Performance Contracting for Construction

A Guide to Using

Performance Goals and Measures to Improve Project Delivery

U.S. Department of Transportation
Federal Highway Administration

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Acronyms and Definitions

Acronym/Abbreviation	Meaning
AGC	The Associated General Contractors of America
CLIN	Contract Line Item Number
CO	Contracting Officer
COTR	Contracting Officer's Technical Representative
DOTs	State Departments of Transportation
dBA	A-weighted decibels
FHWA	Federal Highway Administration
HfL	Highways for LIFE
ID/IQ	Indefinite Delivery/Indefinite Quantity
IFB	Invitation for Bids
IR	Incident Rate
IRI	International Roughness Index
LIFE	**L**onger-lasting highway infrastructure using **I**nnovations to accomplish the **F**ast construction of **E**fficient and safe highways and bridges
MOT	Maintenance of Traffic
MoDOT	Missouri Department of Transportation
mph	Miles per Hour
PE	Project Engineer
PEB	Performance Evaluation Board
PM	Project Manager
QM	Quality Management
QA/QC	Quality Assurance/Quality Control
RFP	Request for Proposals
RTMS	Remote Traffic Microwave Sensor
SEP 14	Special Experimental Project Number 14
SMART	Specific, Measurable, Achievable, Results-Oriented, Timely
STA	State Transportation Agency
TBD	To Be Determined

Term	Definition
A+B Bidding	A method of bidding that includes both cost and time in determining the successful contractor.
Baseline	The initial set of conditions measured before the project and used for comparison or as a control.
Best Value Award	A procurement process where price and other key factors (such as technical approach, management, staffing, etc.) are considered in the contractor evaluation and selection process.
Contracting Officer	The Agency representative having full authority to execute and administer the contract on behalf of the Government, or a warranted delegate of that official who has been delegated some of that authority, e.g. contract administration.
Contracting Officer's Technical Representative	The Agency employee or employees having onsite support authority on behalf of the Contracting Officer as provided in Agency delegations. For construction contracts, this person is normally the Project Engineer.
Dispute Resolution Hierarchy	Three levels of management personnel from the Owner Agency, the contractor, and FHWA, that work to solve problems that can not be solved by the project personnel. This hierarchy is formed during the formal partnering process.
Enhanced Low Bid	A procurement process where there are prequalification criteria for the contractors wishing to participate in a low bid procurement.
Highways for LIFE	A program to advance **L**onger-lasting highway infrastructure using **I**nnovations to accomplish the **F**ast construction of **E**fficient and safe highways and bridges
Invitation for Bids	A public advertisement inviting bids, describing the project to be constructed, how to obtain the plans, specifications and bid forms, and giving bidding instructions including the time and place of bid opening.
Level of Performance	A defined condition or response time. For example, there are 5 levels of performance defined for each Performance Measure in Table 1.
Moving Queue	Traffic speed is 20% less than the posted speed.
Owner Agency	The State Department of Transportation developing the performance contract.

Term	Definition
Partnering	Formal facilitated meetings between the Owner Agency and the contractor to discuss project goals, issues, and project-level conflict resolution.
Project Engineer	The engineer assigned to represent the Chief Engineer in the administration of the construction contract (also see Project Manager and Contracting Officer's Technical Representative).
Performance Evaluation Board	A group of Owner Agency and FHWA personnel that advises the Contracting Officer on the amount of the total incentive fee to be received by the Contractor or the disincentive fee to be applied to the Contractor.
Performance Contracting	An approach where a private contractor is responsible for achieving a defined set of goals, and where performance goals are specified instead of methods.
Performance Goal	The minimum acceptable level of performance for a given performance measure. For example, "Incident Rate for Worker Injuries is less than 4.0" is the Performance Goal for Performance Measure 1 in Table 1.
Performance Measure	A set of defined outcome-based conditions (for example – Peak period queue length is equal to typical pre-construction peak period queue length) or response times (for example – Non-injury incidents are cleared from the travel lanes within 20 minutes) that project personnel (Owner Agency and contractor) use to evaluate the success of the contractor.
Project Manager	The person from the Owner Agency assigned to manage the contract (also see Project Engineer and Contracting Officer's Technical Representative)
Project	A temporary endeavor, with a definite beginning and end, undertaken to create a unique product or service.
Quality Index	A measure computed based on the Contractor's performance on project-specific quality goals defined and weighted by the Owner Agency.
Request for Proposals	A public announcement soliciting proposals, generally describing the project to be constructed, how to obtain the plans, specifications, proposals instructions, evaluation factors and instructions for proposal delivery.

Term	Definition
Special Experimental Project Number 14	A program that provides the State DOTs with a vehicle for evaluating various types of non-traditional contracting on Federal-aid highway contracts. The objective is to evaluate project specific innovative contracting practices that have the potential to reduce the life cycle cost of projects, while maintaining product quality.
Speed Band	A safety surrogate measure designed to promote monitoring and enforcement innovations by the contractor in an effort to keep drivers safely within a defined set of speeds.
Stopped Queue	Traffic speed is less than 10 miles per hour.

Executive Summary

State and Local Departments of Transportation (DOTs) need to deliver quality, timely construction projects under constrained budgets and high expectations from the traveling public.

A strength of the private sector is applying new and innovative techniques to solve problems. However, in highway construction, a contractor's ability to innovate is usually constrained by the project design, detailed standard specifications, and a low bid environment, all of which are in place to protect the agency and to ensure quality.

Performance contracting is an alternative contracting technique, under which DOTs specify performance goals (desired outcomes), and contractors receive the flexibility to propose and apply innovations to meet those goals. It is designed to enhance cooperation and problem solving between the owner agency and contractor as partners, and to ensure that the owner agency achieves its desired outcomes for the project.

Under performance contracting, the agency can clearly communicate to the contractor what they are trying to achieve with the project, and the contractor shares the risks and rewards through incentives and disincentives.

FHWA originally developed this Guide in 2006. This 2012 update includes lessons learned and sample materials from a successful pilot project conducted by the Michigan Department of Transportation.

Objective

The objective of this effort was to develop a performance contracting guide for a typical reconstruction/rehabilitation project. Performance contracting is becoming more and more prevalent in today's society, and this Guide should help to encourage its successful application in the transportation construction industry. The Guide is provided as a tool for owner agencies wanting to implement performance contracting for their construction projects, and it includes recommended processes and sample materials for:

- Project Selection
- Performance Goals
- Measurement Methodology (and associated incentive/disincentive fee structure)
- Sample Enhanced Low Bid and Best Value Awards
- SEP-14 Applications

The Guide is meant to be a used as a reference. It should help owner agencies to accelerate the solicitation development process and help them to avoid common obstacles and pitfalls.

The effort also produced a bibliography of sources (available separately) related to performance contracting. This bibliography will be valuable for stakeholders who wish to broaden their knowledge on the subject and for agencies wishing to implement performance contracting.

Stakeholder Involvement

The project team received input and guidance from a select group of stakeholders from State DOTs and industry. This group was key to the success of the project, because the discussions focused on making the Guide's materials implementable in the real world for both owner agencies and contractors.

What We Have Learned

- The performance contracting concept is applicable in the construction environment.
- For this concept to work for the construction phase, the construction contractor must have flexibility in how they perform the work. Without this flexibility, the construction contractor cannot be expected to meet the performance goals.
- Each project will be different. Therefore, the Guide provides recommended procedures for contract development as well as sample materials that can be used to accelerate the process. However, the Owner Agency will need to tailor the processes and materials to their individual application.
- Performance goals should be SMART – Specific, Measurable, Achievable, Results-Oriented, and have a Time element.
- Performance goals must be under the influence of the construction contractor.
- The Michigan pilot project was highly successful and resulted in significant innovation and quantified benefits.
- The concepts presented here on developing performance goals and measuring performance against them are highly relevant to Design-Build project goals and other innovative contracting techniques that are centered around the contractor meeting goals.

For Additional Information

Contact Gerald.Yakowenko@dot.gov

Introduction

Much of America's transportation infrastructure is reaching the end of its design life and needs to be reconstructed. At the same time, traffic levels and the resulting congestion levels continue to increase steadily. These two factors combined pose a significant challenge to State Departments of Transportation (DOTs) and the Federal Highway Administration (FHWA). To address this challenge, FHWA has been working with State DOTs and industry to develop a "toolbox" of potential solutions. One tool in this toolbox is performance contracting.

Performance contracting is an approach where a private contractor is responsible for achieving a defined set of goals, and where performance goals are specified instead of methods. Using a performance contracting approach will allow owner agencies to define and communicate to construction contractors specifically what they and FHWA want to achieve in their construction projects.

The construction contractors on performance contracts should share the risks and rewards as a project partner, and defined performance goals and measurement methodologies will provide a basis for applying incentives and disincentives. However, it must be stressed that for a performance contract to be successful, the contractor must be provided with flexibility on how to perform the work and the performance goals must be under the control/influence of the contractor.

Guide Purpose and Contents

FHWA has been working over the past 15 years on evaluating alternative contracting procedures under the Special Experimental Projects No. 14 (SEP-14) program. These procedures, which include performance contracting, incentives/disincentives, and Best Value awards, have resulted in time/cost savings and improved contract management. FHWA anticipates that the use of these procedures will expand greatly in the future as a means of addressing current challenges.

The purpose of this Guide is to provide States with processes and materials that they can use to accelerate the development of a performance contract solicitation package for construction contracts. These materials will be the basis on which the Owner Agency develops their approach.

The Guide includes processes and sample materials for:

- Project Selection
- Performance Goals
- Performance Measurement Methodologies
- Enhanced Low Bid Awards
- Best Value Awards, and
- SEP-14 Applications.

It should be noted that the Guide focuses on processes and materials that would be different than those used for traditional low-bid construction contracts.

The Guide is meant to be a used as a reference guide, with a process and sample materials for each major section.

A bibliography of sources related to performance contracting is available as a separate document. In developing the Guide, the project team found these sources to be useful, and they should prove to be valuable for stakeholders who wish to broaden their knowledge on the subject and for agencies wishing to implement performance contracts.

FHWA originally developed this Guide in 2006. This 2012 update includes lessons learned and sample materials from a successful pilot project performed by the Michigan Department of Transportation. We have included this additional information in text boxes to allow easy identification.

Relation to the Highways for LIFE Program

FHWA has implemented a program called Highways for LIFE (HfL). The mission of the program is to improve the driving experience of the American public. HfL is accomplishing the program's mission by accelerating the adoption of innovations and technologies thereby improving safety and highway quality while reducing congestion caused by construction.

HfL is looking for new ways to build highways and bridges safer, faster, better, and less costly. The program looks beyond the conventional practice of what we build, how we build, what we build with, how we finance, how we contract, and how we do business. One method of achieving the program's mission is by setting a higher bar of performance goals for the HfL demonstration projects. Performance goals provide a way to identify the desired outcome but allow for innovation and creativity. Performance goals provide a uniform basis for evaluating the degree to which HfL projects are successful in achieving desired outcomes and the effectiveness of the technologies and innovations used on the project.

HfL has set high level performance goals in the areas of:

- Improving safety
- Reducing congestion due to construction
- Improving quality, and
- Improving user satisfaction.

Because the HfL program is goal-driven, performance contracting represents a means of defining project-specific goals, reallocating some of the risk for meeting those goals to the contractor, and measuring performance against the defined goals. Performance contracting will be a tool in the HfL toolbox, but HfL projects are not required to use it. However, additional consideration will be given to projects that propose to use performance contracting to achieve the HfL performance goals. HfL believes performance contracting is a significant advancement in facilitating the application of innovation. It allows significant flexibility in selecting the approach best suited to providing the level of performance expected without defining how to obtain it.

For those HfL projects that do use performance contracting, the Guide will also help to provide a consistent basis of measurement for use at the program level. A briefing and

hands-on technical support on performance contracting will be provided to any DOT/division office upon request (Contact Gerald.Yakowenko@dot.gov).

Guide Development

The project team developed the Guide materials working with subject matter experts at FHWA and a select group of stakeholders from State DOTs and industry. The FWHA subject matter experts provided inputs and guidance on material and processes at the development stage. The stakeholder group provided valuable review comments and guidance at the 30%, 60%, and 90% completion stages.

The State and industry stakeholder group included:

- Scott Jarvis from Caltrans
- Chuck Suszko from Caltrans
- Gene Mallette, Caltrans
- Peggy Chandler from Texas DOT
- Steve DeWitt from North Carolina DOT
- Kevin Dayton from Washington State DOT
- Dexter Newman from the Kentucky Cabinet
- Sid Scott from Trauner Consulting
- Brian Deery from AGC
- Bob Lanham from Williams Brothers Construction, and
- Brian Burgett from Kokosing Construction.

The FHWA subject-matter experts included:

- Jim Sorenson
- Mary Huie
- Byron Lord
- Ken Jacoby
- King Gee
- Jerry Yakowenko
- Tracy Scriba
- Chung Eng
- Rudy Umbs
- John Baxter
- Mark Swanlund
- Peter Kopac
- Christopher Schneider
- David Geiger
- Tom Deddens
- Gus Shanine
- Rob Elliott
- Evan Wisniewski
- Jim Hatter
- John Bukowski
- Fred Skaer
- Shari Schaftlein
- Myint Lwin
- And others.

The project team extends a sincere thank you to all those who provided input and guidance. Participation did not involve formal endorsement of the final product.

With respect to the 2012 update, the project team extends a sincere thank you to the Michigan Department of Transportation (MDOT) and its project team, both for their creativity in applying the Guide concepts to their M-115 project, and for providing us with the Request for Proposal materials for use in this update.

Roadmap to the Guide

The Guide begins with a discussion of the overall performance contract development process, and then includes individual sections on:

- Project Selection
- Performance Goals
- Measurement Methodology
- Enhanced Low Bid Award Process
- Best Value Award Process, and
- SEP-14 Process.

Each section describes (as applicable) a suggested process to follow, presents lessons learned from real-world contracts, and provides sample materials for the solicitation package.

The reader should start with the overall process and project selection sections. If the reader determines that the project they are considering is a candidate for performance contracting, they should then move to the Performance Goals section, then to the Measurement Methodology section, then to the appropriate Award Process section, and finally to the SEP-14 section. The reader should note that a number of portions of the sample materials are highlighted to represent values that may need to change for the individual project.

Overall Process

To successfully develop and implement a performance contract for a construction project takes a number of steps. An overview of the steps is shown in the figure below.

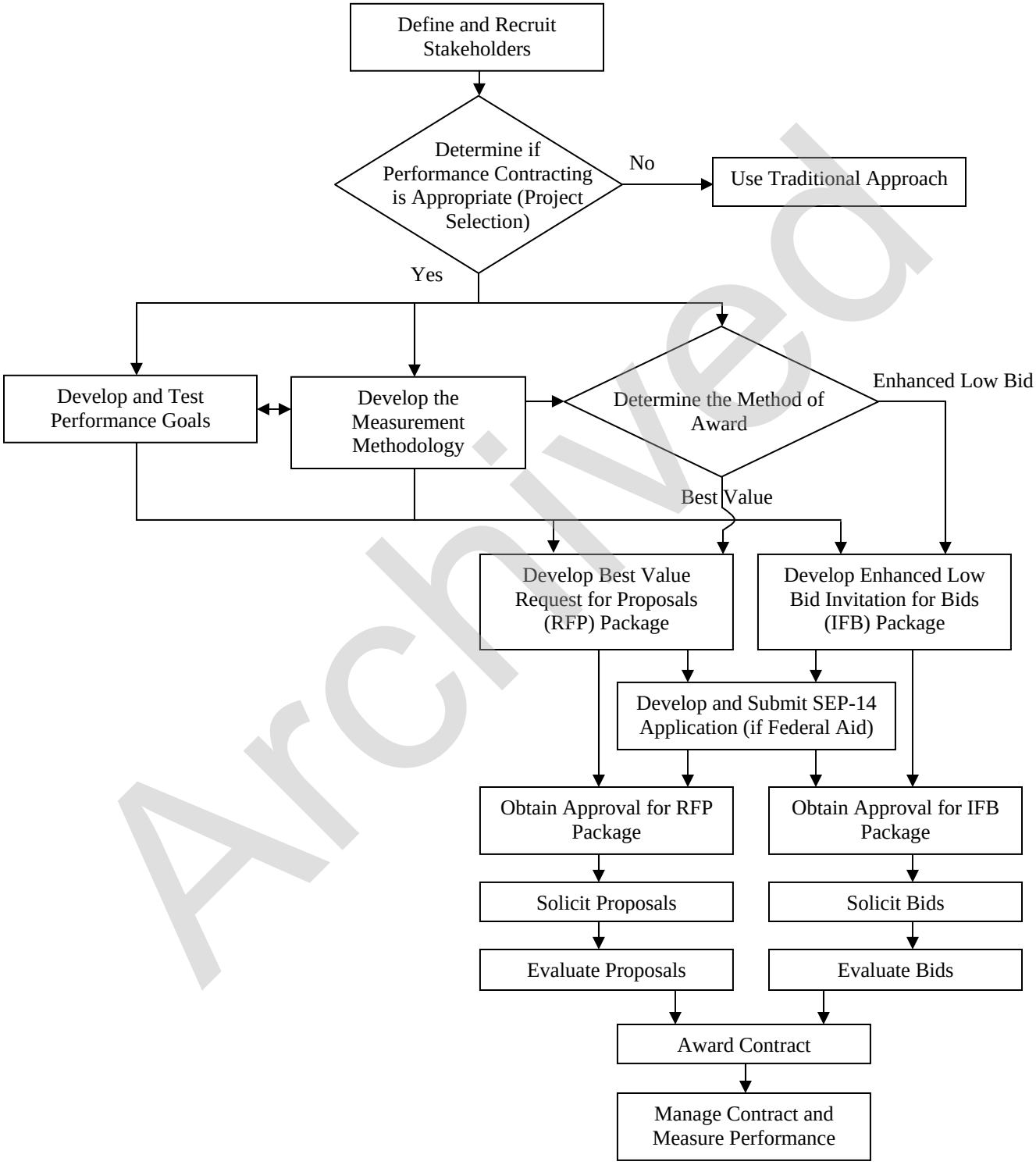


Figure 1. Overall Process for Performance Contract Development

Defining and Recruiting the Stakeholders

Developing a performance contract should not be left to one person within an organization. The Owner Agency should identify the appropriate stakeholders, recruit them for the effort, and keep them involved as the solicitation package is developed, refined, and finalized. By involving the various stakeholders throughout the process, the Owner Agency will help to ensure buy-in and approval of the end product.

Stakeholders at a minimum should include:

- The Project Manager/Project Engineer/Contracting Officer's Technical Representative for the project
- A representative from each office/department that will be impacted by the project
- A representative from the contracts/procurement office
- A representative from the FHWA Division Office
- A representative from the contracting industry, and
- A representative from the consulting industry.

***MDOT M-115 Pilot Project**: Michigan formed a committee to select, develop, award, and oversee the project. These stakeholders included upper management, the project engineer, representatives from appropriate offices throughout MDOT, and the Michigan FHWA Division Office. MDOT also worked with a local contracting industry organization to get feedback on the approach.*

A note of caution is that the representatives from the contracting and consulting industries may become ineligible to bid/propose on the project due to their involvement in the solicitation development. However, by working with appropriate industry organizations to receive the inputs and review feedback, the Owner Agency will get the value of the input without precluding individual private organizations from bidding.

Project Selection

It is important to determine whether the contracting environment and the individual project are suitable for performance contracting. Performance contracting will not be appropriate for all agencies and for all projects. This topic is covered in the Project Selection section of this Guide.

Developing and Testing the Performance Goals

The basis of any performance contract is the set of performance goals that defines what the contractor is to achieve under the contract. Developing these goals is an iterative process, and the goals should be tested before being finalized. This topic is covered in the Performance Goals section of this Guide.

Developing the Measurement Methodology

If you set goals, you need to measure performance against those goals to determine to what extent they were met. The measurement methodology will define what gets measured by whom and when, as well as what to do with the results. This topic is covered in the Performance Measurement Methodology Section of this Guide.

Determining the Method of Award and Developing the Solicitation Packages

Traditional low bid is not optimal for Performance Contracting, since it does not typically allow for flexibility and consideration of the offeror's technical approach. If at all possible, the Owner Agency should utilize a Best Value award process, or an Enhanced Low Bid award process. These processes and sample materials for solicitation development are provided in the Best Value and Enhanced Low Bid Sections of this Guide.

Developing and Submitting an SEP-14 Application

Because performance contracting is an innovative contracting approach that typically includes incentives/disincentives and that is not typically awarded under traditional low-bid, it requires special approval under SEP-14. Obtaining this approval is not a daunting task, and a process and sample materials are provided under the SEP-14 Section of this Guide.

Managing the Contract and Measuring Performance

Once the Owner Agency and the selected contractor have signed the contract, the Owner Agency must oversee the contract and measure performance according to the procedures defined in the contract. Performance contracting requires many of the same resources as a traditional contract (engineers, managers, inspectors), but it also requires potentially specialized resources to measure performance against the performance goals. The Owner Agency must ensure that it has adequate resources in place to develop and award the contract and to determine if the contractor is meeting the project goals and the conditions of the contract.

***MDOT M-115 Pilot Project**: For the pilot project, safety, construction congestion, quality, and user satisfaction data were collected before, during, and after construction to demonstrate that PCfC can be used to achieve the HfL performance goals in these areas.*

Because many of the specialized resources are only required on a periodic basis (for example, pavement testing equipment) the Owner Agency may wish to hire a consultant to provide these resources. The Owner Agency can make an initial determination of the resources needed, and then adjust as needed over the course of the contract.

One key to the success of all performance contracts is effective communication between the project stakeholders. One means of facilitating this communication is formal project partnering.

Formal Project Partnering

Due to the sharing of risk and reward between the Owner Agency and the contractor, performance contracts are a form of public-private partnership. Formal project partnering provides a mechanism for facilitated discussions in a neutral environment. It allows the definition and tracking of important unwritten project goals, and it establishes a method of resolving disputes before the contract terms and conditions come into play.

Used properly, formal partnering can be a key tool in solving problems quickly and fairly. It really is the key to success for asset management contracts, and its use should be seriously considered for any performance contract.

Sample wording for the solicitation package is included below.

Sample Contract Language for Formal Project Partnering

The following wording is a sample of RFP/IFB wording for requiring formal project partnering.

"The Contractor shall actively participate in formal project partnering with the *Owner Agency* and other parties involved. Under this partnering provision, *the Owner Agency* and the Contractor shall meet at a neutral location to discuss project goals and issues in a facilitated environment. *The Owner Agency* and the Contractor shall also establish their project-level dispute resolution hierarchy of personnel at the initial session. This hierarchy shall allow *the Owner Agency* and the Contractor to try to work out disputes at the project level before considering enacting the disputes clause. An experienced professional partnering facilitator shall facilitate the partnering sessions. These sessions can be very helpful in establishing strategies for meeting the performance goals, and in removing barriers to meeting the performance goals. *The Owner Agency* and the Contractor shall establish high-level project goals during this process. It is anticipated that an initial full-day session shall be held, followed by regularly scheduled follow-on half-day sessions. These follow-on sessions shall be held approximately every 4-6 months. The Contractor and *the Owner Agency* shall agree on the facilitator, and shall share partnering costs equally. *The Owner Agency's* obligations for partnering include actively participating in the formal project partnering meetings, and paying half of the facilitator and facility costs. The cap for *the Owner Agency's* monetary obligation for this process is $30,000. The Contractor's obligations for partnering include actively participating in the formal project partnering meetings, and paying half of the facilitator and facility costs. In the event that a dispute cannot be solved through the project-level dispute resolution hierarchy, it shall be subject to the disputes clause."

Project Selection

Performance contracting is not ideal for every construction contract. However, it may hold significant advantages over traditional contracting when the following conditions are met:

- The Owner Agency and the local contractor community support the concept
- Both the Owner Agency and the contractors are educated on the risks, the rewards, and the rules
- The project is goal oriented, and the goals are under the influence of the contractor
- The risks are balanced by adequate rewards
- The contractor will be allowed to be flexible in their approach
- The Owner Agency has adequate resources available for performance measurement
- The Owner Agency can legally use an award process other than traditional low-bid, and
- The Owner Agency has sufficient time for contract development.

***MDOT M-115 Pilot Project**: The pilot project was a rural 5.56-mile two-lane highway. The pavement was in poor condition and the two bridges located within the length of the project needed significant reconstruction. The total amount of the project was close to $3.8M.*

One myth is that the construction project has to be large to fit under performance contracting. This is not true. This Guide can be applied to any size contract, and the work can be performed by any appropriately sized contractor.

