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Federal Railroad Administration

Manual for Research, Development and Technology Program and Project Evaluations

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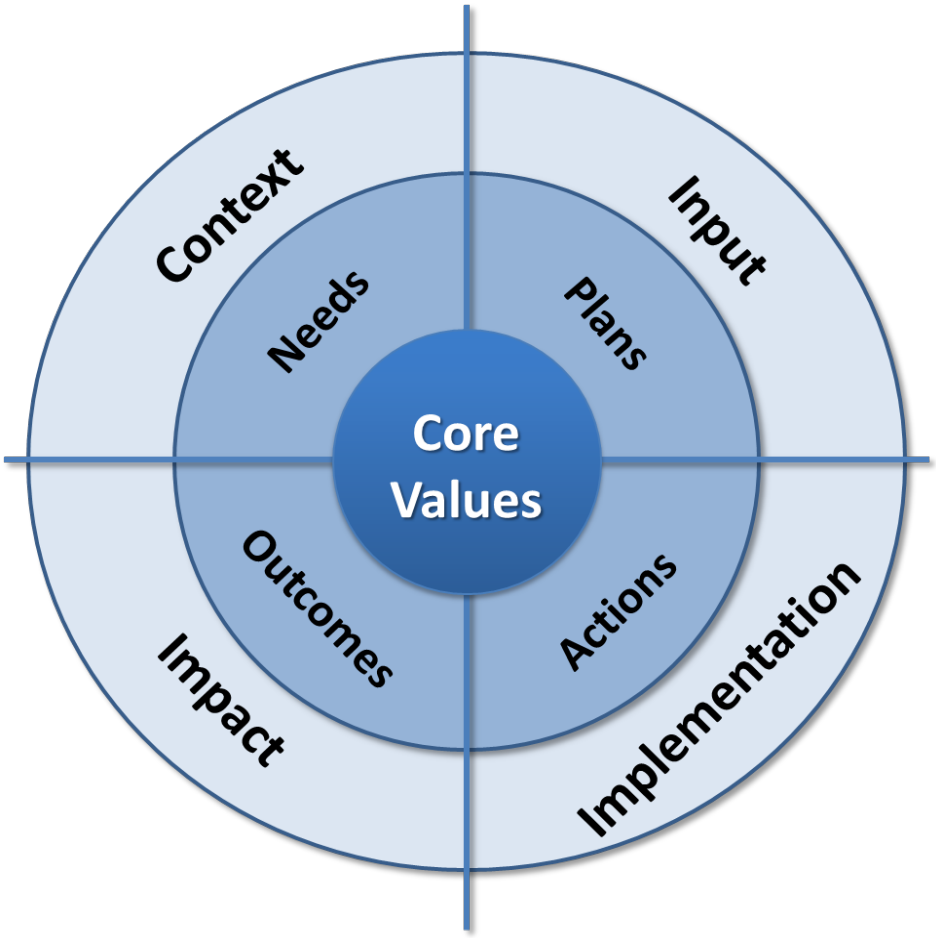
Washington, DC 20590



Stakeholder engagement is key

DOT/FRA/ORD-16/06

Final Report
April 2016

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This manual provides the Federal Railroad Administration's (FRA) Office of Research, Development and Technology (RD&T) a framework, standards, and procedures for planning, conducting, reporting, and using sound evaluations of RD&T's projects for improving railroad safety.

