffic/Safety
- ✓ 6061 Traffic and Safety
- ✓ 7011 through 7081 Rest Area/Weigh Scales
- ✓ 7511 through 7531 Salvage and Removal
- ✓ 8011 through 8031 Miscellaneous
- ✓ 5511 Right of Way
- ✓ 6022 Engineering-Construction Inspection
- ✓ 6023 Engineering-Materials
- ✓ 6024 Engineering-Survey
- ✓ 6031 Right of Way Purchase
- ✓ 6041 Bridge Inspection
- ✓ 9033 Outside Services Bridge Inspection

Appendix D

Project Monitoring Overview

Overview of Project Monitoring for Project Development

2012

Highway Candidates List

- ✓ Master listing of un-programmed projects; or programmed projects that could have the programmed year advanced or delayed due to schedule or funding.
- ✓ On-line (DOTNet) accessibility
- ✓ Project is initiated by the project champion
- ✓ Listing requires a project concept, geo-referenced project limits, estimated cost, proposed project type (I, II, or III), & an estimated development time.
- ✓ List is managed and maintained by the Project Delivery Bureau and Program Management.

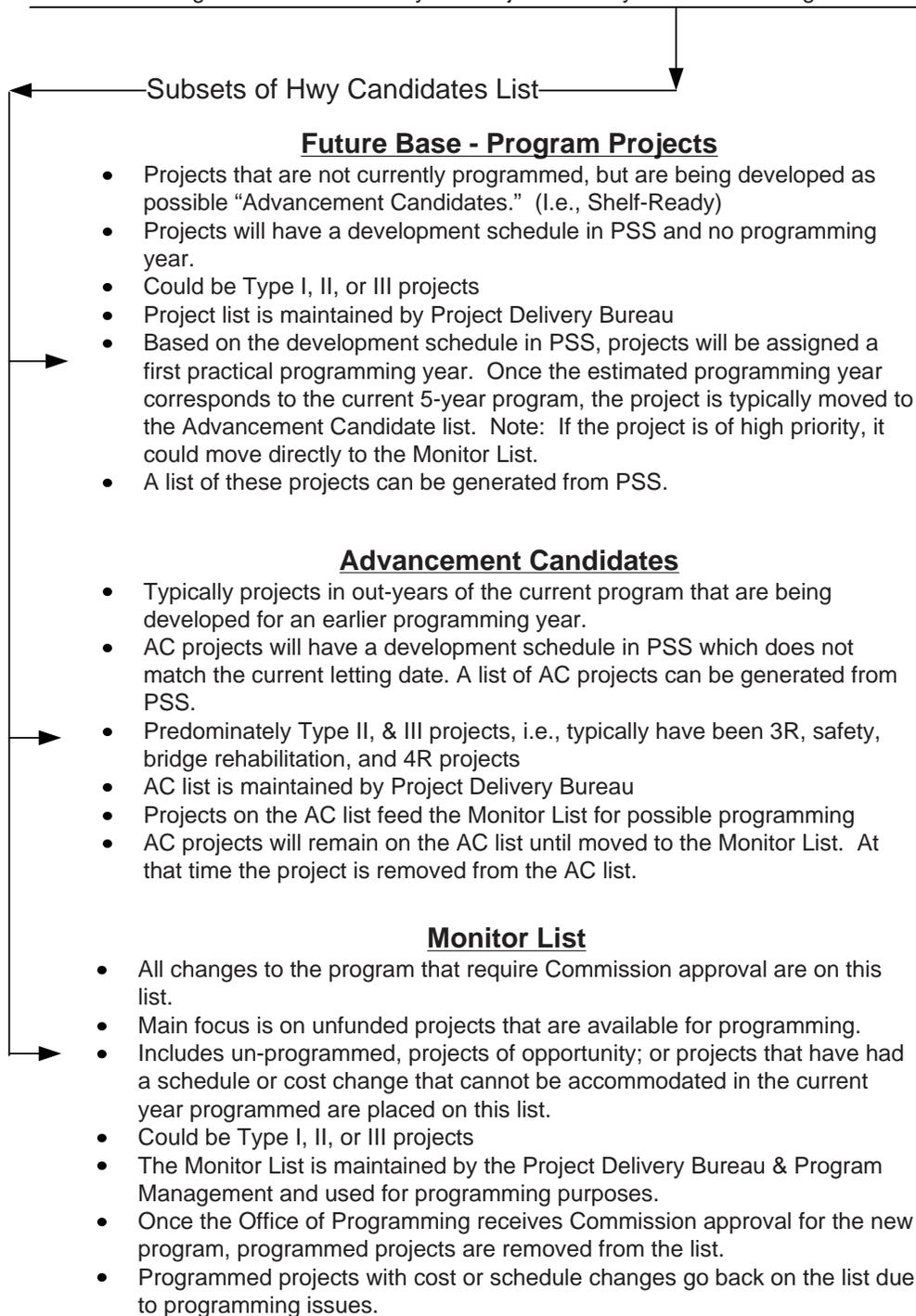


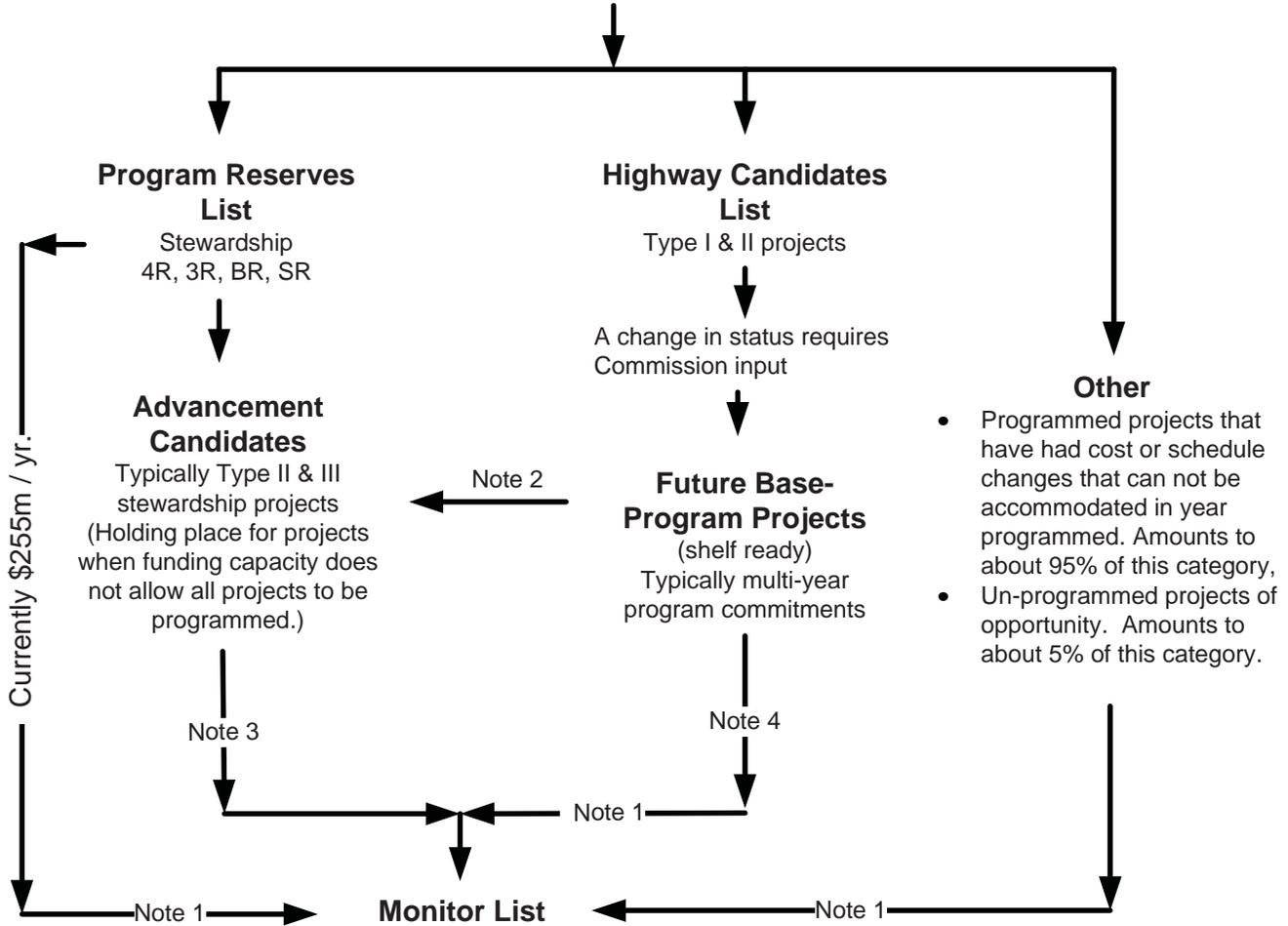
Figure 2

Overview of Project Monitoring for Programming

2013

Inputs for Project Identification and Needs

Typical Sources: Federal Earmarks, General Public, Local Govs, Iowa In Motion, Bridge Management, Pavement Management, Capacity Analysis, Economic Development Considerations, DOT or District Input, etc.



- Is a tool to manage all proposed changes to the 5-year program.
- All projects are separated into 6 categories.
 1. Interstate Stewardship (4R)
 2. Non-Interstate Pavement Modernization (3R)
 3. Non-Interstate Bridge modernization (BR)
 4. Safety (SR)
 5. Non-Interstate capacity/System Enhancement
 6. Major Interstate Capacity/System Enhancement
- Projects compete for funding only with other projects in their same category.
- Changes requiring Commission approval before adding to, or amending the program

Note 1: Project is considered during regular programming cycle

Note 2: Project can move if the development schedule will allow programming in the current program. A change in status requires Commission input.

Note 3: Project advances if unforeseen revenue allows. Typically this is an amendment to the program. A change in status requires Commission input

Note 4: Project can move when revenue capacity allows. A change in status requires Commission input.