The Owner Agency should hold an initial conversation with stakeholders and then decide whether the project is suitable for performance contracting. A sample project selection process for use in this conversation is shown in Figure 2.

Pros and Cons of Performance Contracting

There are a number of pros and cons of performance contracting that owner agencies need to be aware of. Pros include:

- Defined outcomes
- Immediate response to safety-critical problems
- Contractor flexibility and the introduction of innovation
- Contractor incentives for taking on the risk of meeting the defined outcomes.
- Project disputes are solved primarily through partnering instead of Contract Appeals Boards.

Cons include:

- Desired results might not be achieved if the performance goals do not fully or adequately describe the desired outcomes
- Resources are required to monitor and measure performance to make sure that goals are being met and that you are getting your money's worth

Outreach is needed to get both Owner Agency and contractor personnel familiar with the concept, the risks, and the rewards.

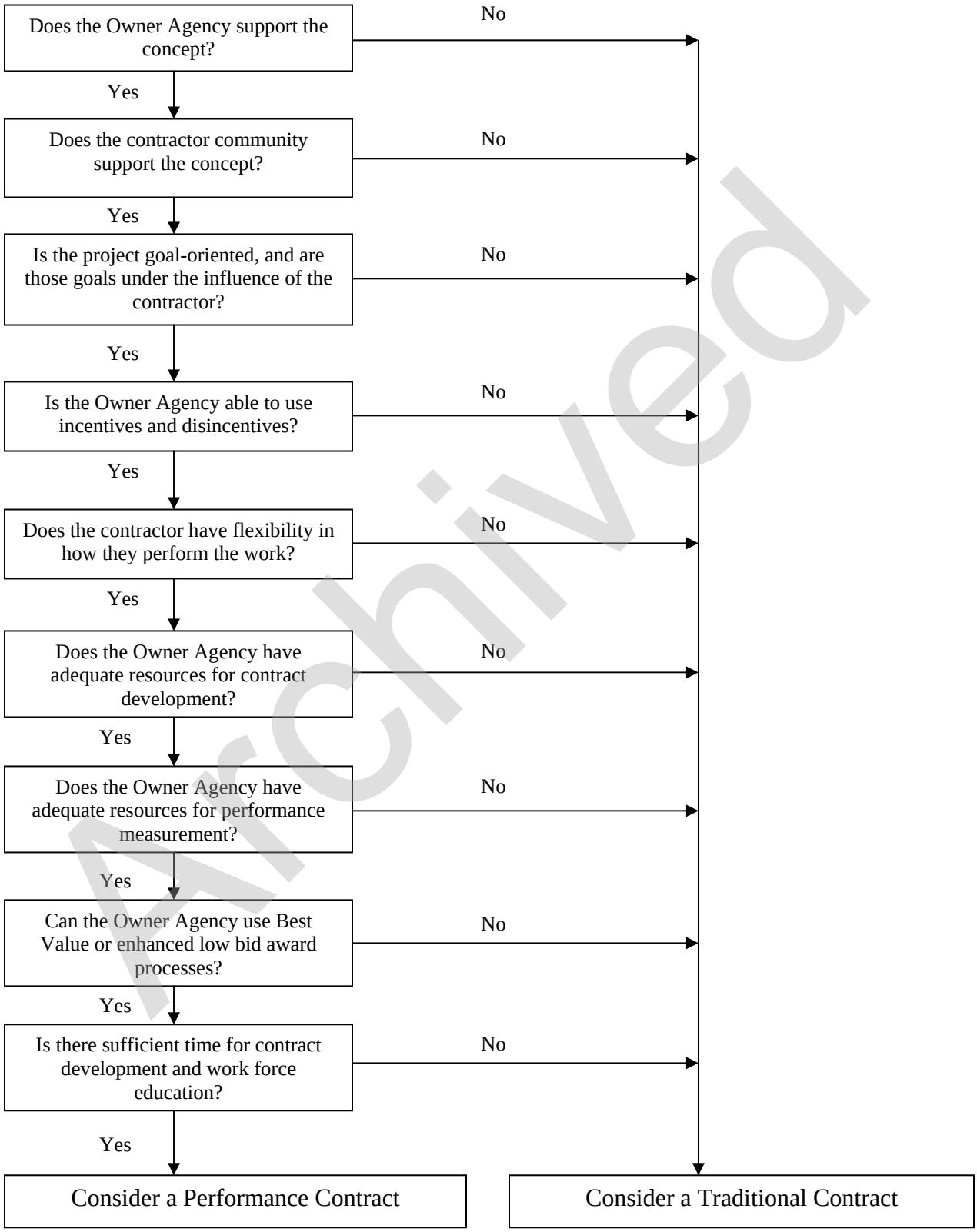


Figure 2. Sample Project Selection Decision Tree

Innovation and Value Engineering

Performance contracting is based on allowing the contractor to have flexibility in how it performs the work. This flexibility often takes the form of introducing innovative practices/technologies and/or introducing new/different approaches through the value engineering process.

For performance-contracting to be successful, the Owner Agency must cultivate an environment for innovation and remain open to new ideas, both at the proposal/bid stage, and throughout the contract. However, in the interest of public trust, the Owner Agency must ensure that the innovations/new ideas are suitable for use and will result in acceptable quality. To accomplish this, the Owner Agency should set up a formal procedure for reviewing/approving innovations and value engineering proposals. A sample procedure is provided below.

***MDOT M-115 Pilot Project**: To minimize motorist delays, the contractor proposed and built an 11-foot (ft) wide temporary traffic lane that was not part of MDOT's original plans. This lane provided two-way traffic during major construction stages in addition to 24-hour roadside patrol within the construction zone.*

Sample Procedure/Contract Language for Approval of Innovations

The following wording is a sample of RFP wording that describes one approach to the approval of innovations.

"All work performed under this contract must meet or exceed the standards contained in the *Owner Agency's Standard Specifications*, where applicable. Contractors are highly encouraged, however, to propose new and innovative technologies, processes, and materials that may not be encompassed within the *Standard Specifications* or the *Standard Design Manual*. These innovations must be highlighted in the Contractor's Quality Control/Quality Assurance plan and in the Contractor's Work Plan. Innovations that are standard practices in industry, or that are used by other States have a strong chance of approval.

Prior to the installation or deployment of any innovation, the Contractor must request and receive the Contracting Officer's approval. To facilitate this approval, Contractors must provide assurances to the Contracting Officer's Technical Representative (COTR) that performance goals shall be achieved or exceeded. The *Owner Agency* may ask the Contractor to make an oral presentation on the innovation to a panel of *Owner Agency* employees. The Contractor shall provide the following information to the COTR regarding all proposed innovations:

A. The purpose of the proposed innovation;

B. Advantages/disadvantages of the proposed innovation;

C. Impact on cost and service life (i.e. life cycle costs) over the project life;

D. Use or application in similar successful situations or conditions;

E. Detailed specifications (where appropriate) or other data that shall assist the COTR in evaluating the potential innovation and its potential use in the project, and

F. Other States/localities that are using the innovation and its' effectiveness in those locations."

Performance Goals

Process

The basis of any performance contract is the set of performance goals that defines what the contractor is to achieve under the contract. Development of these goals is time-consuming, and needs to be a group activity within the agency. A goal development process is described in the figure and subsections below.

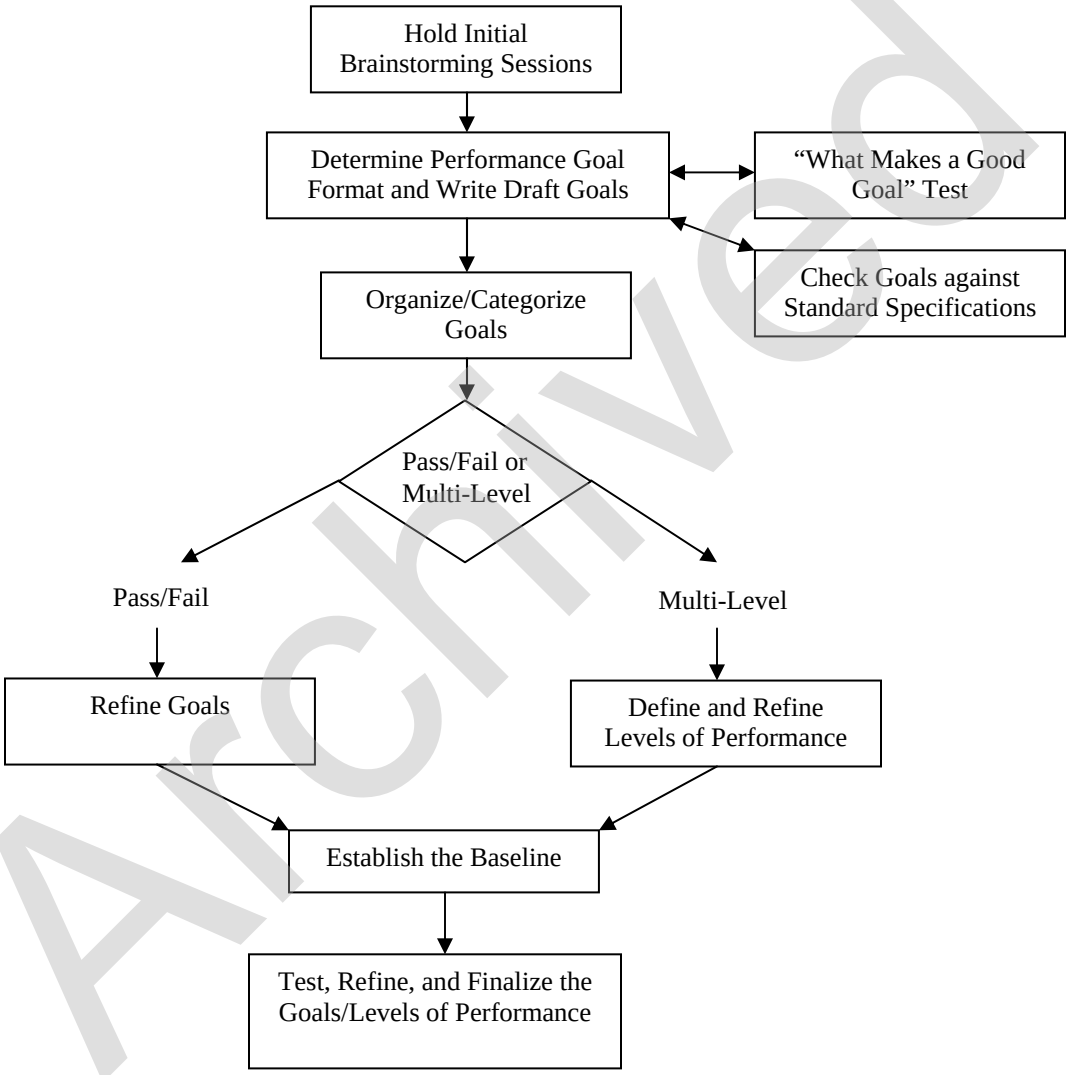


Figure 3. Process for Defining the Performance Goals and Measures

The project team followed a similar process (with the exception of not performing the final two steps) to develop a sample set of performance measures and goals. This sample set of goals is presented in the Sample Materials section following the description of the process.

Initial Brainstorming Sessions - What is the Owner Agency Trying to Achieve with This Project?

In defining performance goals, the first internal stakeholder brainstorming session should be focused on defining what the Owner Agency is trying to achieve with the specific project.

For HfL efforts, the general goals have already been defined at a high level. These include improving safety, reducing congestion due to construction, improving quality, and improving user satisfaction. However, the challenge here is to define the specific goals that the Owner Agency will use to judge success on its project.

In performing this step, the Owner Agency should cast a broad net in the brainstorming session and keep asking, "What have we missed?" The Owner Agency should document all of the ideas that are put on the table, whether or not they seem like good ideas at the time. As the Owner Agency moves through the process, it can always discard ideas that do not fit.

***MDOT M-115 Pilot Project**: The performance goals for the project focused on what the agency and stakeholders wanted the project to achieve in the following categories: date open to traffic, construction and cleanup completion, pavement performance, worker safety during construction, work zone crashes, and motorist delay.*

The brainstorming ideas at this stage will form the basis of the performance goals. Remember to focus on WHAT to achieve, not HOW to achieve it. The HOW will be up to the contractor to determine.

Goal Format and Writing

Once the Owner Agency has its goal ideas from the initial brainstorming session, the Owner Agency needs to consider a number of format issues for turning the ideas into goals. The first is whether the goal set should be detailed or higher-level general goals. The Owner Agency would go the detailed route if it is looking to drive the contractor's work plan at the detailed level. The Owner Agency will have a good idea from the brainstorming session which way to go. If the Owner Agency had many detailed ideas, it would likely go the detailed route. If the Owner Agency had more general ideas, it would go the higher-level general route.

The next issue is whether the Owner Agency should make the goals subjective or objective. Objective goals are generally preferable, especially if there is a national standard process available for measuring performance. Some goals, however, will need to be subjective. That is fine as long as the rating/scoring process is well defined. This will protect both the contractor and the Owner Agency.

What Makes a Good Goal?

Once the Owner Agency has its draft goals down on paper, the question to ask for each goal is, "Am I SMART?" The acronym is as follows:

- I – Is the goal something that the contractor can influence?
- S – Is the goal specific?
- M – Is the goal measurable?

- A – Is the goal achievable?
- R – Is the goal results-oriented?
- T – Does the goal have a time element?

If the answer is yes to each of these questions for a draft goal, then the goal is likely a good one. If the answer is no, consider revising the goal into a different form or deleting the goal.

Two other questions to ask include:

- Has the goal ever been measured before?
- Is there existing infrastructure in place to measure performance?

These last two questions are not go/no go questions, but the answers can impact the amount of effort needed to evaluate performance.

The Owner Agency will also need to make sure that the goals do not conflict with their standard specifications. If they do, the Owner Agency can modify the standard specification language in the solicitation package.

Organizing/Categorizing Goals

Once the Owner Agency has its draft set of goals, the Owner Agency needs to consider how to organize/categorize the goals. A good way to categorize the goals is by benefit category such as safety, construction congestion, quality, user satisfaction, etc. Another way is to categorize by infrastructure type.

The Owner Agency should place the goals into the various categories, and generate new categories for any goals that do not fit.

Performance Measures vs. Performance Goals vs. Levels of Performance

First, here are some definitions:

- A performance measure is a set of defined outcome-based conditions or response times that project personnel (Owner Agency and contractor) use to evaluate the success of the contractor.
- A level of performance is a defined condition or response time.
- A performance goal is the minimum acceptable level of performance for a given performance measure.

The Owner Agency will need to decide whether it will use pass/fail performance goals or multi-level performance measures.

Pass/fail goals are easier to define, but do not provide as much information on performance. For example, did the contractor just fail the goal or did they badly fail? Did they just pass another goal, or did they truly go the extra mile and exceed the requirement?

If the Owner Agency uses pass/fail performance goals, then the "performance measure" and the "performance goal" are the same thing. If the Owner Agency uses multi-level performance measures, then the measure will include multiple levels of performance. A level of performance is a defined condition or response time. In the multi-level case, the performance goal is the level of performance that is considered a "pass."

If the Owner Agency chooses the multi-level route, the "goal" remains the passing level, and the Owner Agency defines "levels of performance" for the other levels. The Owner Agency will want to make sure that no matter what the outcome, it will fall in to one of the levels of performance. Thus the highest level and lowest level should only have one threshold boundary. The Owner Agency should consider defining a "rejection" level to specify at what level the work is rejected and must be re-done.

The set of "levels of performance" including the "goal" makes up the performance measure. If the Owner Agency chooses the pass/fail route, then they can just stick with the goal.

Establishing the Baseline and Testing the Goals

A large part of determining whether a draft performance goal is achievable – both from the Owner Agency's perspective as well as from the contractor's perspective - is to compare it to the baseline conditions. For example, if the site is experiencing heavy congestion now with no construction in place, it is likely unreasonable to set a goal of no congestion during the construction period. The Owner Agency should compare each goal against the baseline conditions and results achieved in other innovative projects. If the goal seems unreasonable, the Owner Agency should adjust it.

***MDOT M-115 Pilot Project**:*

MDOT administered a customer survey before the start of construction to record the overall satisfaction of the public with the actual conditions of the road. MDOT administered the same survey at project completion. Other pre-construction measurements were: noise levels (OBSI) and pavement smoothness (IRI).

Defining/determining the baseline conditions can involve using available historical information such as crash rates at the site or field data collection to determine current traffic patterns. This will cost money and time, but the information has multiple uses. By providing this baseline information to the contractors as part of the solicitation package, it helps them to better establish their risk level, which helps to get a more accurate price. The Owner Agency will also need this baseline information during the contract to measure performance for some of the defined goals. A number of goals in the sample materials provided in the following section compare performance to "pre-construction" conditions at the site.

Lessons Learned from Real-World Performance Contracts

The following lessons have been learned in real-world performance contracts:

- The goals MUST be something that the contractor can influence.
- Take advantage of the experience of others – do not start from scratch
- Identify the PM/PE/COTR and involve him/her throughout the entire process
- Performance goals form the basis of the contract

- Sources of performance measures and goals include:
    - Agency Goals
    - Common industry standards
    - Research
    - Measures/standards from other agencies/contracts
    - Subject matter experts
    - Brainstorming/working sessions
- Make sure that you cover everything
- Focus on what to achieve, not how to achieve it
- Include time-response goals as appropriate
- 5-level measures are more informative than pass/fail measures
- Consider the possibility of using surrogate measures if the primary measure is not practical to measure in a timely manner
- Test the goals in the field before advertising your RFP/IFB
- When nearing completion of the draft set of measures/goals, it is important to sit back and think, "What have we missed?"
- Defining performance measures/goals is an iterative process
- Getting reviews/approval/buy-in from the offices that will be impacted is very important
- Clearly define what it means to meet the performance goals
- When developing performance goals, it is important to consider how they will be measured/ evaluated and define this in the solicitation. These issues are primarily covered under measurement methodology.
    - Who will collect and analyze the information?
    - Is specialized equipment required?
    - How often will performance be evaluated?
    - Will the evaluation be subjective or objective?
    - Who pays?
    - What happens if a performance goal is not met?
- Total Quality Management and the Environmental Management System are both aimed at creating measures for performance. Expertise and experience in these arenas could help in performance contracting.

Sample Performance Measures

The following table provides a sample menu of performance measures developed for use on construction projects. This set is largely focused around the overall Highways for LIFE goal set. Each agency will need to develop a set of goals that suits their specific project. This sample menu will provide a head start, and will help to accelerate the process.

The sample performance measures are categorized by benefit category (i.e., safety, construction congestion, quality, time, cost savings, customer focus/user satisfaction, environmental, and innovation), and each performance measure has 5 levels of performance. The "Good" or "4" level is the performance goal, or "pass," which denotes the acceptable level of performance.

For general construction projects, and for HfL projects using performance contracting, owner agencies are encouraged to use this sample set of performance measures as a starting menu, and to develop their project performance measures and goals using a subset of these sample measures and goals. **All numbers/values presented are samples and must be set to appropriate levels for the locality and the specific project.** Owner agencies should also pay close attention to the "Notes" column for each performance measure for important information on each measure.

This sample set of performance measure and goals should greatly accelerate the process of performance measure and goal definition, because the Owner Agency will not need to start from scratch.

One item to stress is that whatever goals are chosen, they must be under the influence of the contractor for that specific contract.

Table 1. Sample Performance Measure/Goal Menu

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
Safety	◆ Injuries – (Workers) Contractor / Sub-Contractors on site personnel, Government representatives, Consultant, Vendors, Delivery Personnel	1	Incident Rate (IR) for Worker injuries is less than 2.0	Incident Rate (IR) for Worker injuries is less than 4.0	Incident Rate (IR) for Worker injuries is less than 5.5	Incident Rate (IR) for Worker injuries is less than 6.5	Incident Rate (IR) for Worker injuries is greater than 6.5	a. Each State Agency shall establish a target Incident Rate to be used for each project based on local and Statewide available Incident Rate data analysis. The shown Incident Rates are shown as an example.
	◆ Vehicular Crashes	2	Site Crash Rate during construction divided by the Crash Rate prior to construction is less 1.0	Site Crash Rate during construction divided by the Crash Rate prior to construction is equal to 1.0	Site Crash Rate during construction divided by the Crash Rate prior to construction is less than 1.2	Site Crash Rate during construction divided by the Crash Rate prior to construction is less than 1.3	Site Crash Rate during construction divided by the Crash Rate prior to construction is equal to or greater than 1.3	a. Each State Agency / Contractor shall record the Crash Rate during construction. For long term projects, the annual Crash Rate during construction should be used and divided by the Crash Rate prior to construction. For short term projects, the overall Crash Rate during construction should be used. b. The "Site" extends upstream of the work zone, since crashes often happen upstream of the work zone due to queuing. c. Disincentives should not be applied to this Performance Measure.
	OR							
	◆ Vehicular Crashes	3	Work zone crash rate 20% less than pre-construction crash rate	Work zone crash rate equal to pre-construction crash rate	Work zone crash rate 20% higher than pre-construction crash rate	Work zone crash rate 30% higher than pre-construction crash rate	Work zone crash rate more than 30% higher than pre-construction crash rate	a. Each State Agency / Contractor shall record the work zone Crash Rate during construction. For long term projects the annual work zone Crash Rate during construction should be used for comparison with the Crash Rate prior to construction. For short term projects the overall work zone Crash Rate during construction should be used. b. Disincentives should not be applied to this Performance Measure.
	◆ Speed Band	4	95% of the motorists travel at the posted speed limit or less	85% of the motorists travel at the posted speed limit or less	75% of the motorists travel at the posted speed limit or less	65% of the motorists travel at the posted speed limit or less	Less than 65% of the motorists travel at the posted speed limit or less	a. The speed band category was added to promote monitoring and enforcement innovations by the contractor in an effort to keep the drivers safely within the speed band. b. For the contractor to implement enforcement activities, the contractor may need to work through the DOT.

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
		AND						
		5	No one travels more than 10 mph over the posted speed limit.	No one travels more than 15 mph over the posted speed limit.	Less than 5% of drivers travel more than 20 mph over the posted speed limit.	Less than 10% of drivers travel more than 20 mph over the posted speed limit.	More than 10% of drivers travel more than 20 mph over the posted speed limit.	a. This measure was added to promote monitoring and enforcement innovations by the contractor in an effort to keep the drivers safely within the speed band. b. For the contractor to implement enforcement activities, the contractor may need to work through the DOT. c. Level 5, as presented, may not be achievable. The Owner Agency has the flexibility to adjust these parameters because they may not be realistic for some situations.
Construction Congestion	◆ Travel time/delay during construction	6	No motorist delay (as compared to pre-construction travel time)	Rural: Average motorist delay less than 15 minutes (as compared to pre-construction travel time) Urban: Average motorist delay less than 20 minutes (as compared to pre-construction travel time)	Rural: Average motorist delay less than 20 minutes (as compared to pre-construction travel time) Urban: Average motorist delay less than 30 minutes (as compared to pre-construction travel time)	Rural: Average motorist delay less than 30 minutes (as compared to pre-construction travel time) Urban: Average motorist delay less than 45 minutes (as compared to pre-construction travel time)	Rural: Average motorist delay ≥30 minutes (as compared to pre-construction travel time) Urban: Average motorist delay ≥45 minutes (as compared to pre-construction travel time)	a. Specify days that are excluded– for example, holidays, weekends, etc., and whether the contractor can work on those days. b. Good baseline information is needed for this measure. c. Delay value can be scaled based on project/traffic characteristics d. If the Owner Agency is concerned with total delay to the public, then this measure also should be applied to the alternate routes.
		OR						
		7	Average travel time through the work zone is at least 10% less than the established target	Average travel time through the work zone is equal to or less than the established target	Average travel time through the work zone is 10% higher than the established target	Average travel time through the work zone is 20% higher than the established target	Average travel time through the work zone is greater than 20% higher than the established target	a. Specify days that are excluded– for example, holidays, weekends, etc., and whether the contractor can work on those days. b. Good baseline information is needed for this measure. c. The intent of this performance measure is not to encourage speeding. The Owner Agency must take this into account when setting the target.
		OR						

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
	◆ Queue Length During Construction	8	No queue	No stopped queue (speed less than 10 mph)	Rural: < ½ mile stopped queue (speed less than 10 mph) Urban: < 1 mile stopped queue (speed less than 10 mph)	Rural: <1 mile stopped queue (speed less than 10 mph) Urban: <2 mile stopped queue (speed less than 10 mph)	Rural: ≥1 mile stopped queue (speed less than 10 mph) Urban: ≥2 mile stopped queue (speed less than 10 mph)	a. Specify days that are excluded– for example, holidays, weekends, etc., and whether the contractor can work on those days. b. Might not be implementable for heavy traffic areas, as they may already be experiencing significant queues. c. Indicate allowable queue times to the contractor d. Specify if the contractor needs to take action if the queue goes above a specified level.
		9	No queue	Rural: < ½ mile moving queue (travel speed 20% less than posted speed) Urban: < 1 ½ mile moving queue (travel speed 20% less than posted speed)	Rural: < 1 ½ mile moving queue (travel speed 20% less than posted speed) Urban: < 2 mile moving queue (travel speed 20% less than posted speed)	Rural: < 2 mile moving queue (travel speed 20% less than posted speed) Urban: < 3 mile moving queue (travel speed 20% less than posted speed)	Rural: ≥ 2 mile moving queue (travel speed 20% less than posted speed) Urban: ≥ 3 mile moving queue (travel speed 20% less than posted speed)	a. Specify days that are excluded– for example, holidays, weekends, etc., and whether the contractor can work on those days. b. Might not be implementable for heavy traffic areas, as they may already be experiencing significant queues. c. Indicate allowable queue times to the contractor d. Specify if the contractor needs to take action if the queue goes above a specified level.
		OR						
		10	Peak period queue length is less than typical pre-construction peak period queue length	Peak period queue length is equal to typical pre-construction peak period queue length	Peak period queue length is 25% greater than the typical pre-construction peak period queue length	Peak period queue length is 50% greater than the typical pre-construction peak period queue length	Peak period queue length is more than 50% greater than the typical pre-construction peak period queue length	a. Specify days that are excluded– for example, holidays, weekends, etc., and whether the contractor can work on those days. b. Implementable for heavy traffic areas that may already be experiencing significant queues. c. Good baseline information is needed for this measure.