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1 foot (ft) = 30 centimeters (cm)	1 centimeter (cm) = 0.4 inch (in)
1 yard (yd) = 0.9 meter (m)	1 meter (m) = 3.3 feet (ft)
1 mile (mi) = 1.6 kilometers (km)	1 meter (m) = 1.1 yards (yd)
	1 kilometer (km) = 0.6 mile (mi)
AREA (APPROXIMATE)	**AREA (APPROXIMATE)**
1 square inch (sq in, in^2) = 6.5 square centimeters (cm^2)	1 square centimeter (cm^2) = 0.16 square inch (sq in, in^2)
1 square foot (sq ft, ft^2) = 0.09 square meter (m^2)	1 square meter (m^2) = 1.2 square yards (sq yd, yd^2)
1 square yard (sq yd, yd^2) = 0.8 square meter (m^2)	1 square kilometer (km^2) = 0.4 square mile (sq mi, mi^2)
1 square mile (sq mi, mi^2) = 2.6 square kilometers (km^2)	10,000 square meters (m^2) = 1 hectare (ha) = 2.5 acres
1 acre = 0.4 hectare (he) = 4,000 square meters (m^2)	
MASS - WEIGHT (APPROXIMATE)	**MASS - WEIGHT (APPROXIMATE)**
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1 pound (lb) = 0.45 kilogram (kg)	1 kilogram (kg) = 2.2 pounds (lb)
1 short ton = 2,000 pounds (lb) = 0.9 tonne (t)	1 tonne (t) = 1,000 kilograms (kg) = 1.1 short tons
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1 cup (c) = 0.24 liter (l)	1 liter (l) = 0.26 gallon (gal)
1 pint (pt) = 0.47 liter (l)	
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1 gallon (gal) = 3.8 liters (l)	
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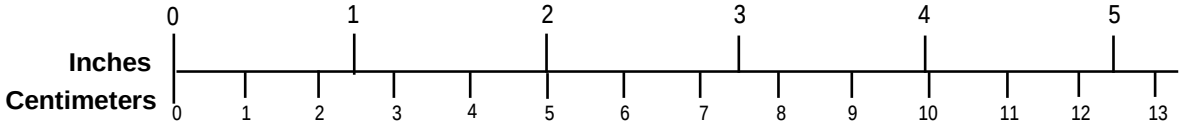

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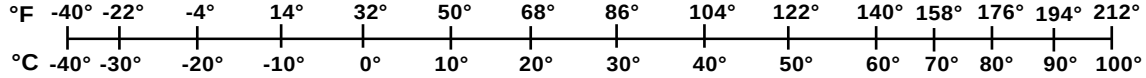

For more exact and or other conversion factors, see NIST Miscellaneous Publication 286, Units of Weights and Measures. Price $2.50 SD Catalog No. C13 10286

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The illustration on this manual's front cover is my original creation and is reproduced with my permission.

Daniel L. Stufflebeam, Ph.D.

Executive Summary

This manual provides the Federal Railroad Administration's (FRA) Office of Research, Development and Technology (RD&T) a framework, standards, and procedures for planning, conducting, reporting, and using sound evaluations of RD&T's projects for improving railroad safety.

The main uses of project evaluations are to guide and strengthen projects, issue accountability reports, help disseminate effective practices, contribute to the relevant knowledge base, and make decision makers, stakeholders, and consumers aware of projects that succeeded and those that proved unworthy of further investment and use.

Evaluations can be formative or summative. A formative evaluation proactively guides a project from start to finish. A summative evaluation assesses a project, or a project stage, after it has been completed.

FRA RD&T project evaluations are divided into four types labeled context, input, implementation, and impact evaluations. Context evaluations assess needs, problems, assets, and opportunities, plus relevant contextual conditions and dynamics. Input evaluations assess a project's strategy, action plan, staffing arrangement, and budget for feasibility and potential cost-effectiveness to meet targeted needs and achieve goals. Implementation evaluations provide feedback throughout a project's implementation and later report on the extent to which the project was carried out as intended and required. Impact evaluations identify and assess a project's costs and outcomes – intended and unintended, short term and long term.

Metaevaluation is the evaluation of evaluation. Its formative use is to help guide an evaluation to a successful conclusion. Its summative use is to provide a project evaluation's audiences with an independent assessment of the evaluation's soundness.

Evaluators of RD&T projects are expected to apply rigorous standards to guide and assess RD&T's projects. In this manual, the categories of standards to be met are Utility, Feasibility, Propriety, Accuracy, and Evaluation Accountability. RD&T's evaluation standards are derived from the ANSI-accredited Joint Committee Program Evaluation Standards, as published in 2011 by the Sage Company.