Feedback with Commission



Draft Program



Final Program

Appendix E

Cost Estimate Change Form

Cost Estimate Change Form

Date: <input style="width: 90%;" type="text"/>	Change #: <input style="width: 90%;" type="text"/>	Identified by (Agency/Individual) <input style="width: 90%;" type="text"/>
---	---	---

Location	Funding Sources	Task Affected
<input type="checkbox"/> Segment 1 <input type="checkbox"/> Segment 2 <input type="checkbox"/> Segment 3 <input type="checkbox"/> Segment 4 <input type="checkbox"/> Segment 5	<input type="checkbox"/> Federal Aid <input type="checkbox"/> State of Iowa <input type="checkbox"/> Adjoining State <input type="checkbox"/> Local Contribution	<input type="checkbox"/> Prelim. Eng. <input type="checkbox"/> Final Design <input type="checkbox"/> ROW <input type="checkbox"/> Construction Inspection <input type="checkbox"/> Construction

Contract:

Description Summary:

Other Cost Reallocation:

Base Cost	Schedule Impacts
<input type="checkbox"/> Increase <input type="checkbox"/> Decrease Amount (2007 \$): _____ Amount (Yr. of Exp.) \$: _____ Backup: _____	<input type="checkbox"/> Planning/Prelim. Eng. Impact <input type="checkbox"/> Final Design Schedule Impact <input type="checkbox"/> ROW Schedule Impact <input type="checkbox"/> Construction Schedule Impact <input type="checkbox"/> Unknown Explain: _____

Revenue Source Impacts	Increase	Decrease
Federal Aid State of Iowa Adjoining State Local Contribution		

Summary of Cost Change		
Total Cost Before Change: _____ (2007 \$) _____ (Yr. of Exp. \$)	Is the cost considered: <input type="checkbox"/> Exist Scope Change <input type="checkbox"/> New Scope	Total Cost After Change: _____ (2007 \$) _____ (Yr. of Exp. \$)

Appendix F

FHWA Memorandum on Context-Sensitive Design



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Subject: ACTION: Context-Sensitive Design

Date: January 24, 2002

From: Sign by: Mary E. Peters
Mary E. Peters
Administrator

Reply to:
Attn. of: HIPA-20
Seppo Sillan
366-1327

To: Directors of Field Services
Resource Center Managers
Division Administrators

As you know, I believe it is important for FHWA to identify the most critical areas where we can make a difference. So that we can all concentrate our effort on the critical areas, we jointly selected the "Vital Few," which are: Safety, Environmental Stewardship and Streamlining, and Congestion Mitigation.

Context-Sensitive Design (CSD) is an approach that places preservation of historic, scenic, natural environment, and other community values on an equal basis with mobility, safety and economics. I am asking for your support and assistance in advancing CSD as an element of our Environmental Stewardship and Streamlining efforts.

A transportation facility is an integral part of the community's fabric and it can help define the character of the community or it can destroy it. A context-sensitive approach to planning and designing transportation facilities will help us to better understand that role and properly address it.

Our State departments of transportation (State DOT) partners and we in the FHWA should view CSD as an opportunity to connect with the communities and the constituents that we serve. We should seek to institutionalize the principles of CSD with the same commitment that drove the implementation of the Interstate Highway System. We are in an era that calls for innovative thinking, improved coordination, cooperation, interdisciplinary decision-making, streamlined implementation, and community acceptance. These are lofty but necessary goals. I encourage each of you to work tirelessly in partnership with your State DOT and other partners toward initiating CSD concepts where they do not exist, and toward sustaining them where they do.

If you have questions, we are prepared to offer technical assistance to your staff and the State DOT. You may contact Seppo Sillan, (202) 366-1327, seppo.sillan@fhwa.dot.gov or Harold Peaks, (202) 366-1598, harold.peaks@fhwa.dot.gov.

SUMMARY SHEET

SUBJECT: Context-Sensitive Design (CSD)

ISSUE: FHWA's position on CSD principles

FHWA POSITION: FHWA supports the CSD approach to project development. This memorandum encourages the divisions to work in partnership with State DOT's toward initiating CSD concepts where they do not exist, and toward sustaining them where they do.

BACKGROUND: The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the 1995 National Highway System (NHS) Designation Act both encouraged and emphasized greater flexibility in highway design. The NHS Act specifically added human and natural environment, modal access and community interests to the factors commonly weighed in highway design, such as safety, durability and economy of maintenance.

Context-sensitive design is a process that begins with the early project planning and scoping phases and involves the environmental and public participation process, preliminary and final design, and even construction.

The initial actions that began to define what we now are calling context-sensitive design (CSD) included the development and publication of FHWA's "Flexibility in Highway Design" publication in 1997 and the Maryland "Thinking Beyond the Pavement" conference the following year. Since then, FHWA, AASHTO, the State DOT's and others in the transportation community have been full partners in promoting design that recognizes the context in which the roadway exists. We have sponsored or co-sponsored other national conferences on CSD and jointly with AASHTO, we have established a website to share the latest information on context-sensitive design (www.fhwa.dot.gov/csd/index.htm).

POINT OF CONTACT: Seppo I. Sillan, HIPA-20, 61327

SUPERVISOR: Dwight A. Horne, HIPA, 65530

Appendix G

How a Project Gets Programmed