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
	◆ Incident Clearance Time	11	Non-injury incidents are cleared from the travel lanes within 15 minutes	Non-injury incidents are cleared from the travel lanes within 20 minutes	Non-injury incidents are cleared from the travel lanes within 30 minutes	Non-injury incidents are cleared from the travel lanes within 60 minutes	Non-injury incidents are not cleared from the travel lanes within 60 minutes	a. Specify days that are excluded– for example, holidays, weekends, etc. b. Need to contractually/legislatively ensure that contractor can clear the road c. Owner agency can pick the clearance times that are most appropriate for their locality d. Contractor and Owner Agency need to work closely with the appropriate law enforcement agency to establish protocols and to define responsibilities e. If incident clearance in the project locality is entirely the responsibility of law enforcement, then this PM should not be used.
	◆ Capacity	12	Capacity in the work zone [or work zone and alternate route(s)] during peak traffic periods is greater than or equal to the pre-construction capacity	Capacity in the work zone [or work zone and alternate route(s)] during peak traffic periods is greater than or equal to 90% of the pre-construction capacity	Capacity in the work zone [or work zone and alternate route(s)] during peak traffic periods is greater than or equal to 80% of the pre-construction capacity	Capacity in the work zone [or work zone and alternate route(s)] during peak traffic periods is greater than or equal to 70% of the pre-construction capacity	Capacity in the work zone [or work zone and alternate route(s)] during peak traffic periods is less than 70% of the pre-construction capacity	a. Good baseline information is needed for this measure. b. Applies to peak traffic periods only.

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
Quality	◆ Quality Index[1]	13	The Contractor achieves a Quality Index Score of 1.0	The Contractor achieves a Quality Index Score of 0.8	The Contractor achieves a Quality Index Score of 0.7	The Contractor achieves a Quality Index Score of 0.6	The Contractor achieves a Quality Index Score of less than 0.6	a. The Quality Index will be computed based on the Contractor's performance on project-specific quality goals defined and weighted by the Owner Agency. b. The index is not an override of whether the product is acceptable or unacceptable. c. The Quality Index score will range from 0 to 1.0 d. Example goals and topics that can be used to feed the quality index include: • Durability-related goals for various pavement types • Density and Mat uniformity • Embankment quality • Bridge quality • Others e. Different infrastructure components can have their own quality index, with an overall quality index computed through a weighted average (similar to the process described under the Measurement Methodology Section). f. Alternatively, the quality index can be the % of tests passed of an aggregate number of key tests. In this case, the value for level 4 should be increased and a rejection level defined. g. The Quality Index needs to be carefully considered, because you do not want a high index for a bad project.
	◆ Pavement Smoothness	14	Inertial Profile, IRI less than 45 inches per mile	Inertial Profile, IRI less than 48 inches per mile	Inertial Profile, IRI less than 60 inches per mile	Inertial Profile, IRI less than 80 inches per mile	Inertial Profile, IRI greater than or equal to 80 inches per mile	

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
	◆ Pavement Noise	15	Noise less than 94 dBA based on On-Board Sound Intensity (OBSI) Method	Noise less than 96 dBA based on OBSI Method	Noise less than 100 dBA based on OBSI Method	Noise less than 110 dBA based on OBSI Method	Noise greater than or equal to 110 dBA based on OBSI Method	
Time	◆ Overall Project schedule	16	Project completed ahead of the contract completion date by 20%	Project completed ahead of the contract completion date	Project completed on the contract completion date	Project completed 1 month after the contract completion date	Project completed more than 1 month after the contract completion date	a. Using this measure may discourage the contractor from submitting an aggressive schedule. b. Need to account for extra working days caused by the State. c. This measure fits well with A+B bidding, but if you have A+B, you might not need this measure. d. An agency can use liquidated damages for exceeding schedule, or no excuse bonus for completion ahead of schedule (Florida has a good example). e. The Contractor should beat his initial proposed time to work completion f. The designer should do a critical path analysis to get a more realistic completion date.
		17	Reduce contractor's actual days on the road by more than 20% compared to the State DOT MAX working days	Reduce contractor's actual days on the road by 20% compared to the State DOT MAX working days	Reduce contractor's actual days on the road by 10% compared to the working days	Contractor's actual days on the road is the same as the State DOT MAX working days	Contractor's actual days on the road is greater than the State DOT MAX working days	a. Need to account for extra working days caused by the State. b. The designer should do a critical path analysis to get a more realistic completion date.
	OR							

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
	◆ Schedule Improvements	18	Reduce working days to complete project by more than 20% when compared to the State DOT's MAX working days.	Reduce working days to complete project by 20% when compared to the State DOT's MAX working days.	Reduce working days to complete project by 10% when compared to the State DOT's MAX working days.	Project is completed in the same number of working days as the State DOT's MAX working days	Project takes more working days than the State DOT's MAX working days	a. "Excellent" can be changed to "on time" if accelerated delivery proposed. b. Need to account for extra working days caused by the State. c. The designer should do a critical path analysis to get a more realistic completion date. d. Some States use contract completion date instead of Max working days.
							OR	
		19	Achieve a score of <0.8 using the equation "Actual Working Days divided by State DOT MAX working days"	Achieve a score of < 1 using the equation "Actual Working Days divided by State DOT MAX working days"	Achieve a score between 1 and 1.1 using the equation "Actual Working Days divided by State DOT MAX working days"	Achieve a score of greater than 1.1 and less than 1.25 using the equation "Actual Working Days divided by State DOT MAX working days"	Score is greater than or equal to 1.25 using the equation "Actual Working Days divided by State DOT MAX working days"	a. Need to account for extra working days caused by the State. b. The designer should do a critical path analysis to get a more realistic completion date.
	◆ Scheduling Milestones	20	Complete all major milestones on time, some ahead of schedule	Complete all major milestones on time	Complete 80% of major milestones on time	Complete 50% of major milestones on time	Complete less than 50% of major milestones on time	
	◆ Scheduling	21	Work is performed 24/7 until the project is complete	No contract days where no work is being performed when work is able to be performed and traffic is impacted in the work zone	2 contract days where no work is being performed when work is able to be performed and traffic is impacted in the work zone	7 contract days where no work is being performed when work is able to be performed and traffic is impacted in the work zone	More than 7 contract days where no work is being performed when work is able to be performed and traffic is impacted in the work zone	

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
Cost Savings	◆ Contract cost savings due to value engineering	22	Reduce actual contract growth by achieving a score of <1 using the equation of final cost divided by original contract allotment	Eliminate actual contract growth by achieving a score of 1 using the equation of final cost divided by original contract allotment.	Minimize actual contract growth by achieving a score > 1 and ≤1.1 using the equation of final cost divided by original contract allotment.	Achieve a score > 1.1 and ≤1.25 using the equation of final cost divided by original contract allotment.	Actual contract growth is greater than 1.25 using the equation of final cost divided by original contract allotment.	a. Control overall costs through value engineering, improved proposals, etc. b. Create an environment where value engineering is encouraged. c. DOTs must be engaged in the design process; better plans will bring reduced prices. d. Cost growth issues due to design errors should not count against the contractor. e. Cost growth due to DOT changes should not count against the contractor
Customer Focus/ User Satisfaction	◆ Customer Satisfaction	23	Based on survey results, 95% of travelers were satisfied with their driving experience during the project	Based on survey results, 80% of travelers were satisfied with their driving experience during the project	Based on survey results, 70% of travelers were satisfied with their driving experience during the project	Based on survey results, 60% of travelers were satisfied with their driving experience during the project	Based on survey results, less than 60% of travelers were satisfied with their driving experience during the project	a. In the preliminary stages, involve customers (i.e., outreach, PR, communications via websites) b. Consider how often you want to survey the public; it may be costly to survey often, but you need a feedback mechanism (i.e., websites, call in numbers) c. Community opposition may be a factor for low scores; address opposition in partnering meetings
Environmental	◆ Watershed Quality Management	24	Reduce sediment loads to 10% less than the pre-construction conditions	Reduce sediment loads to 5% less than the pre-construction conditions	Control sediment loads to the level necessary to maintain the pre-construction conditions	Demonstrate an increase of sediment loads to 2% above the pre-construction conditions	Demonstrate an increase of sediment loads to >2% above the pre-construction conditions	
	◆ Recycling and Reuse	25	Capture and recycle/recover 100% of recyclable materials used on the project	Capture and recycle/recover 90% of recyclable materials used on the project	Capture and recycle/recover 80% of recyclable materials used on the project	Capture and recycle/recover 60% of recyclable materials used on the project	Capture and recycle/recover <60% of recyclable materials used on the project	a. Getting permits for recycling facilities in some areas may be challenging b. Reach for zero waste to avoid landfill use c. Spec would need to give flexibility to the contractor in picking materials

Category	Element	PM #	5 - Excellent	4 - Good	3 - Fair	2 - Poor	1 – Very Poor	Notes
	◆ Construction Noise	26	Noise due to construction work ≤ 90 dBA 100 yards from the construction site.	Noise due to construction work ≤ 95 dBA 100 yards from the construction site.	Noise due to construction work ≤ 100 dBA 100 yards from the construction site.	Noise due to construction work ≤ 105 dBA 100 yards from the construction site.	Noise due to construction work > 105 dBA 100 yards from the construction site.	a. This applies to both day and night work.
Innovation	◆ Implementation	27	Implementation of project innovations is greater than the project goal	Implementation of project innovations is equal to the project goal	Implementation of project innovations is greater than or equal to 90% of the project goal	Implementation of project innovations is greater than or equal to 80% of the project goal	Implementation of project innovations is less than 80% of the project goal	a. The Owner Agency must provide a receptive environment to innovation and have a process for approving proposed innovations. b. Innovations will include innovative practices and technologies proposed by the contractor at the proposal/bid stage and during the course of the contract. It also includes value engineering proposals.
Table Notes: These measures, goals, and values have not been tested and are shown as an example starting point for consideration. [1]The Quality Index is an issue that needs to be addressed by the research or construction community. The primary issue is how to come up with a series of goals/tests that are indicators of durability and the associated lifecycle costs. The index should be tied to what the contractor gets paid, and could eventually be used in the pre-qualification process for future contracts (would need to be a national measure). This would make a good NCHRP project.								

Sample Performance Goal Materials – MDOT M-115 Pilot Project

MDOT developed the following performance goals for the M-115 pilot project. As part of the RFP/proposal process, MDOT allowed contractors to propose more aggressive goals than MDOT's specified baseline goals. If the contractor proposed more aggressive goals, they received additional points in the best value award, but the proposed goal became the baseline for applying incentives and disincentives.

"1. Open to Traffic: M-115 travel lanes are fully open to traffic (no flag control/lane closures or signal operations) on or before the set BASELINE date of August 2, 2008.

Method of Measurement: Actual open to traffic date.

Incentive/Disincentive: User delay costs for average weekday with flag control = $7,000.

- Incentive for Open to Traffic prior to the BASELINE date = $7000/calender day.
- Disincentive for Open to Traffic after the BASELINE date = $7000/ calendar day.
- Maximum Incentive = $98,000 (14 calendar days).
- Maximum Disincentive = Unlimited.

Example: The set BASELINE is August 2, 2008. Contractor proposes an open to traffic date of July 2, 2008, which will now becomes the BASELINE. Open to Traffic incentives and disincentives will be base on the BASELINE date of July 2, 2008.

2. Construction & Cleanup Completion: All construction and cleanup roadway and bridges are complete on or before the set BASELINE of 15 calendar days after the actual Open to Traffic Date.

Method of Measurement: Actual Final Acceptance date as defined in the Definitions and Project Requirements sections.

Incentive/Disincentive: $2,650/calendar day

- Incentive for construction & cleanup before the BASELINE number of calendar days = $2,650/calendar day.
- Disincentive for construction & cleanup after the BASELINE number of calendar days = $2,650/calendar day.
- Maximum Incentive = $37,100.
- Maximum disincentive = Unlimited.

Example: The set BASELINE is 15 calendar days after the actual Open to Traffic Date. If the Contractor proposes a construction and cleanup complete of 10 calendar days, the proposed 10 calendar days will now becomes the BASELINE. Construction and Cleanup incentives and disincentives will be based off the BASELINE of 10 calendar days

3. Pavement Performance: Meeting the goal of pavement performance will be broken up into three different areas:

- Initial Pavement Acceptance: The Pavement Acceptance shall be as specified in the Special Provisions included in the proposal package.
- Pavement Performance Warranty: The set BASELINE warranty period is five years. This allows the Michigan Department of Transportation (MDOT) to waive acceptance testing which reduces inspection requirements. Contractors are encouraged to offer a longer warranty period. This will provide value to the Contractor's proposal and will be accounted for in the determination of the best value aspect of the bid proposal.
- Ride Quality: The ride quality is set with an incentive and there is no disincentive. The Contractor will be required to meet the minimum ride quality specifications. Ride Quality Index (RQI) units are inches per mile

  Incentive per ½ Mile Direction:

  - Ride quality index between 20 and 30 inches per mile - $2,500
  - Ride quality index between 0 and 20 inches per mile - $5,000

  Bonus Incentive Entire Project:

  - Ride quality index below 30 inches per mile - $25,000

  No disincentives apply; the Ride Quality Index must be 30 inches per mile or less

4. Worker Safety During Construction: Worker injury rate (total recordable case rate) less than the rate of 4.0 based on the OSHA 300 rate is the goal for this project**.**

Method of Measurement: Form OSHA 300A

- Disincentive - $5000 if actual rate is higher than the goal for the duration of the project.
- Incentive - $5000 if actual rate is less than the goal for the duration of project.

5. Work Zone Crashes: Maintain the total pre-construction crash rate of no more then 1.0 crash per month on this 5.56 mile section of roadway for the duration of the project.

Method of Measurement: Transportation Management System (TMS) crash data. The crash data pulled from TMS is from the state-wide data base of actual police crash reports. The data used for measurement will be from actual construction start date to project Final Acceptance date. All crashes during this period will be used, regardless whether there is active construction or not.

- Incentive = $20,000 if equal to or less than 1.0 crash per month.
- Disincentive = $5,000 if equal to or more than 2.0 crashes per month.

6. Motorist Delay: Stage operations to minimize motorist delay. No vehicle shall be delayed due to Contractor's operations more than 10 minutes beyond its normal travel time. Change work operations as needed, to maintain delays below this maximum.

Method of Measurement: On-site total travel time measurements. The random on-site delay measurements will be taken four times per week, twice during the weekdays (Monday – Thursday) and twice on the weekend (Friday - Sunday). Each measurement will include both directions of travel. The measurement for the direction with the highest delay will be used for determining incentive / disincentive. The random on–site measurement will occur between 10:00 am - 1:00 pm and 3:00 pm – 6:00 pm, with a +/- 30 minute variance. Normal travel time @ 55 MPH for 11 miles = 12 minutes

Incentive / Disincentive per Measurement:

Measured Delay	Incentive/Disincentive (dollars)
0-5 min	+1000
6 min	+ 800
7 min	+ 600
8 min	+ 400
9 min	+ 200
10 min	0
11 min	- 200
12 min	- 400
13 min	- 600
14 min	- 800
15 - 20 min	- 1000
+ 20 min	- 5000 + Contractor's operations may be Shut down

Maximum Incentive = $50,000

Bonus Overall Incentive: If there are no more than 3 measured occurrences exceeding 10 minutes and less than or equal to 15 minutes delay for the duration of the project, the Contractor will be eligible for the Bonus Overall Incentive. Any one measurement exceeding 15 minutes will cause the Bonus Overall Incentive to not apply.

Bonus Overall Incentive = $50,000"[1]

[1] Michigan Department of Transportation RFP -84169, Highways for LIFE Project.

Performance Measurement Methodology

Process

If you set goals, you need to measure performance against those goals to determine to what extent they were met. The measurement methodology will define what gets measured by whom and when, as well as what to do with the results. In performance contracts, there are numerous techniques for monitoring performance. This methodology considers the logistics for how the performance goals will be measured, evaluated and scored. Recommendations and lessons learned from real-world performance contracts are provided. Materials that may be used by the Owner Agency to implement the processes involved with measuring performance also have been included. The overall process is summarized in the figure below.

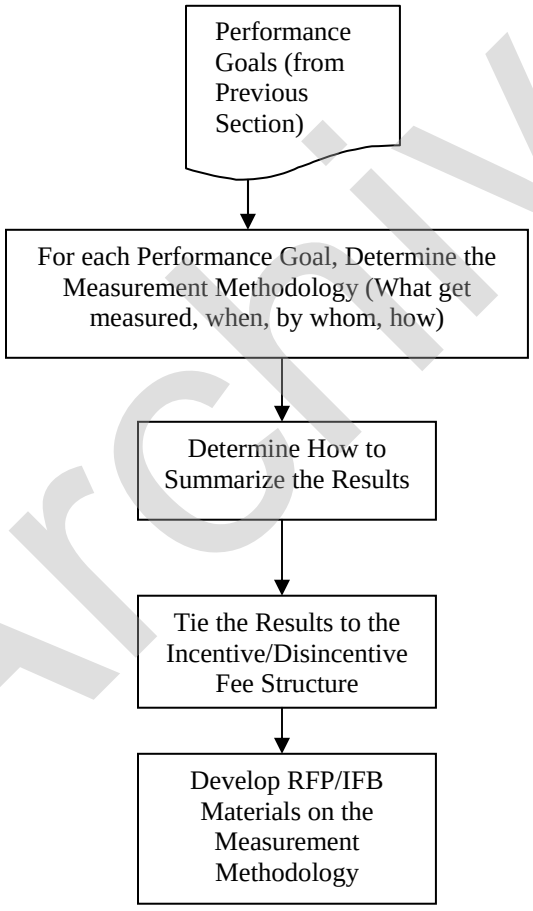


Figure 4. Process for Defining the Measurement Methodology

What Gets Measured (When, By Whom, and How)

Frequency

There are a number of frequency options for measuring performance, including:

1. Continuous Measurement
2. Cyclic (Hourly, Daily, Quarterly, Weekly, Monthly, Annually)
3. Start of project, end of project and at project milestones
4. Long-term

The frequency will depend largely on the specific performance goal, and the frequency of measure should be defined for each performance goal (see Table 3). For example, the frequency of measurement of some congestion goals may need to be continuous, but the pavement smoothness likely would be measured at the end of the project, and perhaps on a long-term basis. Unscheduled or "surprise" inspections can be incorporated into the project's evaluation as well.

The frequency of data collection or testing, which will affect the frequency of the overall performance evaluation, may be impacted by the innovations introduced on the project. For example, if a long-lasting material is proposed and implemented, this may necessitate longer-term intermittent site visits to collect resulting data.

The frequency of data dissemination and presentation is also important to consider. For example, as dictated by specific performance goals such as motorist delay, the contractor logically would collect these hourly data on an hourly basis, but it may be more reasonable to present these data once a week or once a month to the project team. There may be other economic, temporal, or spatial impacts that allow for reduced work and data collection/analysis efforts. Many of these may be outside of the contractor's control (i.e., extreme weather, terrorist attacks, etc.).

We have provided, as an example, a discussion on organizing quarterly milestone evaluations in this section. At quarterly milestone intervals throughout the project (i.e., 0%, 25%, 50%, 75% and 100% project completion), the project team (i.e., Owner Agency staff, the Contractor, other parties) performs an evaluation of the project, the work zone and/or the Contractor's records of actions completed in that period to review Contractor progress and performance.

The frequency of measuring performance will also assist the contractor and Owner Agency when planning and performing work. The following figure demonstrates an example iterative process associated with a quarterly performance review. It begins with a review and inspection of the work, follows with the production of a digital record (i.e., DVD) and a report showing what was found during the review, and ends with the project team planning and performing work based upon the findings.

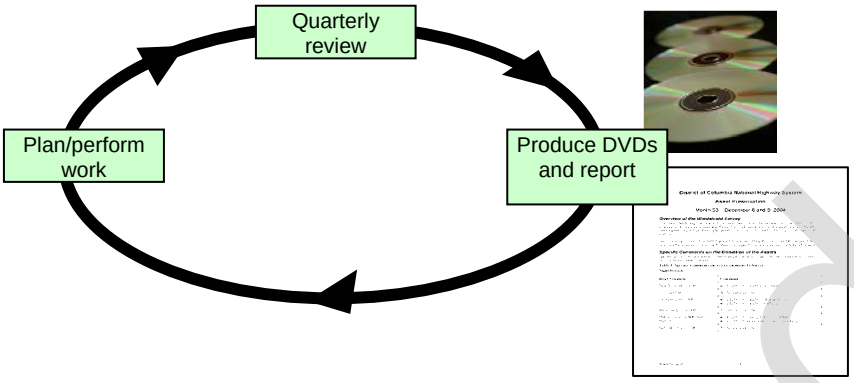


Figure 5. Quarterly Milestone Review Process.

Measuring performance will also assist the contractor and Owner Agency when planning and performing work on an annual basis. The following figure demonstrates an example iterative process associated with a comprehensive annual performance review.

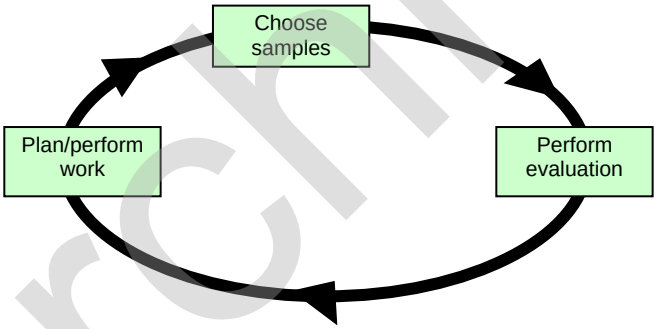


Figure 6. Comprehensive Annual Review Process.

Evaluators

The evaluators for this effort generally would come from three pools: the construction contractor, an independent evaluator, the Owner Agency. We recommend using an unbiased, independent evaluator to measure performance against the goals. FHWA-required verification testers could also be included as a fourth pool of evaluators.

The independent evaluator should not be involved in the day-to-day activities of the project to ensure a fair evaluation; this would also prevent the evaluator from focusing solely on either positive or negative data, records, areas, or other project information.

This evaluator could be supplied by FHWA. Alternately, a consultant familiar with the type of project may serve as an evaluator. However, the Owner Agency and the contractor may need or choose to collect some or all of the data as appropriate. An assignment of responsibility must be made for each performance goal (see Table 3).

When developing goals, it is important to consider how they will be measured on a technical level and to define this in the solicitation package. For example, if specialized equipment is required for an evaluation, will the contractor or the Owner Agency furnish this equipment? A decision such as this one will influence the ultimate cost of the project and must be carefully taken into account and described in the solicitation package.

We recommend recording all evaluations via electronic media to provide a record of the condition of the project. The electronic media record serves to document the changes to the project setting over time and is useful as reference material in planning future work. We suggest that each organization involved on the project receive a copy of each of the evaluations via DVD.