1. Introduction

This manual provides the Federal Railroad Administration's (FRA) Office of Research, Development and Technology (RD&T)a framework, standards, and procedures for planning, conducting, reporting, and using sound evaluations of RD&T's projects for improving railroad safety. It has been prepared to comply with RD&T's policies for project evaluation as defined in the office's 2012 Strategic Plan. [1]

1.1 Evaluation Mandate

As outlined in FRA's research and development Evaluation Implementation Plan [2], evaluation is to be integral to all RD&T programs and, to at least a minimal degree, evaluation methods should be built into each project from the start. Responsibilities for conducting the evaluations are assigned to division chiefs and all staff and contractors with responsibility for conducting RD&T's programs and projects. This is in response to the Government Performance and Results Act (GPRA) [3] and the GPRA Modernization Act of 2010 [4] requiring Federal agencies to assess the manner and extent to which their programs achieve intended objectives.

1.2 Purpose of Project Evaluations

Fundamentally, the most important purpose of RD&T's project evaluations is not only to prove a project's value but to improve its value. RD&T project managers and support staff will design, conduct, and use their evaluations to help focus, plan, and conduct projects that make substantial contributions to improving railroad safety. In addition, RD&T's project managers will employ their evaluations to meet RD&T's requirements for accountability by reporting positive and negative results of projects to both internal and external right-to-know audiences.

1.3 Audiences for Project Evaluations

Key audiences for RD&T's project evaluations include FRA's Administrator and staff, U.S. Department of Transportation's (DOT) Safety Council, DOT, the Volpe National Transportation Center, railroad management, railroad labor, U.S. Office of Management and Budget (OMB), Government Accountability Office (GAO), the Congress, and the public.

1.4 Program Areas

Evaluations of FRA's projects will assess RD&T's progress in improving safety in relation to the agency's main program research areas of Rolling Stock, Track, Train Control & Communication, and Human Factors.

1.5 Evaluation Goals

RD&T's evaluation goals are to:

- Help improve railroad safety
- Inform and assist continuous improvement of project effectiveness and impact
- Meet accountability requirements
- Contribute to long-term improvements in knowledge diffusion and technology transfer

- Build evaluation capacity by making evaluation design, budgeting, and staffing a regular part of each division's RD&T budget requests, program and project planning, procurements in contracts and grants, project implementation, and project accountability
- Assure the soundness and credibility of RD&T's internal evaluations by subjecting them to independent metaevaluations
- Strengthen the Office of RD&T's effectiveness, stature, credibility, and case for needed financial support

1.6 This Manual's Focus on Project Evaluation and its General Utility for Program Evaluations

Throughout this manual references are mainly to project evaluation rather than program evaluation.

Specifically, the manual is focused on assisting RD&T's evaluations of specific projects. However, the manual's concepts and advice are generally relevant to evaluating the main programs being operated by RD&T's four divisions.

Project evaluations are assessments of specific goal-directed efforts that have specific beginning and ending points plus finite budgets dedicated to achieving the defined project goals.

Program evaluations are assessments of ongoing, programmatic activities that are broader and more general in aims and processes than are specific projects. Programs typically focus on a broad range of long-term goals; are comprised of a flow of related, specific projects that in combination address the program's goals; are supported by generalized, evolving, renewable budgets; and do not have finite beginning and ending points.

This manual is focused at the level of project evaluations to make it as practical as possible. However, because programs essentially are aggregates of projects, this manual's advice has much relevance to planning, conducting, reporting, and validating evaluations of ongoing programs.

2. The FRA RD&T Approach to Evaluation

2.1 Project Evaluation Defined

At its most general level, project evaluation is the assessment of a project's value. Specifically, a project evaluation is the systematic process of delineating, obtaining, reporting, and applying descriptive and judgmental information about a project's quality, cost-effectiveness, feasibility, safety, legality, sustainability, transferability, fairness, importance, etc.

The output from an evaluation process is an evaluation report for intended uses by intended users.