Measures of Effectiveness

For each goal, it is important to define the measure of effectiveness, the unit of measure, and the method that will be used to measure performance. The measure of effectiveness is the entity under scrutiny (i.e., each user satisfaction survey, each acre of wetlands restored, etc.). The units of measure will focus on the size of the sample to be taken (i.e., 1/10 mile, one month, entire work zone, etc).

The methods of measurement seek to answer the following questions:

1. How does one measure this entity?
2. What processes must be followed to obtain a reliable measurement?

The method of measurement should be nationally accepted, if possible. As an example, AASHTO-accepted standard measurement practices will provide good methods of measurement for some goals. The Owner Agency will need to define units and methods for each goal.

Sampling Strategies

The Owner Agency must choose a sampling strategy for the reviews, whether they are daily, weekly, quarterly, monthly, or any other alternative. The options are sampling data, items or assets to show a representative view of the work or using a 100% sample. We recommend avoiding a 100% appraisal due to the large cost and time expenditures associated with these reviews.

We suggest randomly sampling a portion, perhaps 10%, of the category items to be reviewed. A randomly-generated sample will prevent the evaluators from focusing solely on either good or poor sections. Randomly-selected samples may be generated for each item included in each category for each review. We also recommend specifying the sampling process clearly in the solicitation package, as the process will influence the price.

Scoring Styles

Two primary styles or strategies for measuring performance are:

1. Subjective
2. Objective

Of course, it is also possible to combine the two styles. For example, a subjective monthly evaluation could coexist independently with an objective annual evaluation. Alternatively, a monthly evaluation could have both objective and subjective components.

We recommend that these evaluations be objective evaluations of the Contractor's performance against the performance goals. While subjective evaluations are helpful in capturing the project team's perceptions of the work completed and remaining, objective evaluations minimize the amount of debate over performance against the goals. It is also simpler to incorporate incentive and disincentive fees into the solicitation package when using unbiased, hard data and scores. The Owner Agency and any evaluators should review the work completed or in progress and the results; then the Owner Agency and any evaluators should assign the appropriate Level of Performance score.

MDOT M-115 Pilot Project:

MDOT conducted a survey before and after construction to learn about users' opinion on the following topics: proposed construction schedule, daytime construction plan, work zone safety, pavement and ride quality conditions, and traveling delays. The outcomes of the survey were included in the SEP-14 report as a performance indicator.

The evaluator personnel should be kept as consistent as possible to ensure comparability of the reviews. If new evaluators are introduced sporadically, this may bring delays. The Owner Agency would spend time and money in getting the new evaluators up to speed on the project, data, and context. Again, the objective evaluator should not be involved in the day-to-day minutiae of the project, but the evaluator should be familiar with the appropriate technical logistics of the project.

What to Do With the Results

When you evaluate performance, you end up with a large number of scores for various samples and performance goals. The challenge is to use these scores to communicate the effectiveness in meeting the performance goals. Different levels of management will have different needs in terms of level of detail. Upper level management tends to be interested in seeing summary scores at the project level, where project level management tends to be interested in the detailed results.

The Owner Agency and independent evaluator or consultant should generate reports that summarize the review's findings. Results could be presented in both data summaries and written commentary sections. Deficiencies and problems found during the evaluation should be highlighted; simple bulleted lists or checklists may be used to convey this information.

We recommend that the Owner Agency, independent evaluator, or consultant generate periodic reports that summarize any review's findings. To help identify trends, the project team should compare the review results against the results for previous periods. It is useful to compare the results against either the baseline condition (i.e., the project at 0%

completion, one day before the contract starts) and/or the previous comprehensive evaluation.

We recommend that the project team discuss the results of the evaluations. We also recommend that the Owner Agency use partnering sessions, as needed, to resolve any issues unearthed by the reviews. The Owner Agency also should report a general level of performance satisfaction along with recommendations and concerns. The contractor may bring issues to the attention of the project team, along with solutions and suggestions for future activities.

Methods for Combining Results into Summary Scores

The evaluation team could use the resulting scores for each goal (i.e., Recycling and Reuse) to obtain an overall category score (i.e., environmental) and an overall project score. A sample process to obtain the two latter scores is detailed below.

Each performance goal should be assigned a computed relative weight. The Table below assigns relative weights to two sample performance goals; each goal in the project would need an associated weight. The owner agency can determine the criteria against which to rate the goals. For sample purposes here, we have used the main HfL high level goals.

For each performance goal below, the Owner Agency assigns rating for each goal for each category (in this case – "Improve safety," "Reduce Congestion due to Construction," "Improve Quality," and "Improve User Satisfaction"). For the scale, 5 is very important and 1 is not as important. The Computed Relative Weight is determined by summing the relative weights for the performance goal and dividing by 2 (to obtain a score out of 10). As the computed relative weight increases, so does the importance of the goal.

In the example below, Capacity (with a computed relative weight of 6.5) was determined to be more important than Recycling/Reuse (with a computed relative weight of 4.5).

These weights will help determine which goals have more of an impact on the overall score (and thus the application of incentive and disincentive fees, as discussed below). In the example, Capacity will have more impact on the score than Recycling/Reuse.

Table 2. Example Relative Weights for Two Sample Performance Goals

Category	Element	Performance Goal	a. Improve Safety	b. Reduce Congestion due to Construction	c. Improve Quality	d. Improve User Satisfaction	Computed Relative Weight (a+b+c+d)/2
Construction Congestion	Capacity	Capacity in the work zone [or work zone and alternate route(s)] during peak traffic periods is greater than or equal to 90% of the pre-construction capacity	3	5	1	4	6.5
Environmental	Recycling and Reuse	Capture and recycle/recover 90% of recyclable materials used on project	1	1	4	3	4.5

Determining Incentive/Disincentive Fees with the Scores

Incentive and Disincentive fees are an innovative approach to motivate the contractor to meet the Performance Goals. If the Owner Agency is going to apply incentives and disincentives, there needs to be an objective system of determining the fees applied. The Owner Agency also needs to determine what reasonable incentive and disincentive fees are for the project and the locale. We have used 5% here as a sample, but 10% might be more appropriate depending on the situation. As Owner Agencies and contractors get more experienced with incentives and disincentives, the process will evolve.

The incentives and disincentives must be reasonable and meaningful. The incentives also must be achievable, or they will not have an impact.

While including disincentives is appropriate, the Owner Agency must realize that this level of risk will come at a cost. Disincentives are effective to push performance up to a point, but after that, you also need an incentive.

The measurement methodology sample materials included below provide language for the solicitation package on

MDOT M-115 Pilot Project:

The ride quality is set with an incentive as listed below:

Incentive per ½ Mile Direction:

- *Ride quality index between 20 and 30 inches per mile - $2,500*
- *Ride quality index between 0 and 20 inches per mile - $5,000*

Bonus Incentive Entire Project:

- *Ride quality index below 30 inches per mile - $25,000*

No disincentives apply; the Ride Quality Index must be 30 inches per mile or less

applying incentive and disincentive fees. Some assumptions are made in this contract language. For example, the contractor shall be eligible for an incentive fee or subject to a disincentive fee for each Category, which is tied to the comprehensive annual evaluation, and is based upon performance throughout the year. This award is designed to reward performance that meets or exceeds the performance goals.

We also recommend that the Owner Agency form a Performance Evaluation Board (PEB) that will advise the Contracting Officer on the amount of the total incentive fee to be received by the Contractor or the disincentive fee to be applied to the Contractor. The PEB personnel should be kept consistent throughout the project's life. After each evaluation, the PEB would convene to review the scores and determine the appropriate course of action. In the sample materials, the PEB generates a score with a scale of 0 to 100; in the scale, 40 points come from monthly evaluation scores, 50 points come from the comprehensive annual score, and 10 points are subjectively produced:

(40%*Monthly Evaluations) + (50%*Comprehensive Evaluation) + 10% subjective score

Note that the materials provide a detailed breakdown of how to compute the incentive/disincentive fees. For the incentive/disincentive fee structure, the Owner Agency must decide how these should be linked to performance. For example, should each category be tied to individual incentive/disincentive fees, or should the collective categories be tied to an overall incentive/disincentive fee? We recommend tying each category to individual incentive and disincentive fees, as this allows the Owner Agency to adjust any project management strategies in case a category is deficient or problematic.

Lessons Learned from Real-World Performance Contracts

The following measurement methodology and incentive/disincentive lessons have been learned in real-world performance contracts:

- Specify the performance measurement methodology clearly in your RFP/IFB – it will impact the price
- Need to choose between sampling and 100% reviews
- If sampling, choose the samples randomly – resist the temptation of only looking at the problems
- Capture the performance reviews on video
- Generate reports from the review that will be shared with all project partners
- Present the results in a variety of ways to satisfy different interest levels
- Weighted averages work for combining scores across multiple samples and categories, but can hide problems
- Do not focus too long on the overall score – it is just an indicator
- Make incentives achievable (and worthwhile)
- Include disincentives to push performance
- Incentives and disincentives should be balanced, fair, and reasonable

- Incentive and disincentive fee structures evolve from one project to the next as Owner Agencies and Contractors develop experience
- While including disincentives is appropriate, realize that you are going to pay for that risk up front
- Be fair!

Sample Measurement Methods and Solicitation Package Materials

The following table provides the sample set of measurement methods for the menu of performance measures and categories presented in the Performance Goals Section of this Guide. All entries in this table can be adjusted to be suitable for the specific locality of the project.

Following the Measurement Methods Table are sets of sample supplemental wording for RFP Sections:

- E – Measurement Methodology, Inspection, and Acceptance
- F – Deliveries or Performance
- H – Special Contract Requirements

Table 3. Sample Measurement Methods for the Performance Measure Menu in the Performance Goals Section

Category	Element	PM#	Performance Goal	Measure of Effectiveness? Units of Measure?	How to measure? What processes?	How often? When?	Who will Evaluate This?
Safety	◆ Injuries – (Workers) Contractor / Sub-Contractors on site personnel, Government representatives, Consultant, Vendors, Delivery Personnel	1	Incident Rate (IR) for Worker injuries is less than 4.0	Incident Rate for the Entire Project	Contractor's officially reported Incident Rate	End of Project	Construction Contractor or Independent Evaluator or State DOT
	◆ Crashes	2	Site Crash Rate during construction divided by the Crash Rate prior to construction is equal to 1.0	Site Crash Rate for the Entire Project divided by the Site Crash Rate prior to Construction	Each State Agency / Contractor shall record the Crash Rate during construction. For long term projects, the annual Crash Rate during construction should be used and divided by the Crash Rate prior to construction. For short term projects, the overall Crash Rate during construction should be used.	End of Project	Construction Contractor or Independent Evaluator or State DOT
	OR						
	◆ Crashes	3	Work zone crash rate equal to pre-construction crash rate	Work Zone Crash Rate for the Entire Project Compared to the Pre-Construction Crash Rate	Each State Agency / Contractor shall record the Crash Rate during construction. For long term projects, the annual Crash Rate during construction should be used and divided by the Crash Rate prior to construction. For short term projects, the overall Crash Rate during construction should be used.	End of Project	Construction Contractor or Independent Evaluator or State DOT
	◆ Speed Band	4	85% of the motorists travel at the posted speed limit or less	Percentage of Motorists traveling at the posted speed limit or less each day	Monitoring devices, police radar, police tickets	Each Day	Construction Contractor or Independent Evaluator or State DOT
	AND						
	◆ Speed Band	5	No one travels more than 20 mph over the posted speed limit.	Frequency of recorded speeds greater than 20 mph over the posted speed limit	Monitoring devices, police radar, police tickets	Each Day	Construction Contractor or Independent Evaluator or State DOT

Category	Element	PM#	Performance Goal	Measure of Effectiveness? Units of Measure?	How to measure? What processes?	How often? When?	Who will Evaluate This?
Construction Congestion	◆ Travel time/delay during construction	6	Rural: Average motorist delay less than 15 minutes (as compared to pre-construction travel time) Urban: Average motorist delay less than 20 minutes (as compared to pre-construction travel time)	Average Delay for Each Hour for Each Direction (as applicable) computed using to Baseline Pre-Construction Travel Time	Options: • Pilot Vehicles • Cell Phone Tracking • License Plate Matching • Estimation Software	1 hour averages for the entire work zone period – need both before (baseline) and after data	Construction Contractor or Independent Evaluator or State DOT
		7	Average travel time through the work zone is equal to or less than the established target	Average Travel Time for Each Hour for Each Direction (as applicable) compared to the Established Target Travel Time	Options: • Pilot Vehicles • Cell Phone Tracking • License Plate Matching • Estimation Software	1 hour averages for the entire work zone period – need both before (baseline) and after data	Construction Contractor or Independent Evaluator or State DOT
	◆ Queue Length During Construction	8	No stopped queue (speed less than 10 mph)	Maximum Stopped Queue Length for Each Day for Each Direction (as applicable)	RTMS (or similar) units placed upstream of the work zone at 0.5 mile increments	End of Each Day	Construction Contractor or Independent Evaluator or State DOT
		9	Rural: < ½ mile moving queue (travel speed 20% less than posted speed) Urban: < 1 ½ mile moving queue (travel speed 20% less than posted speed)	Maximum Moving Queue Length for Each Day for Each Direction (as applicable)	RTMS (or similar) units placed upstream of the work zone at 0.5 mile increments	End of Each Day	Construction Contractor or Independent Evaluator or State DOT
		10	Peak period queue length is equal to typical pre-construction peak period queue length	Maximum Queue Length during AM Peak and PM Peak compared to Baseline Typical Queue Length during Pre-Construction AM Peak and PM Peak	RTMS (or similar) units placed upstream of the work zone at 0.5 mile increments	End of AM Peak Period and End of PM Peak Period	Construction Contractor or Independent Evaluator or State DOT
	◆ Incident Clearance Time	11	Non-injury incidents are cleared from the travel lanes within 20 minutes	Clearance Time for Each Non-Injury Incident compared to Target Clearance Time	Electronic or Paper Log capturing reporting time and clearance time	Each Incident for entire project – Incident scores are averaged to obtain overall score	Construction Contractor or State DOT or independent evaluator

Category	Element	PM#	Performance Goal	Measure of Effectiveness? Units of Measure?	How to measure? What processes?	How often? When?	Who will Evaluate This?
	◆ Capacity	12	Capacity in the work zone [or work zone and alternate route(s)] during peak traffic periods is greater than or equal to 90% of the pre-construction capacity	Measured or Computed Capacity for Each Work Zone Configuration	3 Options: • Compute based on traffic data (volume and speed) • Compute using Highway Capacity Manual • Modeling	Must be computed or measured for each change in work zone configuration	Construction Contractor or State DOT or independent evaluator
Quality	◆ Quality Index	13	The Contractor achieves a Quality Index Score of 0.8	Quality Index computed on the basis of a number of project or agency-specific quality-related measures Note: The Quality Index needs to be defined in the Contract along with a description of how it is determined.	The Owner Agency would define the quality goals important for their project. The Owner Agency would develop 5 levels of performance for each performance measure, and weight each performance measure. The Quality Index would be computed as a weighed average across the various quality performance measure scores. The Owner Agency may consider defining a rejection level.	As desired by the Owner Agency – This could be computed monthly, annually or at the end of the project.	Construction Contractor or State DOT or independent evaluator
	◆ Pavement Smoothness	14	Inertial Profile, IRI, less than 48 inches per mile	IRI (inches per mile) for each Lane for entire length of project	Continuously reported IRI using inertial profiler	At project completion	Independent Evaluator
	◆ Pavement Noise	15	Noise less than 96 dBA based on OBSI Method	Each Lane for entire length of project	On-Board Sound Intensity Method	At project completion	Independent Evaluator
Time	◆ Overall Project Schedule	16	Project completed ahead of the contract completion date	Actual project completion date versus initial scheduled contract completion date	Compare to proposed schedule	End of project	Construction Contractor or State DOT or independent evaluator
		17	Reduce contractor's actual days on the road by 20% compared to the State DOT MAX working days	Actual days on the road (for example, days in which lane or shoulder closures are required) versus State DOT MAX working days	Use actual calculated days and the States' records	End of project	Construction Contractor or State DOT or independent evaluator
	OR						

Category	Element	PM#	Performance Goal	Measure of Effectiveness? Units of Measure?	How to measure? What processes?	How often? When?	Who will Evaluate This?
	◆ Schedule Improvements	18	Reduce working days to complete project by 20% when compared to the State DOT's MAX working days.	Total working days to complete the project versus State DOT MAX working days	Use actual completion time for the project and the States' records.	End of project	Construction Contractor or State DOT or independent evaluator
	OR						
	◆ Schedule Improvements	19	Achieve a score of < 1 using the equation "Actual Working Days divided by State DOT MAX working days"	Project actual working days divided by the State DOT MAX working days	Use actual working days as reported by the contractor and verified by the Owner Agency compared to the SDOT MAX working days	End of project	Construction Contractor or State DOT or independent evaluator
	◆ Scheduling Milestones	20	Complete all major milestones on time	Major milestone scheduled date versus major milestone completion date for each major milestone	Use project scheduling software to track major task completion by the contractor	End of each agreed upon major milestone	Construction Contractor or State DOT or independent evaluator
	◆ Scheduling	21	No contract days where no work is being performed when work is able to be performed and traffic is impacted in the work zone	Actual contract days where no work is performed when work could be performed	Contractor reporting or physically monitoring the work zone or electronically using cameras or other data capture technology	End of each day	Construction Contractor or State DOT or independent evaluator
Cost Savings	◆ Contract cost savings due to value engineering	22	Eliminate actual contract growth by achieving a score of 1 using the equation of final cost divided by original contract allotment.	Total final contract costs divided by the original allotment	Using actual final contract cost data versus DOT established contract allotment.	End of contract	Construction Contractor or State DOT or independent evaluator
Customer Focus/ User Satisfaction	◆ Customer Satisfaction	23	Based on survey results, 80% of travelers were satisfied with their driving experience during the project	Each 5-point Likert scale survey (i.e., 1 = very satisfied, 2 = somewhat satisfied, 3 = averagely satisfied, 4 = not satisfied, 5 = very dissatisfied)	Likert scale with one question on user satisfaction (i.e., How satisfied were you with your driving experience?).	At 25%, 50%, 75% and 100% project completion	Construction contractor, Independent Evaluator or State DOT

Category	Element	PM#	Performance Goal	Measure of Effectiveness? Units of Measure?	How to measure? What processes?	How often? When?	Who will Evaluate This?
Environmental	◆ Watershed Quality Management	24	Reduce sediment loads to 5% less than the pre-construction conditions	Turbidity	Turbidity Meter	At pre-construction, on a set schedule, and at project completion	Construction contractor, Independent Evaluator or State DOT
	◆ Recycling and Reuse	25	Capture and recycle/recover 90% of recyclable materials used on project	Tons for project	Ratio of recycled/recovered tons over available tons	At 25%, 50%, 75% and 100% project completion	Construction contractor, Independent Evaluator or State DOT
	◆ Construction Noise	26	Noise due to construction work ≤ 95 dBA 100 yards from the construction site	dBA levels for project	Sound level measuring device	Hourly	Construction contractor, Independent Evaluator or State DOT
Innovation	◆ Implementation	27	Implementation of project innovations is equal to the project goal	Innovations Implemented on the Project Compared to Innovations Proposed by the Contractor for the Project	Ratio of innovations implemented over innovations proposed by Contractor	At project completion	Construction contractor, Independent Evaluator or State DOT

Table 3b. Measurement Methods for the Performance Measures Adopted in the Michigan Pilot Project

Category	Element	PM#	Performance Goal	Measure of Effectiveness? Units of Measure?	How to measure? What processes?	How often? When?	Who will Evaluate This?
Safety	◆ Worker Safety During Construction	1	Incident Rate (IR) for Worker injuries is less than 4.0	Incident Rate for the Entire Project	Calculate the IR using OSHA summary Form 300A data. For the calculations, follow the instructions indicated in the corresponding booklet	End of Project	MDOT staff
	◆ Work Zone Crashes	2	Maintain the pre-construction crash rate of no more than 1.0 crash per month	Site Crash Rate	Count all crashes within length of the project for the duration of the project. The crash data is pulled from the state-wide database of actual police crash reports	End of Project	MDOT staff
Construction Congestion	◆ Motorist delay	3	No vehicle will be delayed due to contractor's operations more than 10 minutes beyond the normal travel time	Travel time (min)	Perform random onsite travel time measurements.	Four times a week, twice during weekdays (Mon thru Thu) and twice during weekends (Fri thru Sun).	MDOT staff
Time	◆ Open to Traffic	4	Lanes are fully open to traffic on or before the set BASELINE date	Open to traffic date	Compare actual open to traffic date against the baseline date	End of Project	MDOT staff
	◆ Construction and Cleanup Completion	5	All construction and cleanup roadway and bridges are completed on or before the set BASELINE of 15 calendar days after the actual open to traffic date	Cleanup completion date	Compare actual cleanup completion date against baseline date	End of Project	MDOT staff
Quality	◆ Pavement Initial Acceptance	6	Pavement initial conditions shall be as specified in RFP special provisions for M-115 Highways for Life Initial Pavement Acceptance	Segregation, Raveling, Rutting, Broken Aggregate, Flushing, Edge of Paved Shoulder, Crack, and Slope	Visual inspection of the base and each course (leveling and top)	Within 12 hours of placement of the base and each leveling course. Within 24 hours of placement of the top course.	MDOT staff and Project Engineer

Category	Element	PM#	Performance Goal	Measure of Effectiveness? Units of Measure?	How to measure? What processes?	How often? When?	Who will Evaluate This?
	◆ Pavement Warranty	7	A minimum warranty period of 5 years (Baseline)	Warranty period	Compare proposed warranty period against baseline period	At the beginning of the project	MDOT Staff
	◆ Ride Quality	8	Achieving a ride quality index of 30 or less	Ride Quality Index (RQI) Half-mile segment and entire length of the project	Determine the RQI in accordance with MTM 726 – Michigan Test Method for Determining Ride Quality Using a GM Type Rapid Travel Profilometer	After each section of pavement is completed	Contractor and MDOT Project Engineer (for acceptance)

SAMPLE RFP SECTION E – MEASUREMENT METHODOLOGY, INSPECTION AND ACCEPTANCE

E.1 Performance monitoring is a key component of this contract. Both the Contracting Officer's Technical Representative (COTR) and the Contractor must actively monitor performance to ensure that the construction is successfully completed and the Performance Goals are met.

E.2 The Contractor is free to use any reasonable method it believes appropriate to monitor performance, discover issues, and take remedial action as appropriate to meet the Performance Goals.

E.3 The Owner Agency's intent is not to dictate how the Contractor chooses to monitor its own performance, but rather to know that the Contractor is meeting the Performance Goals set forth in this RFP. As a result, this section defines the Owner Agency's performance monitoring program. The Contractor must also have its own performance monitoring program, which must be described in the Contractor's Quality Management Plan and proposal (see Section F).

E.4 The Owner Agency and Federal Highway Administration (FHWA) representatives will conduct periodic (i.e., daily, quarterly, monthly, annually, etc.) performance monitoring and evaluations. The combination of the selected monitoring levels shall help ensure progress and acceptable performance throughout the term of the contract.

E.5 The COTR and the Contractor will conduct performance monitoring. The Owner Agency inspectors may inspect the quality of the work performed to ensure that it meets applicable specifications. The COTR's role is to verify that the desired outcome (construction is completed and Performance Goals are met) is produced.

E.6 DAILY MONITORING

E.6.1 The Contractor shall maintain a daily log for the Project. The log must contain information regarding:

A. Activities of the Contractor's crews, including the locations where work is performed;
B. Complaints received from the general public for which Contractor response is required;
C. Unusual or unexpected conditions uncovered in the course of work activities;
D. Incidents involving safety either of the general public or Contractor work forces; and
E. Quality testing results.

E.6.2 The COTR shall track the daily activities against the work schedule. The Contractor shall advise the COTR of any variations from the work schedule.

E.6.3 The Contractor shall monitor the daily activities of the field crews, and obtain the following data:

A. Types of work being performed and location;
B. Issues and situations encountered or reported by the public and actions taken to mitigate them;
C. Coordination among Contractor staff, Owner Agency personnel, utility operations, and others whose work impacts the items under this RFP.

E.6.4 The Contractor's daily reports must be available to the COTR to assist in verifying daily progress under the contract. A good working relationship between the COTR and the Contractor's day-to-day Project manager is essential for Project success.

E.6.5 The Owner Agency or its representative will conduct reviews. If it is determined during any review that work does not meet the quality standards outlined in the Standard Specifications, or the required contract Performance Goals, the Owner Agency or the Contractor will address the issue at no additional cost to the Owner Agency.

E.7 CYCLICAL EVALUATIONS

E.7.1 Note: This section will specify the frequency of the evaluation. There are a number of frequency options for measuring performance, including:

A. Continuous Measurement

B. Cyclic (Hourly, Daily, Quarterly, Weekly, Monthly, Annually)

C. End of project or at project milestones

D. Long-term

The frequency will depend largely on the specific performance goal, and must be defined for each goal. For example, the frequency of measurement of some congestion goals may need to be continuous, but the pavement smoothness would likely be measured at the end of the project, and perhaps on a long-term basis. Also, as dictated by specific Performance Goals, the Contractor should collect hourly data on an hourly basis, but it may be more reasonable to present these data once a month to the COTR.

E.7.2 At specified intervals throughout the project, the COTR or his designee(s) and the Contractor (or its representative) shall perform an evaluation of the work zone and/or the Contractor's records of actions completed in that period to review Contractor progress and performance.

The COTR also reserves the right to perform unscheduled or "surprise" inspections. These evaluations shall be objective evaluations of the Contractor's performance against the Performance Goals. The evaluators

will review the work completed or in progress and shall assign the appropriate Level of Performance score.

The evaluator personnel shall be kept as consistent as possible to ensure comparability of the reviews from month to month. Randomly selected samples may be generated for items included in each category each period; this will help the COTR and Contractor avoid reviewing only problematic or successful areas. An approximate 10% sampling rate may be used to select the review items.

The frequency of data collection may be impacted by the innovations introduced on the Project. For example, if a long-lasting material is proposed and implemented, this may necessitate only intermittent site visits to collect resulting data. There may be other economic, temporal, spatial, or other indicators that allow for reduced data collection/analysis efforts.

The COTR or his designee(s) shall generate reports that summarize the review's findings. The COTR or his designee(s) shall note deficiencies throughout the Evaluation, and the COTR or his designee(s) shall include these deficiencies in the quarterly report.

E.7.3 To help identify trends, the Owner Agency or its designee(s) shall summarize and compare the review results against the results for previous periods. The Owner Agency shall also compare the results against either the baseline condition or the previous Comprehensive Evaluation.

E.7.4 The COTR shall discuss the results of the Evaluations with the Contractor. The COTR shall also report a general level of performance satisfaction along with recommendations and concerns. The Contractor also may bring issues to the attention of the COTR, along with suggestions for future activities. Periodically, the COTR may visit sites where Project personnel have reported deficiencies and for which the Contractor must perform remedial work.

E.7.5 The Owner Agency shall record these Evaluations via electronic media to provide a record of the condition of the project. The Owner Agency shall provide a copy of each recording to the Contractor.

E.8 COMPREHENSIVE EVALUATION

E.8.1 The COTR or his designee (or representative) will perform an extensive, objective Evaluation at least once in every 12-month period. To measure performance, the Owner Agency or its designee(s) will compute performance scores for each performance goal, as well as an overall summary score. The Owner Agency or its designee(s) will compute scores based on averaging results across multiple samples. The Owner Agency or its designee(s) will average the scores across the samples to obtain the score for the performance goal. The Owner Agency or its designee(s) will use these summary scores as an indicator of the Contractor's performance, and will use these scores to compute incentive

and disincentive fees. While the averaging technique will be used to generate the summary scores, it must be stressed that the minimum requirement is to have all groups meet the performance goals. The Contractor shall meet with the COTR after each Comprehensive Evaluation to discuss remediation plans for any items that do not meet the performance goals, whether or not the performance goal is met when scores are averaged across multiple samples. Continued failure to perform, as determined by the Owner Agency or its designee(s), may result in default.

E.8.2 In computing the overall summary Performance Score, the Owner Agency shall apply their preferred for the various categories; the example below uses the weights shown in the table for the various categories.

Category	**Category Weight**[1]
Safety	TBD
Construction Congestion	TBD
Quality	TBD
Time	TBD
Cost Savings	TBD
Customer Focus/User Satisfaction	TBD
Environmental	TBD
Innovation	TBD
Total	**100**

[1]The Owner Agency will determine the weights for each Category. The weights should add to 100.

E.8.3 The COTR will compare the results of the Comprehensive Evaluation with prior years' inspections and with the baseline conditions. The COTR will report all failures to meet performance goals. The contractor shall advise the COTR of the actions proposed to remedy any deficiencies along with the time frame for taking those actions. The Contractor must repair all noted problems to meet the performance goals.

E.8.4 To compute the Total score for the Comprehensive Evaluation, the Owner Agency will:

- average the sample scores for each performance measure
- perform a weighted average of the performance measure scores to compute the score for the Category
- perform a weighted average of the Category scores to compute the Total score.

SAMPLE RFP SECTION F ADDITIONAL MATERIALS

F.3 QUALITY MANAGEMENT PLAN

F.3.1 Quality Management Plan

Within 30 Days from the Contract Award Date, the Contractor shall submit to the COTR an electronic copy and 10 bound paper copies of a detailed Quality Management (QM) Plan that describes by Category how the contractor shall monitor its own performance to ensure that Performance Goals are achieved. The QM Plan shall define the procedures to ensure that all work meets or exceeds the Performance Goals. The QM Plan also shall define reporting procedures to the Owner Agency to ensure approval of proposed work, services, and products. The Contractor is allowed to deviate from the Plan only with the express consent of the COTR. The Contractor must highlight innovations that deviate from the specifications set forth in the Owner Agency Standard Specifications in the Quality Assurance/Quality Control Plan. If approved in writing by the CO, these deviations shall become the specifications for this contract. Otherwise, the standard specifications shall govern all work performed under this contract.

A. The Contractor must consult with the COTR and appropriate Owner Agency staff in preparing the QM Plan. The following elements shall be required:

1. The Contractor's patrolling QA/QC Plan to identify areas that are not meeting the Performance Goals.
2. The Contractor's QA/QC Plan to ensure that quality work is performed.
3. The Contractor's QA/QC Plan to monitor quality after work has been completed.
4. The Contractor's facilities, equipment, and materials available to perform all tasks set forth in this RFP.
5. The Contractor's QA/QC Plan to ensure that all equipment remains in good working order and is available to perform necessary work.
6. The Contractor's QA/QC Plan to ensure that all materials meet appropriate specifications, are stored properly, and are available as needed.
7. The Contractor's QA/QC Plan to conduct regular public surveys to determine the public's satisfaction with the overall quality and condition of the work covered under this contract.
8. The Contractor's QA/QC Plan for reporting repair needs that are outside of the scope of this contract.
9. The Contractor's QA/QC Plan for proposing and receiving approval on any innovations.

SAMPLE RFP SECTION H ADDITOINAL MATERIALS- SPECIAL CONTRACT REQUIREMENTS

H.1 PERFORMANCE INCENTIVES AND DISINCENTIVES

H.1.1 The Contractor shall be eligible for an incentive fee or subject to a disincentive fee for each Category, which is tied to the Comprehensive Evaluation, and is based upon performance throughout the year. This award is designed to reward performance that meets or exceeds the Performance Goals. If the Owner Agency determines the Contractor's performance to be above or below the Performance Goals for the Project, the Owner Agency shall compute the incentive fee or disincentive fee as described in Sections H.1.2, H.1.3, H.1.4, H.1.5 and H.1.6.

H.1.2 The amount the Contractor is eligible to receive for performance in a given year shall not exceed five percent (5%) of the fixed price amount paid to the Contractor under this contract for that year. The disincentive fee shall also not exceed five percent (5%) of the fixed price amount paid to the Contractor under this contract for that year. After the Comprehensive Evaluation, the Performance Evaluation Board (PEB) shall advise the Contracting Officer on the amount of the total incentive fee to be received by the Contractor or the disincentive fee to be applied to the Contractor. The Contracting Officer shall exercise the independent discretion in determining whether or not to award to the Contractor an incentive fee or assess a disincentive fee.

H.1.3 In advising the Contracting Officer on the amount of the incentive fee to be received or the disincentive fee to be applied, the PEB shall examine each of the Performance Goals and, based upon the Contractor's reports and reports by Owner Agency personnel, determine the extent to which the Performance Goals have been met or exceeded. The PEB shall generate a PEB score with a scale of 0 to 100 with 40 of the 100 points being made up of Monthly Evaluation scores, 50 of the 100 points being made up of the Comprehensive score, and 10 of the 100 points for a subjective score (See section H.1.4). These proportions or "weights" reflect the Owner Agency's priorities, and the fact that the Contractor must perform throughout the year, and not just at the time of the Comprehensive Evaluation. The Owner Agency will calculate the Monthly Evaluation score portion of the PEB score by taking the average of the 11 Monthly Evaluation scores (out of 100) for that year and multiply by 40/100. The Owner Agency will calculate the Comprehensive score portion of the PEB score by dividing the Comprehensive Evaluation score (out of 100) by 2. The PEB shall carefully consider the results of the Monthly and Comprehensive Evaluations in determining the award.

H.1.4 The final 10% of the PEB score shall be subjective, and shall be assigned by the PEB. In assigning this score, the PEB shall consider to what extent the Contractor has met the Performance Goals system-wide (score of 4 or higher

for each sample in the Comprehensive Evaluation), as well as to what extent the contractor has met the Partnering goals that shall be established in the Partnering process.

H.1.5 The PEB will compute the PEB score by summing the Monthly Evaluation score portion, the Comprehensive Evaluation score portion, and the subjective score, as described in H.1.3 and H.1.4.

H.1.6 In advising the Contracting Officer on the incentive fee or the disincentive fee, the PEB shall use the table below. If the PEB score falls between two scores in the table, the PEB will compute the Incentive Fee percentage or Disincentive Fee percentage using a proportional scale. For example, if the PEB score were 98, the percentage of the 5% Incentive Fee awarded would equal:

Step 1. Looking at the table below the example PEB score of 98 falls between the PEB scores of 97.5 and 100 with corresponding percentage of 5% Incentive Fee Awarded of 95 and 100 respectively.

Step 2. Calculate the difference between the example PEB score of 98 and the next lower PEB score from the table below (which is 97.5). The difference is: 98-97.5=0.5.

Step 3. Divide the 0.5 from step 2 by the difference between the PEB scores of (100-97.5=2.5), which would be 0.5/2.5=0.2

Step 4. Multiply 0.2 from step 3 by the corresponding differences between the Percentage of 5% Incentive Fee Awarded (100-95=5), which would be 0.2x 5=1.0.

Step 5. To obtain the Percentage of 5% Incentive Fee Awarded for the example PEB score, add 1.0 from step 4 to the Percentage of 5% Incentive Fee Awarded for a score of 97.5 (95), which would be 95+1.0=96

Steps 1-5 as described above, can also be shown in the following mathematical equation:

95+(((98-97.5)/(100-97.5))*(100-95)) = 96

Table 4. Percentage of Incentive and Disincentive Fee by PEB Score

PEB Score	Percentage of 5% Incentive Fee Awarded	Percentage of –5% Disincentive Fee Applied
100	100	0
97.5	95	0
95	85	0
92.5	75	0
90	65	0
87.5	50	0
85	0	0
82.5	0	0
80	0	0
77.5	0	45
75	0	60
72.5	0	75
70	0	95
Less than 70	0	100

H.1.7 Example of Incentive Fee Calculation

Assumptions:

A. The 11 Monthly Evaluation Scores (there is no Monthly Evaluation in the month that the Comprehensive Evaluation is conducted):

78 82 86 87

80 84 86 87

80 86 87

B. Comprehensive Evaluation Score: 87

C. Subjective Rating Score from the PEB: 8

D. Amount paid to the Contractor during the period being evaluated: $10M

Calculation:

Step 1. Find the average of the 11 Monthly Evaluation Scores by adding the eleven Monthly scores and dividing it by eleven, which is: (78+80+80+82+84+86+86+86+87+87+87)/11=83.9

Step 2. As described in section H.1.2 "The PEB shall generate a PEB score with a scale of 0 to 100 with 40 of the 100 points being made up of Monthly Evaluation scores, 50 of the 100 points being made up of the Comprehensive Evaluations score, and 10 of the 100 points for a subjective score (See section H.1.3)." Take 40% of the average of the Monthly Evaluation scores (83.9) calculated in step 1 above, which is: 0.4 x 83.9 = 33.6

Step 3. The PEB Score would be equal to 33.6 from step 2 plus 50% (50/100=.5) of 87.5 (assumption B), plus 8 (assumption C) which is equal to 85.1 (as shown in the following mathematical equation): 33.6 + (.5 x 87.5) + 8 = 85.1

Step 4. In order to calculate the Percentage of 5% Incentive Fee Awarded, follow the steps 1-5 of section H.1.6 as follows:

Step 5. Looking at table in section H.1.6 the calculated PEB score of 85.1 falls between PEB scores of 85 and 87.5 with corresponding Percentage of 5% Incentive Fee Awarded of 0 and 50 respectively.

Step 6. Calculate the difference between the calculated PEB score of 85.1 and the next lower PEB score from the table shown in section H.1.6 (85). The difference is: (85.1-85=0.1).

Step 7. Divide the 0.1 from step 6 by the difference between the PEB scores of (87.5-85=2.5), which would be 0.1/2.5=0.04

Step 8. Multiply 0.04 from step 7 by the corresponding differences between the Percentages of 5% Incentive Fee Awarded (50-0=50), which would be 0.04x50=2

Step 9. To obtain the Percentage of 5% Incentive Fee Awarded, add 2 from step 8 to the corresponding Percentage of 5% Incentive Fee Awarded of 0, which would be 0+2=2

Steps 5-9 as described above can also be shown in the following mathematical equation:

$$0 + \frac{(85.1-85)}{(87.5-85)} \times (50-0) = 2\%$$

Step 10. So if the price of the Category over the period being evaluated was $10M, the incentive fee awarded would be 2% (2/100=0.02) of 5% (5/100=0.05) of $10M, which can mathematically be shown as:

$$0.02 \times 0.05 \times \$\ 10M = \$10{,}000$$

Enhanced Low Bid Awards

Process

Traditionally, the majority of construction contracts have been awarded using the low bid process. It has been noted for certain special types of projects that the Enhanced Low Bid process may be more effective than the traditional low bid process. A sample Enhanced Low Bid process is shown in the figure below.

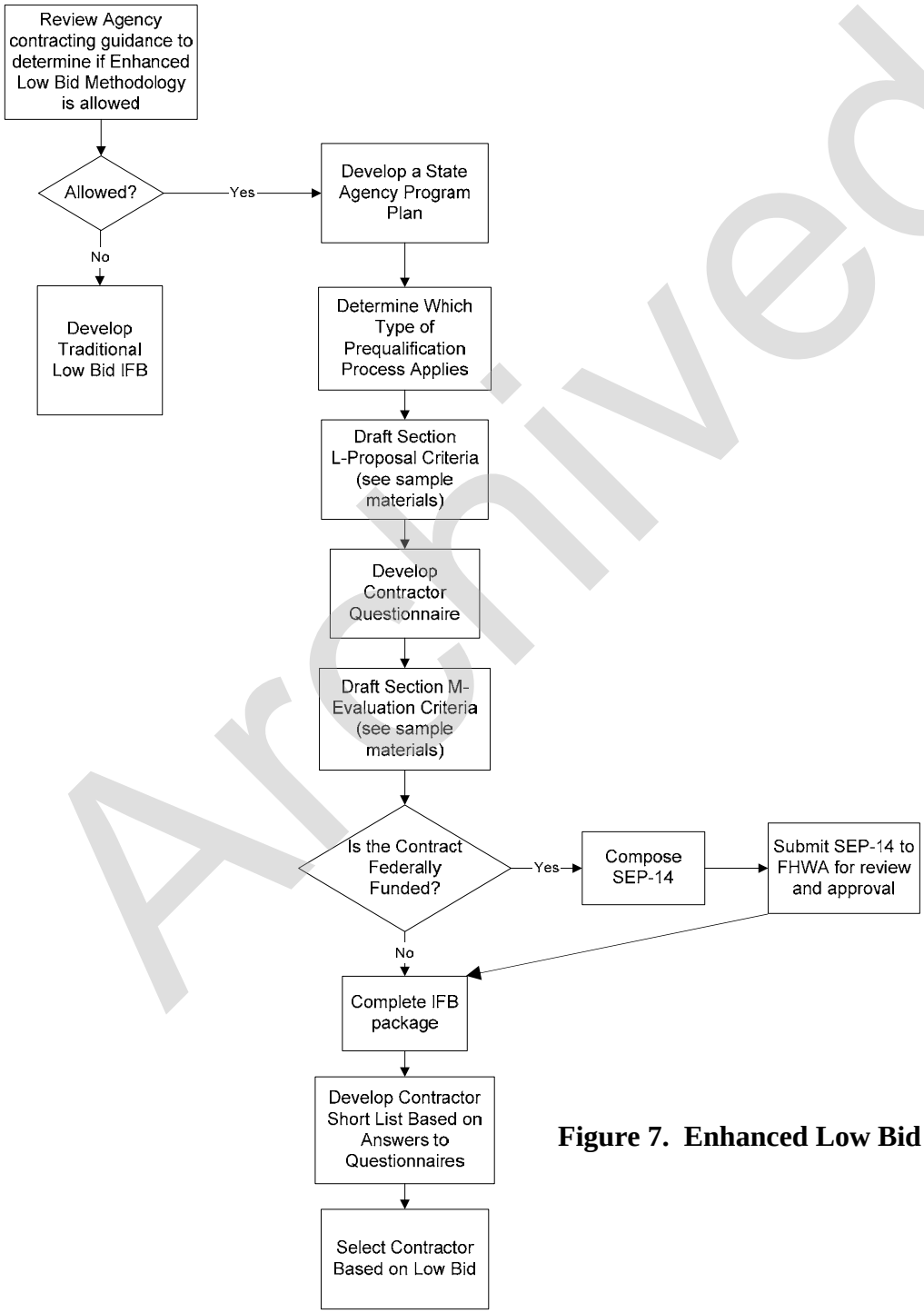


Figure 7. Enhanced Low Bid Process

Enhancements are focused on embedding additional measures into Owner Agency program plans and tightening the contract requirements by establishing prequalification standards for the contractor. The States that cannot exercise best-value procurement can potentially benefit from an Enhanced Low Bid process.

State (Owner Agency) Program Plan

The State (Owner Agency) may establish a program plan based on a thorough evaluation of project requirements. The plan may include some of the following elements deemed applicable:

a. Establishing the roles and responsibilities for all parties involved in the construction contract and identifying the major regulatory elements of the work;

b. Defining the contractor's pre-qualification criteria by assessing financial responsibilities and work performance capabilities;

c. Establishing and requiring a Partnering relationship with stakeholders;

d. Establishing Incentive programs and measures to promote the contractor's effort and contribution toward improved work methods;

e. Establishing Incentive and Disincentive programs and measures to hold the contractor liable for work slippage and non-compliance issues.

f. Outlining prequalification questionnaires that would clearly reveal the needed information.

g. Establishing a State DOT evaluation report with ratings of a contractor's performance of a contract upon completion of the project, addressing his/her performance in safety, quality, schedule, cost, innovation, customer satisfaction and his/her relationship with State representatives, subcontractors, addressing dispute resolutions, change orders, etc. This evaluation report rating would be maintained by the State DOT to be used as a basis for future prequalification criteria.

h. Establishing a self reporting process with ratings prepared by the contractor on his performance upon completion of the project, addressing his/her performance in safety, quality, schedule, cost, innovation, customer satisfaction and his/her relationship with State representatives, subcontractors, addressing dispute resolutions, change orders, etc. This evaluation report rating would be maintained by the State DOT to be used as a basis for future prequalification criteria.

Upon establishing any of the above measures and including them in the State DOT's program plans, the traditional low bid process can be enhanced by tightening the contract requirements and establishing prequalification standards for the contractor.

Contractor Pre-Qualification Selection Criteria and Process:

Currently there is a wide range of prequalification criteria used by State DOTs across the country. The most common practice is the prequalification method based on the contractor's financial capacity and some related experience. Most States have developed

questionnaires included in the application process addressing financial statements, experience, and equipment. Depending on the State agency, these questionnaires can be a simple one page form up to a comprehensive booklet with extensive guidelines. These questionnaires are rated differently by each State. Example rating methods used include:

1) No defined rating system – This method should be discouraged as it does not provide any valuable information.
2) Pass or Fail – This rating method does not provide a good scale as to how well the contractor is meeting the qualification criteria. This rating method could also be unfair to selection of the right contractor for the project.
3) Equally weighting each question - This method does not allow full coverage of project specific concerns.
4) Systematic rating scale of "5" excellent to "1" unacceptable based on specified criteria. This method may be more effective than the other rating systems.

The improvement of the prequalification selection process will largely depend on improving the questionnaires to reflect the right type of information and by using a more robust rating system. Based on the size and the type of projects, the prequalification selection criteria can be enhanced as the complexity increases through each of the following types as described below. If the State DOT uses any Enhanced Low Bid process then they may need to go through the FHWA SEP-14 process (please refer to section if this frame work on the SEP-14 process). The State DOT can use one of the following types of prequalification processes that suits their project and/or organization need.

TYPE A:

As it has widely been practiced in the traditional low bid process, the small construction projects not exceeding $500,000 in price may only be subject to a simplified financial questionnaire including the company's relevant experience and available equipment.

TYPE B:

Major projects can benefit from a more comprehensive questionnaire to be established by the State DOT covering the needs of the project in the areas of safety, quality, schedule, cost, innovation, customer satisfaction, dispute resolution, change orders, etc.

TYPE C:

The contractor shall provide written documentation to demonstrate his/her ability to perform the **type** of work or a similar type. The contractors shall provide their list of projects with work performed within the last five years with detailed scopes of work. The contractor must be able to demonstrate his/her ability to manage the **size** of the work in terms of the construction contract dollar value and manpower to perform the work. The State officials need to verify to see if the contractor is able to meet bonding and insurance requirements. The State officials shall assess the contractors' documentation as outlined in the sample IFB Section M provided in the following section, per the rating scale shown in Table 5. The scoring may vary according to its relative importance to the project. There are several scoring options available; however the five-level scoring as shown in

section M.3 Qualification Evaluation Standards Table 6 provides a broad, fairly objective range for rating different categories.

TYPE D:

State agencies that are not restricted with their low bid process may benefit from developing a two-phase assessment procedure to short list the number of contractors during phase I process.

Phase I – During Phase I, the State officials will verify to see if the contractor is able to meet the bonding and insurance requirements. The State officials will evaluate the contractor's documentation to determine their abilities based on type and size of work. The contractors that cannot demonstrate their ability to perform either the type or the size of the work will be disqualified for further evaluation under Phase II.

Phase II –The qualified contractors under Phase I shall be further subject to the requirements listed in Section L.X under a pre-qualification package and Section M as listed below for final selection.

This two-phase process should provide time savings for both the State officials, who will review fewer documents during Phase II, and for the disqualified contractors that will not be subject to the Phase II procedures.

Sample Materials

The sample materials provided are additional materials to be used for Enhanced Low Bid versus the traditional Low Bid.

EXAMPLE SECTION L ADDITONAL MATERIALS

L.X CONTRACT AWARD

The owner Agency intends to award a single contract to the qualified Offeror with the lowest acceptable bid.

L.X PRE-QUALIFICATION PACKAGE

For qualification purposes the Offeror shall:

1. Submit qualification resumes for all key project personnel. The resumes should address their pertinent qualifications, relevant experience and specialized training. All key personnel resumes are subject to approval/disapproval by State officials. The State official may additionally require a personal interview with qualified applicants as deemed necessary.
2. Submit the corporate safety plan addressing the safety and health plan in regard to regulatory compliance and their employees' disciplinary actions program plan.

3. Submit the Company's Accident summary list including: total numbers of Fatalities; Incident Rate with man-hours worked for each year of the last five years.
4. Provide company's EMR for the last 5 years.
5. Submit copies of all safety/environmental enforcement actions that resulted in convictions or findings against the company and man-hours worked for each year of last five years.
6. Provide the Company's history of relevant or similar jobs completed.
7. Submit the Corporate Environmental Program.

L.X PROPOSAL PRICES

EXAMPLE SECTION M ADDITIONAL MATERIALS

M.1 AWARD

The contract shall be awarded to the qualified Offeror with the lowest acceptable price.