A project evaluation's conclusions should be grounded in relevant, valid information and succinctly address the questions which guided the evaluation.

Typically, FRA RD&T project evaluations will employ both quantitative and qualitative research methods. Among the relevant research procedures are print media reviews, surveys, interviews, observations, photography, rating scales, focus groups, laboratory tests, trend analysis, simulation studies, significance tests, data mining, document analysis, field experiments, correlational studies, etc.

Key questions addressed by sound evaluations are: **Need**—What needs to be accomplished? **Solution**—What is the best way to meet the need? **Implementation**—Is (or was) the solution effectively executed? **Outcomes**—Were the targeted needs met and what is the full range of outcomes?

Main uses of project evaluations are to guide and strengthen projects, issue accountability reports, help disseminate effective practices, contribute to the relevant knowledge base, and make decision makers, stakeholders, and consumers aware of projects that succeeded and those that proved unworthy of further investment and use.

Project evaluation is a ubiquitous process that applies across organizational areas and levels, national boundaries, and all disciplines and service areas.

2.2 Standards for Project and Program Evaluations

Evaluators of RD&T projects are expected to apply rigorous standards to guide and assess RD&T's projects. In this manual, the categories of standards to be met are **Utility, Feasibility, Propriety, Accuracy,** and **Evaluation Accountability**. RD&T's evaluation standards are derived from the ANSI-accredited Joint Committee Program Evaluation Standards, as published in 2011 by the Sage Company. [5] Collectively, the five categories of standards contain 30 specific standards.

Evaluators are advised to consider and apply (as relevant) all 30 standards in all stages of a project or program evaluation: focusing, planning, budgeting, contracting, conducting, reporting, using findings, and metaevaluation.

Section 4 of this manual provides a summary of all 30 specific standards within the framework of an attestation form for evaluators to use in applying and reporting on the use of the standards. That form provides an evaluator a means to attest to an evaluation's adherence to each of 30 specific standards, i.e., to report on the extent to which the evaluation met each standard.

At the end of an evaluation, the evaluator should append a completed **Evaluation Standards Attestation Form** to their evaluation report. On the form, they should place X's denoting whether each standard was met, partially met, or not met. In addition, in the spaces provided they should include a brief statement of justification for the placement of each X.

The categories of standards are summarized below. Although referenced in terms of program evaluations they apply also to project evaluations.

2.2.1 Utility standards

Utility standards are intended to ensure that an evaluation will serve the information needs of the intended users: in short, to ensure the evaluation is useful. These standards require evaluations to identify and address stakeholders' needs such that evaluative findings are targeted, scheduled, and delivered to intended users to address their evaluation-related questions and especially to inform their decisions.

To meet utility requirements, a program evaluation provides timely, actionable assessments to those persons and groups that are involved in or responsible for implementing the program and to those stakeholders who will use the program's contributions. The person with primary responsibility for conducting the evaluation needs to identify the intended users and their intended uses of findings, then design and carry out the evaluation to provide the users with evaluative feedback that is relevant, clear, concise, and on time. Fully useful evaluations are ones that address the users' most important questions while also obtaining the full range of information required to assess the program's value.

The evaluation should not only issue printed reports and other communications of findings, but should also assist users to study and apply the findings. The aim is to do whatever is necessary to secure the evaluation's beneficial impacts.

The utility standards reflect the general consensus found in the evaluation literature that program evaluations should effectively address the information needs of clients and other right-to-know audiences, inform program improvement processes, and provide a basis for program accountability. If there is no prospect that the contemplated evaluation's findings would be used, the evaluation should not be undertaken.

2.2.2 Feasibility standards

Feasibility standards are intended to ensure that an evaluation will be realistic, prudent, diplomatic, and frugal: in short, to ensure the evaluation can be done efficiently and cost-effectively. These standards require those responsible for the evaluation to employ evaluation procedures that are parsimonious and operable in the program's environment. The evaluation should avoid disrupting or otherwise impairing the program. It should control, as much as possible, the political forces that might otherwise impede or corrupt the evaluation.