M.2 RATING FOR PREQUALIFICATION

The owner Agency will use the following table to rate the prequalification evaluation criteria:

The Technical Rating Scale is as follows:

Table 5. Technical Rating Scale

Numeric Rating	Adjective	Description
1	Unacceptable	Fails to meet minimum requirements; major deficiencies which are not correctable.
2	Poor	Fails to meet requirements, significant deficiencies that may be correctable.
3	Acceptable	Meets requirements; only minor deficiencies which can be clarified.
4	Good	Meets requirements and exceeds some requirements; no deficiencies.
5	Excellent	Exceeds most, if not all requirements; no deficiencies.

For example, if a factor has a point evaluation of 0 to 20 points, and (using the appropriate Rating Scale) the Owner Agency evaluates as "good" the part of the proposal applicable to the factor, the score for the factor is 16 (4/5 of 20).

M.3 QUALIFICATION EVALUATION STANDARDS

The Owner Agency will use the table below in evaluating Offerors' qualifications.

Table 6. Draft Evaluation Criteria

Evaluation Criteria (Described Below)	Numeric Rating				
	Unacceptable	Poor	Acceptable	Good	Excellent
	1	2	3	4	5
M.3.1					
M.3.2					
M.3.3					
M.3.4					
M.3.5					
M.3.6					
M.3.7					

M. 3.1 Evaluation Criteria for Resumes for Key Personnel

The key personnel resumes shall be reviewed by the Owner Agency's designated person for competency, relevancy or similar type of experience.

M. 3.2 Evaluation Criteria for Corporate Safety Plan

The Owner Agency's designated person shall evaluate the contractor's Corporate Safety Plan for their compliance with local/State/Federal rules and regulations and the company's consideration of safety of its employees and the general public. The contractor's Corporate Safety Plan at the minimum shall address their safety policy, commitment to safety, detailed disciplinary action to be taken with respect to employees violating safety requirements, personnel safety responsibilities, personnel safety training, personal protective equipment, accident / incident reporting procedure and investigations, emergency procedures guidelines, and their safety incentive plan.

M. 3.3 Evaluation Criteria for Company's Accident Rate

The Owner Agency's designated person shall evaluate the Company's accident summary list including: Lost Time Accidents, total numbers of Fatalities; Incident Rate with man-hours worked for each year of the last five years in comparison with similar type projects within the area or the State. A good safety record with a low incident rate generally is clear evidence of company's commitment to safety.

M.3.4 Evaluation Criteria for Company's EMR

The Owner Agency's designated person shall evaluate the submitted Company's EMR (experience modification rating) from its insurance provider. An EMR below 1.0 means it is better than average. An EMR below 0.8 or 0.7 is even better. Many owners may consider not allowing the contractor to bid if their EMR is above 1.0 or 0.8.

M.3.5. Evaluation Criteria for Company's Safety/Environmental Violations

The Owner Agency's designated person shall evaluate the submitted Company's safety/environmental violations received from any government agencies such as OSHA and EPA. Generally issued citations are cause for alarm. The Owner Agency may further request the company's OSHA records (OSHA Log 300) for all its work related injuries for the past several years. The owner Agency can also review the company's history of OSHA inspections as posted on the OSHA website searchable by company's name.

M.3.6 Evaluation Criteria for Company's History of Similar Jobs

The Owner Agency's designated person shall evaluate the submitted Company's similar jobs while considering the relevancy to the type, size (dollar value and man-power) committed to the project in order to evaluate the Company's capability.

M. 3.7 Evaluation Criteria for Corporate Environmental Program

The owner Agency's designated person shall evaluate the contractor's Corporate Environmental Program for their compliance with local/State/Federal rules and regulations and the company's consideration of environmental issues addressing its employees, the job site, general public and its impact within the surrounding environment. The contractor's Corporate Environmental Program at the minimum shall address their environmental policy, commitment to the environment, detailed disciplinary action to be taken with respect to employees violating environmental requirements, personnel responsibilities, personnel environmental training, personal protective equipment, environmental accident / incident reporting procedure and investigations, emergency procedures guidelines.

M.4. PRICE CRITERIA

The owner Agency will only consider prices from Offerors which the owner Agency has determined are qualified under M.3. The owner Agency shall award the Contract to the qualified Offeror with the lowest acceptable price.

Best Value Awards

If the Best Value award methodology is chosen, the following sections provide examples of RFP section L - Instructions, Conditions and Notices to Offerors - and section M - Evaluation Criteria. Although the Best Value Award process is found primarily in design-build contracts, this methodology can prove very valuable in non design-build projects to select the contractor as well as to stimulate innovation and allow flexibility in approach. For example innovation can be proposed in the implementation of the Traffic Management Plan, or in the types of materials used in the construction or in the scheduling. More guidelines and comprehensive examples of the Best Value Award process are presented in *Best-Value Procurement Methods For Highway Construction Projects*; NCHRP Project 10-61.

Process

Use of the Best Value process depends upon the project, the selection criteria used for the project, and the decision factors that are used when a project is considered for implementation. Figure 1 outlines the Best Value process. When making a determination about a Best Value project, an Owner Agency should first consider and identify the potential benefits that a Best Value process would offer as applicable to the specific project. Some examples of these benefits are flexibility, improved insight into the contractor's proposed approach, cost, time, quality, improved safety and durability. The Agency should also consider if the project under consideration would be best served by a Best Value type of contract (i.e. fostering innovation, project complexity, or other agency specific factors). If an agency determines that the Best Value would be beneficial, the evaluation criteria upon which the proposal will be assessed should also align with the project goals.

***MDOT M-115 Pilot Project**:*

*MDOT awarded the project to the Contractor whose proposal represented the Best Value considering price, goals, and innovations. The Selection Team determined a technical score for each Contractor from the information provided in the proposal and calculated the corresponding "Cost Multipliers". MDOT's Bureau of Finance and Administration staff applied the "Cost Multiplier" to each proposal bid to determine the Best Value (Best Value = Contractor's Bid * Cost Multiplier).*

For each of the appropriate parameters, the relevant evaluation criteria are selected. There will always be a cost parameter with evaluation criteria in the final set. If the schedule is fixed by the agency, then no schedule parameter will be selected, but if the contractor is allowed to propose some element of the schedule, then it will also be included. Next, the type of Best Value award is selected based on project characteristics.

The Owner Agency must then decide what selection method it will use to evaluate the proposals. One of the most flexible methods to determine the score is by using weighted averages which assign scores and weights to each evaluation criteria to ultimately determine the contractor proposal that provides the Best Value solution to the agency. This method also allows the Owner Agency the ability to most completely control the relationship between the mathematical outcome and the project's requirements.

Another selection method is the Cost-Technical Tradeoff type of evaluation which uses qualitative and quantitative methods to compare the technical scores and price scores for

Offerors. It also takes into consideration the incremental differences in the scores' value to the agency in order to make the award.

Once the evaluation is completed, the evaluation panel would compute the scores and award the project to the Offeror that best satisfied the formula's objective decision criterion. The procurement process could include the opportunity for discussions and final proposals, if permitted by enabling legislation and deemed advisable by the procuring agency.

The Owner Agency may also consider implementing a two step Best Value process which may assist in drawing a larger pool of bidders, and allow for the submission of alternate technical proposals. Under this method, the Owner Agency screens and pre-qualifies Contractors to develop a short list of qualified candidates. After the Agency has short-listed the candidates, the cost, approach, and schedule would be evaluated and scored.

MDOT M-115 Pilot Project:

MDOT set BASELINES for several project goals. The Contractors had the option to propose goals that were more aggressive than the baselines. The Selection Team assigned additional points to those Contractors who proposed more aggressive goals. The goals submitted by the Contractor became the new goal baseline for applying incentives and disincentives.

Example: Pavement Warranty

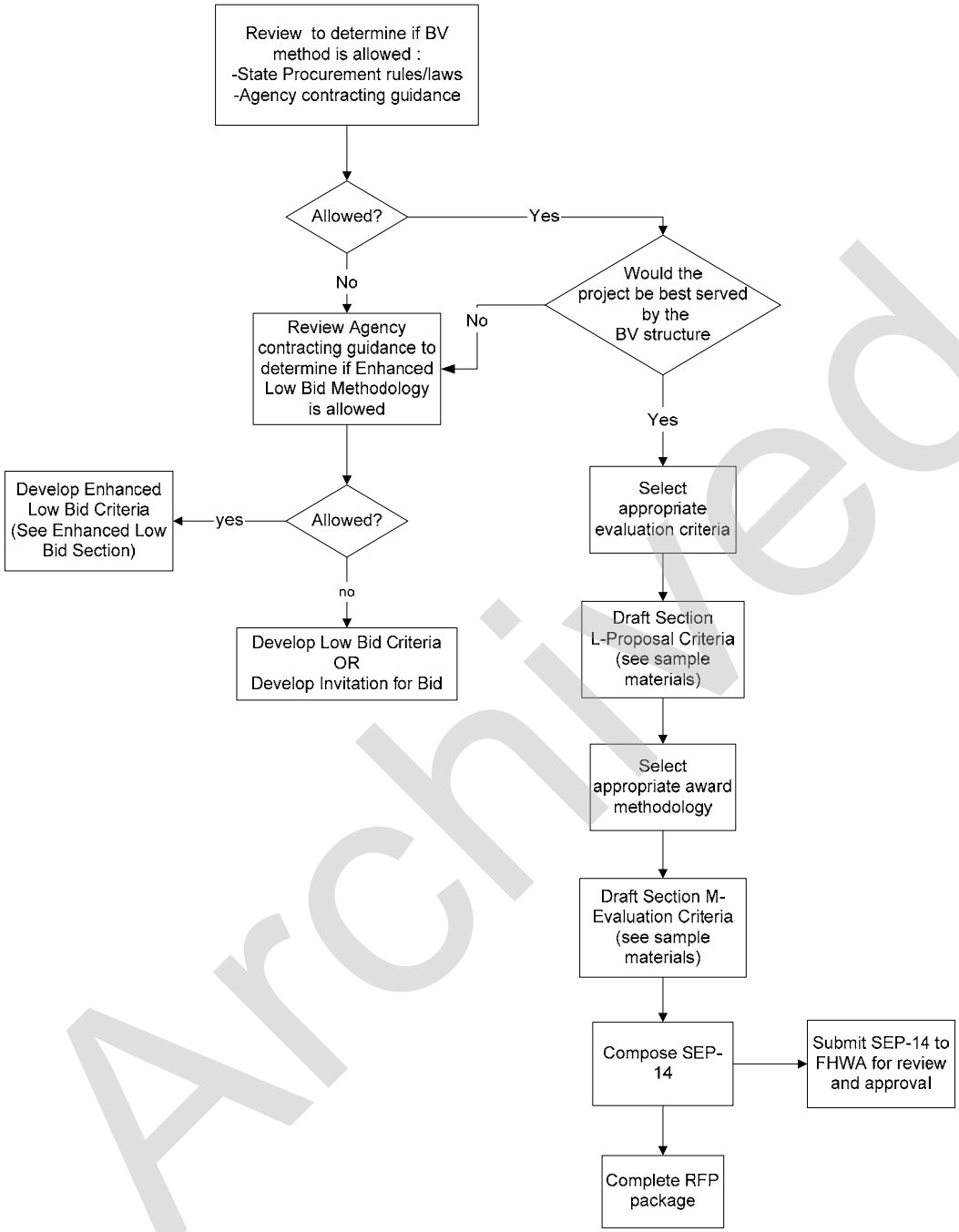
- *5 years – 0 points (Baseline)*
- *6 years – 15 points*
- *7 years – 30 points*
- *8 years – 50 points*

Best Value Considerations

While considering using a Best Value process, the Owner Agency should also consider the benefits and challenges to implementation. The Best Value process can foster innovation much more quickly than the conventional Low Bid process. In addition, in order to get the most from this contracting type, the Owner Agency and the selected Contractor should commit to entering into a partnering arrangement (mutually designed and agreed upon) to foster trust and work cooperatively to solve problems and issues throughout the life of the contract. Such partnering relationships can also result in enhanced performance. Finally, the Best Value process has the potential to improve performance and the value of the construction process over the long term. One challenge of implementation is to keep the selection criteria as objective as possible so that the Owner Agency can determine (and defend) which Offeror presents the Best Value to the Agency.

Figure 8 outlines a Best Value process, and points out where example materials are being offered in this Guide.

Figure 8. Best Value Process[2]



[2] Adapted from: Best-Value Procurement Methods for Highway Construction Projects Preliminary (Draft Final Report); Scott, Sidney; Molenaar, Keith; Gransberg, Douglas; Smith, Nancy; Transportation Research Board National Cooperative Highway Research Program NCHRP 10-61; pp. 131-144.

Lessons Learned from Real-World Performance Contracts

The following Best Value lessons have been learned from real-world performance contracts:

- Use the Best-Value award if appropriate and if it is allowed
- Determine compatibility with your contracting regulations
- Be innovative in making the contract fit the regulations
- Allow enough time for RFP development, approval, advertising, and award
- Determine who needs to review/approve the RFP and involve them early in the process
- Specify how innovative methods/technologies will be approved if they are different from the standard specifications
- Plan out and specify what happens if the project doesn't work
- Identify the PM/PE/COTR and involve him/her throughout the entire process

Lessons Learned from MDOT-115 Pilot Project

The following Best Value lessons have been learned from the pilot project:

- Indicate in the RFP that innovations must meet not only AASHTO, but Agency standards as well
- Allow Contractors to propose higher outcomes and evaluate accordingly.

Sample Materials

To assist in accelerating the development of Owner Agency materials, draft templates and RFP sections are provided below. If using Best Value, the Owner Agency will need to go through FHWA's SEP-14 process. We have provided guidance and sample materials for the SEP-14 process in a separate section of the Guide.

SAMPLE RFP SECTION L - INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

L.1 CONTRACT AWARD

L.1.1 **Most Advantageous to the Owner Agency**

The Owner Agency intends to award a contract resulting from this solicitation to the responsible Offeror whose offer conforming to the solicitation shall be most advantageous to the Owner Agency with regard to cost or price, technical and other factors, specified elsewhere in this solicitation considered.

L.1.2 **Initial Offers**

The Owner Agency may award contracts on the basis of initial offers received, without discussion. Therefore, each initial offer shall contain the Offeror's best terms from a standpoint of cost or price, technical and other factors.

L.2 PROPOSAL FORM, ORGANIZATION AND CONTENT

L.2.1 Offerors shall note that this is a request for proposals and not an invitation for bids (IFB). Award shall not be made solely on price (see Section M) and the Owner Agency reserves the right to hold discussions and seek clarifications prior to award.

L.2.2 A Pre-Proposal Conference shall be held for the purpose of answering any questions relative to the RFP and the scope of services on date at location at time. All interested bidders must attend.

L.2.3 One original and 10 copies of the written proposals shall be submitted in three parts, titled "Technical Proposal", “Staffing/Management/Quality Management/Past Performance/Facilities and Equipment Proposal” and "Price Proposal". Proposals shall be typewritten in 12 point font size on 8.5” by 11” bond paper. Telephonic and telegraphic proposals shall not be accepted. Each proposal shall be submitted in a sealed box conspicuously marked: "Proposal in Response to Solicitation No. ***(insert solicitation number, Title and name of Offeror)."***

L.2.4 Offerors are directed to the specific proposal evaluation criteria found in Section M of this solicitation, **EVALUATION FACTORS FOR AWARD**. The Offeror shall respond to each factor in a way that shall allow the Owner Agency to evaluate the Offeror's response. The Offeror shall submit information in a clear, concise, factual and logical manner providing a comprehensive description of program services and service delivery. The information requested below for the technical proposal shall facilitate evaluation and Best Value source selection for all proposals. The technical proposal must contain sufficient detail to provide a clear and concise representation of the requirements in the statement of work.

L.2.5 Technical Proposal (not to exceed __ pages)

A. Technical proposals must provide a detailed description of how the Offeror intends to use innovation, complete the construction, and meet or exceed the performance goals set forth in this RFP. The technical proposal must clearly indicate how the Offeror would proceed if awarded the contract. In addition, the Offeror must provide a detailed description of how the proposed approach will enable the project to be constructed faster, safer, with less traffic congestion, with higher quality, and with improved user satisfaction.

B. The technical proposal must be organized as follows:

1. *Executive Summary (not to exceed 5 pages)*: Provide an overview of the technical approach. Clearly include any assumptions made in responding to the RFP and any exceptions made in the offer. The executive summary also must identify any uncertainties and briefly explain how the Offeror intends to address those uncertainties.

2. *Summary of Work Plan*: Although an acceptable work plan shall be required 60 days after award of the contract, Offerors must explain

how they intend to schedule and complete the construction set forth in the RFP and meet each of the performance goals. The summary must be formatted with individual sections that correspond to the bid tables set forth in Section B. The summary must clearly identify (note the Owner Agency should include any or all of the items in the list below that best reflect the needs of the Agency):

a) The resources, including an adequate line of credit, equipment, materials, and staff, necessary and available to conduct the work;
b) The techniques and practices that shall be used to conduct the work, including any innovative techniques and practices, that may be used over the life of the contract;
c) Any assumptions, deviations, or exceptions to the RFP;
d) Any technical uncertainties and specific proposals for resolving those uncertainties;
e) The Offeror's plan for keeping an adequate supply of materials and labor resources;
f) The Offeror's plan for how they shall prioritize and address activities to ensure safety, including activities or issues that may not be specifically addressed in this Scope of Work.
g) The Offeror's ability to respond quickly to emergency requirements that may arise.
h) The Offeror's plan for how they shall respond to emergencies -- such as safety hazards or accidents and make the roadway safe and clear for the traveling public.
i) Any other issues the Offeror believes are important to meeting the performance goals set forth in this RFP.
j) List the items of work the Offeror will self perform and how much will be subcontracted (this should be based on the Owner Agency's self performance requirement).
k) The Offeror's specific plan for how they shall achieve or exceed the performance goals in the categories of safety, construction congestion, quality, time, cost effectiveness, customer satisfaction, environmental and innovation.

3. *Summary of Traffic Management Plan including a Traffic Control Plan*. Although an acceptable traffic control plan shall be required 60 days after award, Offerors must include a summary of their plans to control traffic in and around work areas, including alternate traffic routes if applicable. This must include information regarding the following:

a) The Offeror's plan for implementing the Traffic plans and methodology for meeting the performance goals.
b) The Offeror's plan to ensure safety of the public and of employees as well as public information outreach.
c) The resources needed for adequate traffic control including a traffic control plan fit together with the construction schedule/sequencing.
d) The Offeror's plan to implement innovative techniques in implementing the plan
e) How the plan minimizes the impact to the traveling public.
f) The Offeror's plan for meeting the critical traffic control criteria set forth by the Owner Agency.
g) The Offeror's plan for meeting specific construction congestion and safety goals.

L.2.6 **Staffing/Management/Quality Management/Past Performance /Facilities and Equipment/Schedule Proposal (not to exceed __ pages)**

A. Staffing/Management/Quality Management/Past Performance/Facilities and Equipment/Schedule proposals must clearly describe how the Offeror intends to staff the project and how the Offeror intends to proactively manage staff and information to ensure that work is completed and that the performance goals set forth in this RFP are met. If subcontractors are used, the staffing/management proposal must describe how the Offeror intends to manage and provide oversight of all subcontractor activities.

B. The Quality Management Plan is a key element to the success of any performance contract, and it outlines Quality Control and Quality Assurance for the project. The proposal must describe the Offeror's plans for managing quality both in identifying needs and inspecting quality of work performed.

C. Related experience and past performance on related projects of similar size and scope must also be described. As noted in Section M, past performance and related experience are key evaluation criteria.

D. The Staffing/Management/Quality Management/Past Performance/Facilities and Equipment/Schedule Proposal must be organized as follows:

1. *Executive Summary (not to exceed 5 pages)*: Provide an overview of how the Offeror intends to staff, manage, and implement the Quality Management Plan for all of the tasks in this RFP.

2. *Summary of Staffing/Management Plan*: Although an acceptable staffing/management plan shall be required 60 days after award,

Offerors must explain how they intend to provide staff and management support to ensure that all tasks are completed to the performance goals set forth in this RFP. At a minimum, Offerors must describe:

a) The overall project manager, construction superintendent, quality management engineer, and work zone traffic safety engineer including resumes;
b) How the Offeror intends to ensure that staff (key and non-key), including staff employed by subcontractors, shall be available throughout the life of the contract for routine and emergency/fast response activities;
c) The Offeror's plan to ensure that all employees, including subcontractors, have adequate training and understand the requirements of their functions;
d) How the Offeror intends to make management of the contract proactive;
e) The Offeror's ability to control prices and reduce financial risk to the government;
f) The Offeror's ability to attend regular meetings with the COTR and FHWA officials on short notice;
g) The procedures and plans for managing subcontractor performance;
h) The procedures and plans for labor/material supply and inventory;
i) The Offeror's training plan to ensure properly trained personnel; and,
j) The Offeror's plan to use certified disadvantaged business enterprises.

3. *Summary of Quality Management Plan*: Although an acceptable quality management plan shall be required after award of the contract, Offerors must include information regarding the key elements of that plan, including:

a) CPM analysis and software
b) The Offeror's plan to proactively identify quality issues and needs in a timely manner.
c) The Offeror's plan to ensure that quality work is performed, showing how the performance goals are to be met.
d) The Offeror's plan to monitor quality after work has been completed.
e) The Offeror's plan to ensure that all equipment remains in good working order and is available to perform work as needed.

f) The Offeror's plan to ensure that all materials meet appropriate specifications and are readily available.
g) An outline of the Offeror's testing and workmanship concepts, testing schedules, and information management process.
h) The Offeror's plan to cooperate with the State's random testing/inspection assurance program (States should have such a program in place).
i) The Offeror's specific plan on how they will meet the standards of the quality goals
j) The Offeror's Environmental Quality Management Plan.

4. *Experience and Past Performance*: Offerors must describe their experience, as well as the experience of any proposed subcontractors, in conducting construction projects of similar scope, in applying innovative construction/ work zone practices, and in project management for projects of comparable size, and complexity. Offerors must include:

a) A brief description of relevant specific experience, including the budget for the project and the period of performance;
b) A brief description of the relevant project management experience;
c) A point of contact that may be used as a reference; and
d) A listing of key personnel involved in the project that also are proposed in response to this RFP.
e) A description of compliance with project schedules.
f) A brief description of the previous innovations used to complete projects of similar size and scope and whether those innovations are proposed on this proposal.

5. In addition to a narrative presentation of this information, Offerors must provide an experience and past performance matrix. The form for this matrix is included as an appendix to this RFP.

6. Conflict of Interest statements shall appear in this proposal. It is the Owner Agency's policy to award contracts to only those Offerors whose objectivity is not impaired because of any related past, present, or planned interest, financial or otherwise, in organizations regulated by the Owner Agency or in organizations whose interests may be substantially affected by Owner Agency activities. Based on this policy:

a) Offerors shall describe, in a concise manner, all past, present or planned organizational, financial, contractual or other interests with organizations regulated by the

Owner Agency or with organizations whose interests may be substantially affected by Owner Agency activities, and which is related to the work under this solicitation. The interests described shall include those of the proposer, its affiliates, proposed consultants, proposed subcontractors and key personnel of any of the above. Past interest shall be limited to within one year of the date of the Offeror's technical proposal. Key personnel shall include any person owning more than a 20% interest in the Offeror, and the Offeror's corporate officers, its senior managers and any employee who is responsible for making a decision or taking an action on this contract where the decision or action can have an economic or other impact on the interests of a regulated or affected organization.

b) The Offeror shall describe why, in light of any interests identified in (a) above, performance of the proposed contract can be accomplished in an impartial and objective manner.

c) In the absence of any relevant interest identified in (a) above, the Offeror shall submit in its proposal a statement that to its best knowledge and belief, no affiliation exists relevant to possible conflicts of interest. The Offeror must obtain the same information from potential subcontractors prior to award of a subcontract.

d) The Contracting Officer shall review all statements submitted and may require additional relevant information from the Offeror. All such information, and any other relevant information known to the Owner Agency, shall be used to determine whether an award to the Offeror may create a conflict of interest. If such conflict of interest is found to exist, the Contracting Officer may (1) disqualify the Offeror, or (2) determine that it is otherwise in the best interest of the Owner Agency to contract with the Offeror and include appropriate provisions to mitigate or avoid such conflict in the contract awarded.

e) The refusal to provide the disclosure or representation, or any additional information required, may result in disqualification of the Offeror for award. If nondisclosure or misrepresentation is discovered after award, the resulting contract may be terminated. If after award, the Contractor discovers a conflict of interest with respect to the contract awarded as a result of this solicitation, which could not reasonably have been

known prior to award; an immediate and full disclosure shall be made in writing to the Contracting Officer. The disclosure shall include a full description of the conflict, a description of the action the Contractor has taken or proposes to take, to avoid or mitigate such conflict. The Contracting Officer may, however, terminate the contract for convenience if he or she deems that termination is in the best interest of the Owner Agency.