Evaluation procedures must be workable in real-world settings, not only in controlled laboratory settings.

2.2.3 Propriety standards

Propriety standards are intended to ensure evaluations will be conducted legally, ethically, and with due regard for the welfare of those involved in the evaluation, as well as those affected by

its results: in short, to ensure the evaluation is aboveboard and fair. The propriety standards advise those who will conduct the evaluation to ground the evaluation, from its beginning, in clear, written agreements that define the obligations of the client and evaluator for supporting and executing the evaluation.

The evaluation should be designed, executed, and reported to protect all involved parties' rights and dignity. Findings must be honest and not distorted in any way. Reports should be released in accordance with advance editing and disclosure agreements and applicable freedom of information statutes. Moreover, reports should convey appropriately balanced accounts of strengths and weaknesses.

The propriety standards reflect the fact that evaluations can affect many people in negative as well as positive ways. The propriety standards are designed to protect the rights of all parties to an evaluation.

2.2.4 Accuracy standards

Accuracy standards are intended to ensure that an evaluation will reveal and convey valid and reliable information about all important features of the subject program: in short, to ensure the evaluation's results are correct.

An evaluation should clearly document the program as it was planned and actually executed. It should describe the program's background and setting and determine its outcomes. It should identify and substantiate the appropriateness of the evaluation's information sources, measurement methods and devices, analytical procedures, and provisions for bias control. It should present the strengths, weaknesses, and limitations of the evaluation's plan, procedures, information, and conclusions. It should describe and assess the extent to which the evaluation provides an independent, unbiased assessment as opposed to a possibly biased self-assessment.

In general, this group of standards requires evaluators to obtain technically sound information, analyze it correctly, report justifiable conclusions, and note any pertinent caveats. The overall rating of an evaluation against the accuracy standards is an index of its overall validity.

2.2.5 Evaluation accountability standards

Accountability standards ensure evaluations are transparent and trustworthy. Evaluation accountability standards are intended to ensure that those responsible for conducting the evaluation document make available for inspection all aspects of the evaluation that are needed for independent assessments of its utility, feasibility, propriety, accuracy, and accountability. The evaluator should document the evaluation's essential details, including how it was planned, how it was executed, what data it obtained, and how it was reported.

The evaluator should also make an internal assessment of the evaluation and attest to the extent that it met all of the standards. Additionally, the evaluator should be proactive in seeking, cooperating with, and advocating release of an independent, standards-based assessment of the evaluation; that is, an external metaevaluation or peer review where justified.

2.3 Uses of Project Evaluations

FRA RD&T evaluations focus on two main uses: formative and summative.

A **formative evaluation** is an evaluation that proactively assesses a project from start to finish. It regularly issues feedback to assist the formulation of goals and priorities, provide direction for planning by assessing alternative courses of action and draft plans, guide project management by assessing and reporting on implementation of plans and interim results, and supply a record of collected formative information and how it was used

RD&T project managers are expected to obtain or conduct formative evaluations before and throughout a project to guide planning and implementation, help assure success, and document activities and costs. Basically, those who plan and carry out RD&T projects should obtain and apply formative evaluation to help set project goals; develop project plans and budgets; systematically identify and address emerging problems and issues as they arise; help assure project quality; where needed, take corrective actions; and track and provide direction for improving interim results. RD&T staff should document formative evaluation findings for use in completing the project's final summative evaluation.

A **summative evaluation** is a comprehensive evaluation of a project, or a project stage, after it has been completed. It draws together and supplements previous evaluative information to provide an overall judgment of the project's value. Such evaluations help interested audiences decide whether a project—refined through development and formative evaluation—achieved its goals, met targeted needs, constitutes a significant contribution in an area such as railroad safety, and is worth what it cost.

Those who conduct RD&T's projects are expected to obtain and report summative evaluations that assess a project's quality, its accomplishments, its weaknesses, its impacts, its side effects, its fiscal accountability, and its cost-effectiveness. These summative evaluations primarily should culminate in a comprehensive, credible assessment of a project's value to the transportation industry and the society it serves.