7. *Schedule*. Offerors must include a detailed base schedule and summary of their plans to use innovative methods to complete the construction project more quickly and efficiently than traditional methods. This must include information regarding the following:

a) The Offeror's plan to innovatively meet the schedule performance goals under this contract. The resources needed for adequate schedule monitoring and tracking.
b) How the plan minimizes the impact of the construction project to the traveling public due to scheduling.
c) How the plan ties in with the Traffic Management and Quality Management plans and CPM.

L.2.7 **Price Proposal**

The price proposal must consist solely of the documents contained in Section B, including pricing data. Offerors may, however, include a narrative describing or explaining their price proposal, and this narrative must not exceed ten pages. This narrative shall describe how the proposed approach meets the cost savings performance goal(s) of this project.

L.3 PROPOSAL SUBMISSION DATE AND TIME, AND LATE SUBMISSIONS, LATE MODIFICATIONS, AND LATE WITHDRAWALS

L.3.1 **Proposal Submission**

Proposals must be submitted no later than ***___ p.m.*** local time on ____. Proposals, modifications to proposals, or requests for withdrawals that are received in the designated Owner Agency's office after the exact local time specified above, are "late" and shall be considered only if they are received before the award is made and one (1) or more of the following circumstances apply:

A. The proposal or modification was sent by registered or certified mail not later than the fifth (5th) calendar day before the date specified for receipt of offers;

B. The proposal or modification was sent by mail and it is determined by the Contracting Officer that the late receipt at the location specified in the solicitation was caused solely by mishandling by the Owner Agency, or

C. The proposal is the only proposal received.

L.3.2 **Withdrawal or Modification of Proposals**

An Offeror may modify or withdraw its proposal upon written, telegraphic notice, or facsimile transmission if received at the location designated in the solicitation for submission of proposals, but not later than the closing date for receipt of proposals.

L.3.3 **Postmarks**

The only acceptable evidence to establish the date of a late proposal, late modification or late withdrawal sent either by registered or certified mail shall be a U.S. or Canadian Postal Service postmark on the wrapper or on the original receipt from the U.S. or Canadian Postal Service. If neither postmark shows a legible date, the proposal, modification or request for withdrawal shall be deemed to have been mailed late. When the postmark shows the date but not the hour, the time is presumed to be the last minute of the date shown. If no date is shown on the postmark, the proposal shall be considered late unless the Offeror can furnish evidence from the postal authorities of timely mailing.

L.3.4 **Late Submissions.** A late proposal, late request for modification or late request for withdrawal shall not be considered, except as provided in this section.

L.3.5 **Late Modifications.** A late modification of a successful proposal, which makes its terms more favorable to the Owner Agency, shall be considered at any time it is received and may be accepted.

L.3.6 **Late Submissions.** A late proposal, late modification or late request for withdrawal of an offer that is not considered shall be held unopened, unless opened for identification, until after award and then retained with unsuccessful offers resulting from this solicitation.

L.4 HAND DELIVERY OR MAILING OF PROPOSALS

DELIVER OR MAIL TO

Office of Contracting and Procurement

Bid Room

L.5 EXPLANATION TO PROSPECTIVE OFFERORS

L.5.1 If a prospective Offeror has any questions relative to this solicitation, the prospective Offeror shall submit the question in writing to the Contracting Officer. The prospective Offeror shall submit questions no later than 15 calendar days prior to the closing date and time indicated for this solicitation. The Owner Agency shall not consider any questions received

less than 15 calendar days before the date set for submission of proposal. The Owner Agency shall furnish responses within 7 days to all the other prospective Offerors. An amendment to the solicitation shall be issued if that information is necessary in submitting offers, or if the lack of it would be prejudicial to any other prospective Offerors. Oral explanations or instructions given before the award of the contract shall not be binding.

L.5.2 Offerors are expected to thoroughly and completely examine this solicitation and all of its attachments, enclosures, and source documents. Failure to do so shall be at the Offeror's risk.

L.6 FAILURE TO SUBMIT OFFERS

Recipients of this solicitation not responding with an offer should not return this solicitation. Instead, they shall advise the Office of Contracting by letter or postcard whether they want to receive future solicitations for similar requirements. It is also requested that such recipients advise the Contracting Officer, of the reason for not submitting a proposal in response to this solicitation. If a recipient does not submit an offer and does not notify the Contracting Officer that future solicitations are desired, the recipient's name may be removed from the applicable mailing list.

L.7 PROTESTS

Any actual or prospective Offeror, or contractor who is aggrieved in connection with the solicitation or award of a contract, must file with the Owner Agency’s Contract Appeals Board (Board) a protest no later than 10 business days after the basis of protest is known or should have been known, whichever is earlier. A protest based on alleged improprieties in a solicitation which are apparent prior to proposal opening or the time set for receipt of initial proposals shall be filed with the Board prior to proposal opening or the time set for receipt of initial proposals. In procurements in which proposals are requested, alleged improprieties which do not exist in the initial solicitation, but which are subsequently incorporated into the solicitation, must be protested no later than the next closing time for receipt of proposals following the incorporation. The protest shall be filed in writing, with the Contract Appeals Board. The aggrieved person shall also mail a copy of the protest to the Contracting Officer for the solicitation.

L.8 SIGNING OF OFFERS

The Contractor shall sign the offer and print or type its name on the Solicitation, Offer and Award form of this solicitation. Erasures or other changes must be initialed by the person signing the offer. Offers signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the Contracting Officer.

L.9 UNNECESSARILY ELABORATE PROPOSALS

Unnecessarily elaborate brochures or other presentations beyond those sufficient to present a complete and effective response to this solicitation

are **not** desired and may be construed as an indication of the Offeror's lack of cost consciousness. Elaborate artwork, expensive paper and bindings, and expensive visual and other presentation aids are neither necessary nor desired.

L.10 RETENTION OF PROPOSALS

All proposal documents shall be the property of the Owner Agency and retained by the Owner Agency, and therefore shall not be returned to the Offerors.

L.11 PROPOSAL PRICES

The Owner Agency will offer a stipend of $____ to unsuccessful qualified bidders whose proposal is deemed technically adequate.

L.12 ACKNOWLEDGMENT OF AMENDMENTS

The Offeror shall acknowledge receipt of any amendment to this solicitation (a) by signing and returning the amendment; (b) by identifying the amendment number and date in the space provided for this purpose in Section A of the solicitation cover sheet; or (c) by letter or telegram including mailgrams. The Owner Agency must receive the acknowledgment by the date and time specified for receipt of offers. Offerors' failure to acknowledge an amendment may result in rejection of the offer.

L.13 ACCEPTANCE PERIOD

The Offeror agrees that its offer remains valid for a period of 90 days from the solicitation's closing date.

L.14 BEST AND FINAL OFFERS (Note: Only consider using this section if the Owner Agency is legally allowed to use best and final offers. Also, this may only be applicable for projects that allow alternate proposals.)

If, subsequent to receiving original proposals, negotiations are conducted, all technically acceptable Offerors within the competitive range shall be so notified and shall be provided an opportunity to submit written best and final offers at the designated date and time. Best and Final Offers shall be subject to the Late Submissions, Late Modifications and Late Withdrawals of Proposals provision of the solicitation. After receipt of best and final offers, no discussions shall be reopened unless the Contracting Officer determines that it is clearly in the Government’s best interest to do so, e.g., it is clear that information available at that time is inadequate to reasonably justify Contractor selection and award based on the best and final offers received. If discussions are reopened, the Contracting Officer shall issue an additional request for best and final offers to all technically acceptable Offerors still within the competitive range.

L.15 LEGAL STATUS OF OFFEROR

Each proposal must provide the following information:

L.15.1 Name, Address, Telephone Number, Federal tax identification number and DUNS Number of Offeror;

L.15.2 State, license, registration or certification if required by law to obtain such license, registration or certification. If the Offeror is a corporation or partnership and does not provide a copy of its license, registration or certification to transact business in the State, the offer shall certify its intent to obtain the necessary license, registration or certification prior to contract award or its exemption from such requirements; and

L.15.3 If the Offeror is a partnership or joint venture, names of general partners or joint ventures, and copies of any joint venture or teaming agreements.

L.15.4 The Owner Agency reserves the right to request additional information regarding the Offeror's organizational status.

L.16 STANDARDS OF RESPONSIBILITY

The prospective Contractor must demonstrate to the satisfaction of the Owner Agency the capability in all respects to perform fully the contract requirements, therefore, the prospective Contractor must submit the documentation listed below, within five (5) days of the request by the Owner Agency:

L.16.1 Furnish evidence of adequate financial resources, credit or the ability to obtain such resources as required during the performance of the contract.

L.16.2 Furnish evidence of the ability to comply with the required or proposed delivery or performance schedule, taking into consideration all existing commercial and governmental business commitments.

L.16.3 Furnish evidence of the necessary organization, experience, accounting and operational control, technical skills or the ability to obtain them.

L.16.4 Furnish evidence of compliance with the applicable State licensing, tax laws and regulations.

L.16.5 Furnish evidence of a satisfactory performance record, record of integrity and business ethics.

L.16.6 Furnish evidence of the necessary production, construction and technical equipment and facilities or the ability to obtain them.

L.16.7 If the prospective Contractor fails to supply the information requested, the Contracting Officer shall make the determination of responsibility or non-responsibility based upon available information. If the available information is insufficient to make a determination of responsibility, the Contracting Officer shall determine the prospective Contractor to be unacceptable.

L.17 KEY PERSONNEL

L.17.1 The Owner Agency considers the following positions to be key personnel for this contract (Owner Agency may choose applicable positions to include):

Project Manager

Construction Superintendent

Quality Management Engineer or Quality Manager (if the desired person does not need to be a licensed professional engineer).

Work Zone Traffic Safety Engineer or Work Zone Traffic Safety Manager (if the desired person does not need to be a licensed professional engineer).

L.17.2 The Offeror shall set forth in its proposal the names and reporting relationships of the key personnel the Offeror shall use to perform the work under the proposed contract. Their resumes shall be included. The hours that each shall devote to the contract shall be provided in total and broken down by task. Proposed key staff must remain in place for at least one year following the award of the contract or written approval for replacements must be received from the Owner Agency.

L.17.3 The proposed project manager must have at least 10 years of management experience in construction projects. The proposed project manager must have successfully managed 2 contracts (or government programs) of similar size and scope. (Note for L.17.3, L.17.4, L.17.5: instead of using 2 contracts of similar size, the Agency may consider requiring that potential Offerors provide proof of relevant experience in their field of work.)

L.17.4 The proposed construction superintendent must have at least 8 years of experience as a construction superintendent, and must have successfully managed 2 contracts (or government programs) of similar size and scope.

L.17.5 The proposed quality management engineer must have at least 8 years of experience in construction projects, and must have successfully managed 2 contracts (or government programs) of similar size and scope.

L.17.6 The proposed work zone safety engineer must have at least 5 years of experience in construction as a work zone safety engineer.

EXAMPLE RFP SECTION M - EVALUATION FACTORS

M.1 EVALUATION FOR AWARD

The contract shall be awarded to the responsible Offeror whose offer is technically acceptable to The Owner Agency, and offers the Best Value to the Locale (i.e. State, county) as determined by the total overall score from the evaluation criteria specified below.

M.2 TECHNICAL RATING

The Technical Rating Scale is as follows:

Table 7. Technical Rating Scale

Numeric Rating	Adjective	Description
1	Unacceptable	Fails to meet minimum requirements; major deficiencies which are not correctable.
2	Poor	Fails to meet requirements, significant deficiencies that may be correctable.
3	Acceptable	Meets requirements; only minor deficiencies which can be clarified.
4	Good	Meets requirements and exceeds some requirements; no deficiencies.
5	Excellent	Exceeds most, if not all requirements; no deficiencies.

For example, if a factor has a point evaluation of 0 to 20 points, and (using the appropriate Rating Scale) the Owner Agency evaluates as "good" the part of the proposal applicable to the factor, the score for the factor is 16 (4/5 of 20).

M.3 EVALUATION STANDARDS

The Owner Agency will only evaluate an Offeror's Price Proposal if The Owner Agency's proposal evaluation panel finds that Offeror to be technically acceptable. The Offeror must meet a minimum rating/score of X to be considered technically acceptable. The Owner Agency shall check those Price Proposals for price reasonableness.

M. 4 EVALUATION CRITERIA

The Owner Agency will evaluate proposals based on the following technical evaluation factors**:**

M.4.1 TECHNICAL

The Owner Agency will rate the technical proposals based upon the extent to which Offerors describe, in clear and concise language how they will complete the construction,

meet the performance goals, and demonstrate an understanding of issues relating to the construction covered by this RFP. Offerors shall refer to section L of this RFP for instructions regarding the format of technical proposals.

The Owner Agency will use the following criteria in evaluating proposals (note – categories are listed in descending order of importance):

A. The extent to which Offerors provide a clear, concise, high probability for success work plan for completing the construction project, and meeting all of the performance goals. This includes innovative work methods, that will speed construction while reducing congestion, fostering environmental protection, functional efficiency and flexibility, traffic management and protection, traffic management plans (TMP) that offer reductions in user costs and impact, coordination with utilities (meeting permitting and all other utility requirements), government agencies, and other organizations.

B. The extent to which the proposed Prime Contractor's list of similar experience demonstrates knowledge, and understanding in constructing _____ (bridge, highway, etc) referenced in this RFP.

C. Experience, knowledge and understanding in using proposed innovative techniques, processes, or materials related to construction, including whether the Offeror's potential use of innovation is likely to enhance the ability to meet the performance goals set forth in this RFP.

D. The extent to which the proposed Prime Contractor and subcontractors demonstrate experience, knowledge and understanding of key safety issues, including work zone safety, road safety audits, worker protection, safety for pedestrians, bicyclists, and other non-vehicle uses, and the safety implications of poorly maintained or constructed assets.

E. The extent to which Offerors demonstrate knowledge and understanding of the type and level of effort necessary to ensure a successful construction effort, and the attainment of the performance goals.

F. The extent to which Offerors demonstrate the ability to respond to emergency circumstances.

G. The extent to which the Offeror's TMP demonstrates experience in controlling traffic in a _____ (urban, rural, mixed, controlled access, uncontrolled access) environment.

H. The extent to which the Offeror has presented an adequate plan for keeping a readily available and adequate supply of materials, and the ability to properly handle and store materials (e.g. environmental storage requirement such as temperature). This plan must demonstrate knowledge of material supply times and ensure that materials meet specifications.

I. The extent to which assumptions and deviations made by the Offeror impact the probability of success of the contract.

J. The extent to which Offerors have provided good solutions for resolving any technical uncertainties.

M.4.2 STAFFING/ MANAGEMENT/QUALITY MANAGEMENT/ PAST PERFORMANCE

The Owner Agency will rate the staffing/management/quality management/past performance proposal based upon the extent to which Offerors describe, in clear and concise language their past performance, management, staffing and Quality Management plans related to the construction covered by this RFP. Offerors shall refer to section L of this RFP for instructions regarding the format of past performance proposals.

The Owner Agency will use the following criteria in evaluating proposals (note – categories are listed in descending order of importance):

A. **Past Performance**

1. The extent to which the Prime Contractor's and subcontractors' corporate relevant experience and past performance on construction contracts of comparable size demonstrates a likelihood of successfully performing the construction set forth in this RFP.

2. The extent to which the Offeror's past performance in implementing innovative construction/MOT approaches demonstrates a likelihood of successfully performing the construction set forth in this RFP.

3. The relevancy of the past performance management experience examples provided by the Offeror.

4. The quality of references provided by the identified contact personnel.

B. **Management**

1. The extent to which the Prime Contractor's management plan demonstrates the ability to perform the construction project in compliance with the performance goals and standard specifications set forth in this RFP, and demonstrates a proactive approach to management.

2. The extent to which the management plan demonstrates the ability to control prices and reduce financial risks to the government.

3. The extent to which the management plan demonstrates an adequate approach for ensuring the availability of staff and resources, over the term of the contract.

4. The extent to which the Prime Contractor's management plan demonstrates the ability to effectively manage the proposed subcontractors.

5. The extent to which the Prime Contractor's communication plan ensures effective internal and external relaying of information relevant to the project.

6. The extent to which the Prime Contractor demonstrates effective decision making processes throughout the organization. This will

foster efficient and proactive management of the project elements, as well as a successful partnering relationship with the Owner Agency.

7. The extent to which the Prime Contractor uses innovative techniques or has contingency strategies in place should those techniques prove to be unsuccessful

.

C. **Staffing**

1. The adequacy and relevance of the qualifications and experience of the proposed project manager.

2. The qualifications and experience of key personnel, for the proposed Prime Contractor and the subcontractors, related to construction of the _____ referenced in this RFP.

3. The extent to which key and non-key personnel are available for the term of the proposed contract.

4. The adequacy of the Offeror's plan to ensure adequate training and understanding of requirements.

5. The extent to which certified disadvantaged business enterprises are represented.

D. **Quality Management Plan**

1. The adequacy of the Offeror's plan for ensuring quality work.

2. The extent to which the Prime Contractor's quality management plan represents a proactive approach that shall identify needs in a timely manner.

3. The extent to which the Prime Contractor's quality management plan is likely to ensure that the project meets the performance goals set forth in this RFP and that all work meets the applicable standard specifications, including work performed by the subcontractors.

4. The adequacy of the Offeror's plan for ensuring that equipment remains in good working order.

5. The extent to which the Offeror's plan shows innovative techniques in implementing the Quality Management plan.

6. The extent to which the Offeror's plan shows how the Offeror will achieve the performance goals.

7. The adequacy of the Offeror's Environmental Quality Management Plan.

E. **Facilities and Equipment**

1. The extent to which the proposed Prime Contractor's and major subcontractor's facilities, equipment and materials demonstrate a likelihood of successfully performing the construction and proposed innovative approaches set forth in this RFP.

F. **Schedule**

1. The extent to which the Offeror proposes the use of innovative methods to complete the construction project more quickly than traditional methods.

2. The extent to which the Offeror plans to innovatively meet or exceed the schedule requirements for daily, and major milestones, and for duration of the project.

3. The extent to which the Offeror possesses the resources needed for adequate schedule control, monitoring, and tracking.

M.4.3 PRICE CRITERIA

The price evaluation shall be objective. The Offeror with the lowest price shall receive the maximum price points. All other proposals shall receive a proportionately lower total score. The following formula shall be used to determine each Offeror's evaluated price score:

Total Evaluated Price for lowest price proposal x weight= evaluated price score

Total Evaluated Price of proposal being evaluated

M.4.4 TOTAL (100 Points)

Table 8. Total Score Scale for Best Value

Evaluation Criteria	Maximum Possible Points
Technical	TBD
Staffing/Management/Quality Management/Past Performance	TBD
• Past Performance	TBD
• Management	TBD
• Staffing	TBD
• Quality Management	TBD
• Facilities	TBD
Price	TBD
Total Points	100

EXAMPLE RFP - MDOT M-115 PILOT PROJECT- EVALUATION FACTORS, SCORING AND AWARD

"The Selection Team will use the following criteria for each factor in evaluating proposals.

A.1.) **Open to Traffic**: The Contractor provides the necessary Open to Traffic date as outlined on the provided form in Appendix C, and includes supplemental information/description that demonstrates the type and level of effort required to ensure success in achieving the goal.

Open to Traffic (max 20 points): 0 points: August 2nd, 2008 (Baseline), 1-5 points: August 1st - July 15th, 2008, 6-20 points: July 14th - July 2nd, 2008

A.2.) **Construction and Cleanup Completion**: The Contractor provides the necessary day(s) after open to traffic as outlined on the provided form in Appendix C, and includes supplemental information/description that demonstrates the type and level of effort required to ensure success in achieving the goal.

Construction and Cleanup Completion (max 5 points): 0 points: 15 days after open to traffic (Baseline), 1-5 points: 14 - 5 days after open to traffic

A.3.) **Pavement Performance Goal**: The Contractor provides the necessary years for pavement performance warranty as outlined on the provided form in Appendix C, and includes supplemental information/description that demonstrates the type and level of effort required to ensure success in achieving the goal. A detailed description will be included if different than the enclosed Log of Project, and may include the proposed type of work to be performed, proposed pavements (excluding concrete), proposed pavement section, etc.

Pavement Performance Goal (max 50 points): 0 points: 5 year pavement warranty (Baseline), 15 points: 6 year pavement warranty, 30 points: 7 year pavement warranty, 50 points: 8 year pavement warranty

A.4.) **Develop and provide a "Worker Safety Plan" as it relates to the goal of Worker Safety During Construction**: The Contractor's plan demonstrates experience, knowledge, and understanding of key worker safety issues for the project, and the implications of good or poor worker protection. The plan should be clear, concise, and have a high probability for success for completing the project goal.

Develop and provide a "Worker Safety Plan" as it relatesto the goal of Worker Safety During Construction (max 5 points): 0 points: A generic "Worker Safety Plan" is provided with no/few specifics on how the plan will be followed to achieve the goal, 1-2 points: An adequate general "Worker Safety Plan" is provided with some specifics on how the plan will be followed to achieve the goal, 3-5 points: A clearly defined "Worker Safety Plan" is provided with a detailed description of how the plan will be followed to achieve the goal.

A.5.) **Develop and provide a "Work Zone Safety Plan" as it relates to the goal of Work Zone Crashes**: The Contractor's plan demonstrates experience, knowledge, and understanding of key safety issues concerning work zone safety. The plan should also describe the Contractor's ability to respond to emergency circumstances and how non-

vehicle incidents will be addressed. The plan should be clear, concise, and have a high probability for success for completing the project goal.

Develop and provide a "Work Zone Safety Plan" as it relates to the goal of Work Zone Crashes (max 10 points): 0 points: A generic "Work Zone Safety Plan" is provided with no/few specifics on how the plan will be followed to achieve the goal, 1-5 points: An adequate general "Work Zone Safety Plan" is provided with some specifics on how the plan will be followed to achieve the goal, 6-10 points: A clearly defined "Work Zone Safety Plan" is provided with a detailed description of how the plan will be followed to achieve the goal.

A.6.) **Develop and provide a "Reducing Motorist Delay Plan" as it relates to the goal of Motorist Delay**: The Contractor's plan demonstrates experience, knowledge, and understanding of key motorist delay issues for the project, and the implications of a good or poorly designed and maintained work zone. The plan should also describe any proposed changes to the Special Provision for Maintaining Traffic, including staging, as well as proven traffic engineering tools and analysis to manage motorist delay. The plan should be clear, concise, and have a high probability for success for completing the project goal.

Develop and provide a "Reducing Motorist Delay Plan" as it relates to the goal of Motorist Delay (max 30 points): 0 points: A generic "Reducing Motorist Delay Plan" is provided with no/few specifics on how the plan will be followed to achieve the goal, 1-15 points: An adequate general "Reducing Motorist Delay Plan" is provided with some specifics on how the plan will be followed to achieve the goal, 16-30 points: A clearly defined "Reducing Motorist Delay Plan" is provided with a detailed description of how the plan will be followed to achieve the goal including proven traffic engineering tools and analysis to manage motorist delay.

B.1.) Describe **innovations** that will be incorporated into the project including, but not limited to, Road Construction, Bridge Construction, Delay Reduction, and Materials: The Contractor demonstrates the necessary, knowledge, and understanding in using proposed innovative techniques, processes, or materials related to construction, including whether the Contractor's potential use of innovation is likely to enhance the ability to meet the goals set forth in this document. The description should be clear, concise, and demonstrate a high probability for success for completing the construction project goals. This could include work methods that will speed construction while reducing congestion, functional efficiency and flexibility, traffic management and protection, reduction in user costs and impact, etc.

Describe innovations that will be incorporated into the project including, but not limited to, Road Construction, Bridge Construction, Delay Reduction, and Materials (max 30 points): 0 points: Innovations that most likely can't be used and provide no value, 1-15 points: innovations that could be used in the project and provide some value, 16-30 points: Innovations that are usable in the project and provide significant value.

The Contractor's Responses to Evaluation Factors A.1., A.2., and A.3. shall include whole numbers only, were required. If the Contractor's response includes a fraction or decimal, it will be rounded up to the nearest whole number, which will be used for both scoring and, if the Contractor is awarded the project, in the approved contract.

Scoring the Evaluation Factors: The Contractor's Proposal Package will be given to the Selection Team for review and scoring. The score, based on a maximum of 150 points, will be determined on consensus scoring between all of the Selection Team Members. Evaluation Factors A.1. and A.2. may require interpolation to determine the point value for the score and, if needed, will be rounded to the nearest hundredths. If the Contractor receives a score of zero (0) points for any factor, it is equivalent to what MDOT would normally expect for a standard construction project.

Derivation of Cost Multiplier: The Selection Team Members will take the score for each qualifying Contractor and derive the "Cost Multiplier" thru linear interpolation, rounded to the nearest ten thousandths. Cost multipliers associated with available points scored is shown below in "Cost Multiplier Table."

Cost Multiplier Table

AVAILABLE POINTS	COST MULTIPLIER
150	**0.80**
112	**0.85**
75	**0.90**
37	**0.95**
0	**1.00**

Best Value Computations: Once the "Cost Multiplier" is determined by the Selection Team for each qualifying Contractor Proposal Package, the Contractor's score, sealed Bid, and associated "Cost Multiplier" will be provided to Finance. Finance will apply the appropriate "Cost Multiplier" to each Contractor's Bid to determine the Best Value, rounded to the nearest hundredths.

Award: The contract shall be awarded to the Contractor whose offer is technically acceptable, and provides the lowest Best Value dollar amount. However, the value of the contract to be paid will be the Contractor's Lump Sum Bid."[3]

[3] Michigan Department of Transportation RFP -84169, Highways for LIFE Project.

Alternate Evaluation Methodologies

In addition to the method presented above, there are alternate evaluation methodologies for Best Value proposals as presented in the draft NCHRP Report 10-61, Best-Value Procurement Methods for Highway Construction Projects. Some are outlined in the following paragraphs.

Quantitative Cost-Technical Tradeoff

The Quantitative Cost-Technical Tradeoff involves calculating the technical score and the price score increment and then examining the difference between the incremental advantages of each. The increment in the technical score is calculated by dividing highest technical score by the next highest technical score less one multiplied by 100%. The increment in price score is calculated dividing highest price score by the next highest price score less one multiplied by 100%. The award is made to the Offeror with the lowest price, unless the higher priced offers can be justified through a higher technical value. This justification is made by determining if the added increment of price is offset by an added increment in technical score. A generic algorithm and example are shown in Figure 9 below.

Figure 9. Quantitative Cost-Technical Tradeoff Algorithm.[4]

Algorithm: $T_{Increment}=[(T_j/T_i)-1]*100\%$

$P_{Increment}=[(P_j/P_i)-1]*100\%$

If $T_{Increment} < P_{Increment}$, Award $Proposal_i$

If $T_{Increment} > P_{Increment}$, Award $Proposal_j$, Repeat with $Proposal_{j+1}$

Repeat Process until $T_{Increment} > P_{Increment}$

T = Technical Score

P = Price Proposal

Quantitative Cost-Technical Tradeoff Example

Proposal	Price	Weighted Score	Price Increment	Score Increment
1	$4.0M	300	--	--
2	$4.3M	400	+8%	+33%
3	$4.4M	405	+2%	+1%

In the example above, the difference between the low and second low price proposals is 8%; the difference in the weighted scores should be greater than 8% to justify expending the additional increment of cost. In this case it is 33%. Therefore, an increase of 8% in

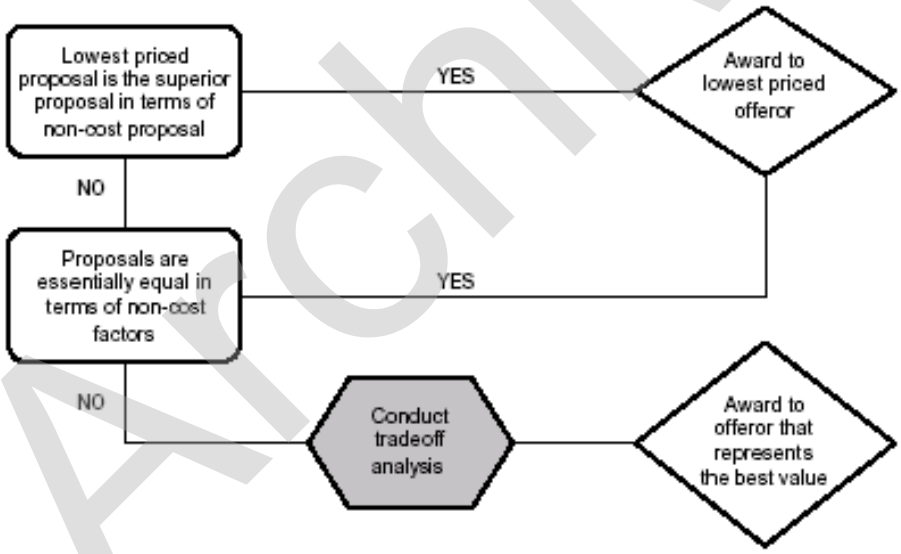
[4] Ibid.

price is warranted by the 33% increase in proposal technical score indicating that Proposal #2 is a better value than Proposal #1. This is not the case when comparing Proposal #2 to Proposal #3 where the 2% increase in cost is not justified by the 1% increase in technical score. Thus, the best-value in this example would be Proposal #2.

Qualitative Cost-Technical Tradeoff

The Qualitative Cost-Technical Tradeoff is used by many Federal agencies under the Federal Acquisitions Regulation. This method relies primarily on the judgment of the selection official and not on the evaluation ratings and scores (Army, 2001). The final decision consists of an evaluation, comparative analysis, and tradeoff process that often require subjectivity and judgment on the part of the selecting official. The flow chart below depicts the qualitative cost technical tradeoff algorithm as described in the Army Source Selection Guide (Army, 2001). The tradeoff analysis is not conducted solely with the ratings and scores alone. The selection official must analyze the differences between the competing proposals and make a rational decision based on the facts and circumstances of the specific acquisition. Two selection officials may not necessarily make the same conclusion, but both must satisfy the following criteria shown in Figure. 10.

Figure 10. Qualitative Cost-Technical Tradeoff Decision Matrix.[5]



Important points of the decision guide are that they represent the selection officials' rational and independent judgment, be based on a comparative analysis of the proposal, and be consistent with the solicitation evaluation factors and sub-factors.

[5] Ibid.

Special Experimental Project No. 14 (SEP-14)

Process

If an Owner Agency determines that an innovative award methodology best meets the needs of their construction project, and it is a non-traditional construction contracting technique which deviates from the competitive bidding provisions in 23 USC 112, then FHWA Headquarters' SEP-14 approval must be received. Any contract which utilizes a method of award other than the lowest responsive bid should be evaluated under SEP-14. These non-traditional contracting techniques may include Enhanced Low Bid, Best Value, life cycle cost bidding, qualifications based bidding and other methods where cost and other factors are considered in the award process.[6]

***MDOT M-115 Pilot Project**:*

The following is the table of contents of the final SEP-14 report for the M115 project:

I.Introduction and Background
II.Project Location
III.Goal Outcomes
IV.Lessons Learned
V.Successes
VI.MDOT's Conclusions
VII.Attachments
VIII.Appendixes

Final Report URL:

http://www.fhwa.dot.gov/programadmin/contracts/sep14list.cfm

The objective of SEP-14 is to evaluate "project specific" innovative contracting practices, undertaken by State highway agencies that have the potential to reduce the life cycle cost of projects, while at the same time, maintaining product quality. Federal statutes and regulations do set forth specific Federal-aid program requirements; however, some degree of administrative flexibility does exist. The intent of SEP-14 is to operate within this administrative flexibility to evaluate promising non-traditional contracting practices on selected Federal-aid projects.

This experimental program enables States to evaluate nontraditional contracting methods that are not in full compliance with FHWA's contracting policies but provide an open, competitive procurement. Under SEP-14, project owners seeking Federal aid may apply for approval to use nontraditional construction contracting techniques—methods of award other than the lowest responsive bid—to implement value-oriented procurement processes.[7]

The excerpt below is from the Contract Administration Training manual, and provides a brief outline of possibilities under SEP-14.

"SEP-14 strives to identify, evaluate, and document innovative contracting practices that have the potential to reduce the life cycle cost of projects, while at the same time, maintain product quality. Within the regulatory requirements of the Federal-aid highway program, some degree of flexibility does exist. SEP-14 is an effort to explore this flexibility to its fullest.

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[6] BRIEFING – "FHWA Initiatives to Encourage Quality Through Innovative Contracting Practices Special Experimental Projects NO.14 - (SEP-14)," July 9, 2002 (updated March 11, 2005). http://www.fhwa.dot.gov/programadmin/contracts/sep_a.htm.

[7] Gerald Yakowenko, "Megaproject Procurement: Breaking from Tradition," *Public Roads*, July/August 2004, Vol. 68, No. 1.

The FHWA will not mandate the use of innovative contracting practices. However, through SEP-14, the agency is working to maintain an environment which allows the State Transportation Agencies (STAs) and the construction industry to try innovative contracting practices which may result in an improvement of the industry's traditional contracting methods. FHWA hopes to try all proposed concepts that fall within the flexibility of the Federal-aid program requirements.

The following offers a brief discussion of contracting techniques that are either: 1) under evaluation by a number of States under SEP-14, or 2) under evaluation by some States as non-participating (State funding only):

Best value: A few States have considered awarding construction contracts on the basis of price and "other factors." This method uses a form of price/qualifications-based bidding, and the contract is awarded to the Offeror whose proposal provides the Best Value to the Owner Agency. Different evaluation and scoring methods may be used to select the winning proposal, and some are offered in this package.

Enhanced Low Bid: Traditionally, the majority of construction contracts have been based on low bid price. It has been noted for certain special types of projects that the Enhanced Low Bid process maybe more effective than the traditional low bid process.

Enhancements are focused on embedding additional measures into Owner Agency program plans, using prequalification criteria, and tightening the contract requirements by establishing prequalification standards for the contractor. The States that do not exercise best-value procurement can potentially benefit from an Enhanced Low Bid process.

No excuse incentive (bonuses): Under this concept, the STA gives the contractor a "drop-dead date "(or an incentive date) for completion of a phase or project. If the work is completed in advance of that date, the contractor receives a bonus. The agency will not accept any excuses, including weather delays, for not meeting the incentive date; meaning that the incentive date will not be changed. However, the STA may use its normal procedures to grant weather days or time extensions outside the incentive date. The contract will identify both a bonus date and a completion date for normal construction. If the contractor does not meet the bonus date, normal contract administration processes are followed.

Lump sum bidding: This method requires the contractor to develop the quantities from the contract package prepared by the STA. The contractor then submits a Lump Sum bid for the project. The method is designed to reduce quantity overruns due to errors in quantity calculations or changed field conditions. An added benefit is the reduction in paperwork related to quantity measurement and verification, allowing STA field personnel to spend more time on inspection of the work. Any costs associated with changed or unforeseen conditions as well as added or deleted work will be negotiated using standard practices. States typically use this method for simple projects such as resurfacing, bike paths, box culvert extensions and minor bridge widening.

NOTE: a normal lump sum project for which the STA prepares a complete PS&E package (including a list of quantities) is NOT experimental. Lump sum bidding, where the contractor develops quantities, is experimental because the contractor has responsibility for the estimated quantities as part of preparing the bid estimate.

Alternative pavement type bidding: Under an SEP-14 proposal, MoDOT evaluated alternative pavement bidding on five projects. FHWA has traditionally discouraged alternate pavement bids primarily due to the difficulties in developing truly equivalent pavement designs. However, Missouri actively involved the paving industry in the process of developing alternate pavement type specifications. They have also developed bid adjustment factors intended to allow a fair comparison of bids for different pavement types. The contract is then awarded to the lowest responsive/responsible bidder after the bids are multiplied by the bid adjustment factors.

Indefinite delivery/indefinite quantity (ID/IQ): This is a concept that several STAs currently use for design, maintenance or traffic control activities, and for other recurring tasks where the contractor bids per unit of specific work (for example, the work unit might be signalizing an intersection, or constructing an off-system bridge) with a guaranteed minimum amount of work units over the life of the contract.

Design-build. The design/build concept allows the contractor maximum flexibility for innovation in the selection of design, materials, and construction methods. Under the design/build concept, the contracting agency identifies the parameters for the desired end result and establishes the minimum design criteria. The prospective bidders then develop design proposals which optimize their construction abilities. The submitted proposals are rated by the contracting agency on the basis of design quality, timeliness, management capability, and cost."[8]

Lessons Learned from Real-World Performance Contracts

Lessons learned from real-world SEP-14 applications for performance contracts include:

- Leave time for the application to be reviewed and approved
- There is sometimes a review and revision cycle needed to get the application in suitable format
- Work closely with your FHWA rep in the development and submittal of the application.
- Do not get fancy with the application package.

[8] FHWA, *Contract Administration Core Curriculum Participant's Manual and Reference Guide 2005*, "Chapter V. Other Issues," Updated January 9, 2006. http://www.fhwa.dot.gov/programadmin/contracts/cor_V.htm.

Sample Materials

A sample **Best Value** SEP-14 application which includes language on performance contracting is provided below:

Agency Department of Transportation Construction Project

A. Introduction

The Owner Agency submits this work plan for review as a Best Value Award project under the provisions of Special Experimental Project No. 14 (SEP 14) for the use of innovative contracting practices. The Owner Agency has traditionally used a Low Bid method for their construction projects.

The Owner Agency has used this process before on the following projects achieving the following results. (If used previously, list the projects and the results here). By using this contracting technique we will ensure prospective general contractors have the necessary knowledge and experience to successfully complete this construction project and will provide them with flexibility on how they perform the construction, and manage traffic.

The SEP-14 process is an innovative means of procuring projects that may be uncharacteristic to the traditional projects normally encountered by highway departments. SEP-14 provides an opportunity to use and evaluate the contractual arrangements when an alternate process is more beneficial than the traditional process. In this case, selection of the construction contractor will be based on criteria other than cost.

B. Purpose

Under this effort, the Owner Agency intends to enter into a performance contract to obtain construction of (XX asset at XXX location). Through this contract, a private company will assume the responsibility for partnering with the Owner Agency and performing the XX asset construction.

For this effort, the Owner Agency feels that the low bid process will not provide adequate information on the Offerors' qualifications or provide a measure of the Offerors' competence to perform the unique work required for a performance construction contract. The low bid process would also not provide the flexibility needed by the Contractor in coming up with an approach to reach a defined set of performance goals.

The Owner Agency will manage this project and award process, including the Request for Proposals (RFP), advertising, awarding, and performing performance measurement and project monitoring. The successful Contractor will act as the construction contractor under the Owner Agency's oversight and supervision.

Since this project will encourage a private Contractor towards innovation and accelerated construction timeframes, it is essential that the Owner Agency selects a Contractor based on the Best Value available to them, not solely the lowest price. The safety of the residents depends on assets that are properly constructed and built to be durable and long lasting, so the Owner Agency will need to be comfortable with the Offeror's technical approach, management plan, staffing plan, QC/QA plan, past performance and facilities,

as well as their price. Thus, the Owner Agency proposes to use a Best Value award for the XXX project.

C. Scope

Through this performance contract, a private company shall assume the responsibility for constructing the XX assets specified in this RFP. The activities required under this contract include:

A. (List the major elements of the construction project)
B. Constructing the XX asset to meet the defined contractual requirements.
C. Meeting the performance goals as set forth in this contract; and
D. Ensuring that the Owner Agency is notified immediately of all major construction needs for which the Contractor is not responsible under this contract. The Owner Agency and the Contractor shall jointly validate, agree upon, and resolve those items for which there is a question of Contractor responsibility.

The Contractor's personnel shall work with the Owner Agency and shall be held accountable to industry standards of behavior (as a minimum), confidentiality, and workmanship. All work performed by Contractor personnel must be in accordance with all specifications, codes, rules, guidelines and standards that are applicable for Federal aid work.

The successful Contractor must supply all of the labor, tools, materials, equipment, and incidentals necessary to perform all tasks and must satisfy as a minimum, the performance goal "Good/4" level of performance, as set forth in the RFP package. The performance goals establish the acceptable level of performance for each of the performance measures, and are defined as the "Good/4" level of performance. Labor, materials and equipment supplied must meet the standards of the Titles listed under in the RFP.

Offerors are encouraged, however, to propose innovative techniques and materials, including techniques and materials not currently used by the Owner Agency. By encouraging the use of innovation, the Owner Agency hopes to enhance safety, value, and condition of the assets under this contract, while minimizing construction costs and other capital costs. The Contractor will assume full responsibility for constructing the assets described in the RFP.

The COTR will monitor the Contractor's work to ensure compliance with the contract and to ensure that all work conforms to the performance goals contained in the contract. Subject to COTR oversight, the Contractor is free to choose the most effective and efficient techniques for meeting those performance goals. Materials must meet Federal/State standards.

D. Schedule

(Outline the schedule that makes sense for the project and the type of asset being constructed). The project will run for up to X years.

The Best Value selection process will have the following stages:

- The Owner Agency will advertise the RFP;
- The Owner Agency will hold a pre-bid meeting (this could be a mandatory on site pre-bid meeting);
- The Selection Committee will review the proposals and identify technically acceptable Offerors based on the criteria listed in the RFP Section M (see sample Section M, Evaluation Criteria).
- For technically acceptable Offerors, the CO will compute the scores for price based on the criterion listed in Section M (see sample Section M, Evaluation Criteria) and will compute a total score.
- The Owner Agency may negotiate (if allowed) with technically acceptable offerors in the competitive range (Based on the ratings of each proposal against all evaluation criteria, all of the most highly rated proposals that have a reasonable chance of being accepted for award) and request a Best and Final Offer.
- The Owner Agency will execute a contract with the Best Value Offeror (highest total score of technically acceptable Offerors) and issue a notice-to-proceed. However, if the parties are unable to execute a contract, the Owner Agency may offer the contract to the Offeror with the second highest total score.
- After project completion the Owner Agency will submit an SEP-14 report within 4 months.

E. Proposal Evaluation

The Owner Agency will use the Best Value selection procedure laid out in the RFP (see sample Section M). The Owner Agency provides instruction to the offerors on what to submit elsewhere in the RFP.

F. Reporting

The Owner Agency will prepare and submit initial, interim, and final reports on this project. The initial report will be prepared at the approximate time of award of the contract. The initial report will include industry reaction to the Best Value award process, any identifiable effects on the proposals received, and a summary of the Offeror's scores.

Based on the outcome of the project, discussion of other success factors of this approach may also include objectives such as:

- Did the project deliver the high level of quality expected of a contactor team especially experience in the work items and overall supervision of such a complex project?
- Did the project meet schedule and budget with a minimum of modification, in particular planning and scheduling-based issues?
- Did the contractor community generally accept use of Best Value contracting on this project and are they open to its future use on unusual projects highly dependant on the Contractor's skill and expertise?

The Owner Agency will submit an interim report mid-way through the project.

The Owner Agency will submit a final report upon completion of the contract and final acceptance. The final report will contain an overall evaluation of the project along with any suggestions and recommendations for improving the process.

A sample **Enhanced Low Bid** SEP-14 application which includes language on performance contracting is provided below:

Agency Department of Transportation Construction Project

A. Introduction

The Owner Agency submits this work plan for review as an Enhanced Low Bid Award project under the provisions of Special Experimental Project No. 14 (SEP 14) for the use of innovative contracting practices. The Owner Agency has traditionally used a Low Bid method for their construction projects.

The Owner Agency has used this process before on the following projects achieving the following results. (If used previously, list the projects and the results here). By using this contracting technique we will ensure prospective general contractors have the necessary knowledge and experience to successfully complete this construction project and will provide them with flexibility on how they perform the construction, and manage traffic.

The SEP-14 process is an innovative means of procuring projects that may be uncharacteristic to the traditional projects normally encountered by highway departments. SEP-14 provides an opportunity to use and evaluate the contractual arrangements when an alternate process is more beneficial than the traditional process. In this case, selection of the construction contractor will be based on criteria other than cost.

B. Purpose

Under this effort, the Owner Agency intends to enter into a performance contract to obtain construction of (XX asset at XXX location). Through this contract, a private company will assume the responsibility for partnering with the Owner Agency and performing the XX asset construction.

For this effort, the Owner Agency feels that the low bid process will not provide adequate information on the Offerors' qualifications or provide a measure of the Offerors' competence to perform the unique work required for a performance construction contract. The low bid process would also not provide the flexibility needed by the Contractor in coming up with an approach to reach a defined set of performance goals.

The Owner Agency will manage this project and award process, including the Invitation for Bids (IFB), advertising, awarding, and performing performance measurement and project monitoring. The successful Contractor will act as the construction contractor under the Owner Agency's oversight and supervision.

Since this project will encourage a private Contractor towards innovation and accelerated construction timeframes, it is essential that the Owner Agency selects a Contractor based on a pre-qualification process, not solely the lowest price. The safety of the residents depends on assets that are properly constructed and built to be durable and long lasting, so the Owner Agency will need to be comfortable that the Offeror is qualified to perform the construction and meet the performance goals, as well as being comfortable with their price. Thus, the Owner Agency proposes to use an Enhanced Low Bid award for the XXX project.

C. Scope

Through this performance contract, a private company shall assume the responsibility for constructing the XX assets specified in this RFP. The activities required under this contract include:

A. (List the major elements of the construction project)
B. Constructing the XX asset to meet the defined contractual requirements.
C. Meeting the performance goals as set forth in this contract; and
D. Ensuring that the Owner Agency is notified immediately of all major construction needs for which the Contractor is not responsible under this contract. The Owner Agency and the Contractor shall jointly validate, agree upon, and resolve those items for which there is a question of Contractor responsibility.

The Contractor's personnel shall work with the Owner Agency and shall be held accountable to industry standards of behavior (as a minimum), confidentiality, and workmanship. All work performed by Contractor personnel must be in accordance with all specifications, codes, rules, guidelines and standards that are applicable for Federal aid work.

The successful Contractor must supply all of the labor, tools, materials, equipment, and incidentals necessary to perform all tasks and must satisfy as a minimum, the performance goal "Good/4" level of performance, as set forth in the IFB package. The performance goals establish the acceptable level of performance for each of the performance measures, and are defined as the "Good/4" level of performance. Labor, materials and equipment supplied must meet the standards of the Titles listed under in the IFB.

Offerors are encouraged, however, to propose innovative techniques and materials, including techniques and materials not currently used by the Owner Agency. By encouraging the use of innovation, the Owner Agency hopes to enhance safety, value, and condition of the assets under this contract, while minimizing construction costs and other capital costs. The Contractor will assume full responsibility for constructing the assets described in the IFB.

The COTR will monitor the Contractor's work to ensure compliance with the contract and to ensure that all work conforms to the performance goals contained in the contract. Subject to COTR oversight, the Contractor is free to choose the most effective and efficient techniques for meeting those performance goals. Materials must meet Federal/State standards.

D. Schedule

(Outline the schedule that makes sense for the project and the type of asset being constructed). The project will run for up to X years.

The Enhanced Low Bid selection process will have the following stages:

- The Owner Agency will advertise the IFB;

- The Owner Agency will hold a pre-bid meeting (this could be a mandatory on site pre-bid meeting);
- The contractor shall provide written documentation to demonstrate his/her ability to perform the type of work or similar jobs.
- The Selection Committee will review the packages and identify a short list of qualified Offerors based on the criteria listed in the IFB section L.
- The owner Agency will only consider prices from Offerors which the owner Agency has determined are qualified under the evaluation criteria in section M. The owner Agency shall award the Contract to the qualified Offeror with the lowest acceptable price
- After project completion the Owner Agency will submit an SEP-14 report within 4 months.

E. Proposal Evaluation

The Owner Agency will use the Enhanced Low Bid selection procedure laid out in the IFB (see sample Section M). The Owner Agency provides instruction to the offerors on what to submit elsewhere in the IFB.

F. Reporting

The Owner Agency will prepare and submit initial, interim, and final reports on this project. The initial report will be prepared at the approximate time of award of the contract. The initial report will include industry reaction to the Enhanced Low Bid award process, any identifiable effects on the proposals received, and a summary of the Offeror's scores.

Based on the outcome of the project, discussion of other success factors of this approach may also include objectives such as:

- Did the project deliver the high level of quality expected of a contactor team especially experience in the work items and overall supervision of such a complex project?
- Did the project meet schedule and budget with a minimum of modification, in particular planning and scheduling-based issues?
- Did the contractor community generally accept use of Enhanced Low Bid contracting on this project and are they open to its future use on unusual projects highly dependant on the Contractor's skill and expertise?

The Owner Agency will submit an interim report mid-way through the project.

The Owner Agency will submit a final report upon completion of the contract and final acceptance. The final report will contain an overall evaluation of the project along with any suggestions and recommendations for improving the process.