Primary audiences for FRA RD&T summative evaluations include RD&T's director and division chiefs, FRA's administrator and Safety Council, OMB, the railroad industry, railroad labor, GAO, the Congress, and the public.

The foci for FRA,RD&T summative evaluations include the questions and concerns of the audiences named above, the assessed needs and problems to which RD&T projects are addressed, and FRA,RD&T fundamental values, including railroad safety, risk reduction, and reduction in injuries and fatalities.

Prior RD&T summative evaluations of safety culture interventions were highly influential in developing FRA's Risk Reduction Program and that part of the Rail Safety Improvement Act of 2008 that influenced broad safety culture change in the industry overall.

2.4 Metaevaluation

Metaevaluation is the evaluation of evaluation. Its formative use is to help guide an evaluation to a successful conclusion. Its summative use is to provide a project evaluation's audiences with an independent assessment of the evaluation's soundness.

Metevaluation is to project evaluation as auditing is to financial accounting. In both cases the believability of self-assessments of either projects or an organization's finances is independently validated.

Independent metaevaluations of RD&T's project evaluations are especially important because the FRA,RD&T approach to project evaluation often is one of self-evaluation. The functions of contracted independent metaevaluations are to assure, assess, and disclose each project evaluation's utility, feasibility, propriety, accuracy, and accountability.

The three essential components of evaluation accountability are documentation of the subject evaluation's design, implementation, and findings; internal monitoring, assessment, and documentation of the ongoing evaluation process; and independent assessment and judgment of the evaluation's aims, design, implementation, and results.

2.5 Types of Evaluation

FRA RD&T project evaluations are divided into four types labeled context, input, implementation, and impact evaluations.

2.5.1 Context evaluations

Context evaluations assess needs, problems, assets, and opportunities, plus relevant contextual conditions and dynamics.

Those conducting RD&T projects are expected to acquire (or conduct) and use context evaluations to define goals and set priorities and to make sure project goals are targeted to address significant, assessed needs and problems in the area of railroad safety. Project evaluators and administrators should provide oversight bodies and other audiences for project evaluations with context evaluation findings by which to judge whether a given project was guided by appropriate goals and also to judge outcomes for their responsiveness to the project's targeted needs, problems, and goals.

2.5.2 Input evaluations

Input evaluations assess a project's strategy, action plan, staffing arrangement, and budget for feasibility and potential cost-effectiveness to meet targeted needs and achieve goals. An input evaluation may be comparative as in identifying and assessing optional ways to achieve a project's goals, or non-comparative in assessing a single plan and its components.

Those who plan RD&T projects are expected to obtain (or conduct) and use input evaluations to identify and choose among competing plans, identify possible project performance measures, write funding proposals, allocate resources, assign staff, schedule work, and ultimately help others judge a project's plan and budget.

2.5.3 Implementation evaluations

Implementation evaluations monitor, document, assess, and report on the implementation of project plans. Such evaluations provide feedback throughout a project's implementation and later report on the extent to which the project was carried out as intended and required.

Those who conduct RD&T projects are expected to obtain (or conduct) and use periodic implementation evaluations to take stock of their progress, identify implementation issues, and adjust their plans and performance to assure project quality and on-time delivery of services. At the end of the project or after a project stage, the project's staff, overseers, and constituents should use the implementation evaluation's documentation to judge how well the project was

carried out. They may also use the implementation's documentation to judge whether a project's possibly deficient outcomes were due to a weak intervention strategy or to inadequate implementation of the strategy.

2.5.4 Impact evaluations

Impact evaluations identify and assess a project's costs and outcomes — intended and unintended, short term and long term. These evaluations provide feedback during a project's implementation on the extent that project goals are being addressed and achieved; at the project's end impact evaluations identify and assess the project's full range of accomplishments. The key questions are: Did the project achieve its goals? Did it successfully address the targeted needs and problems? What were any unexpected outcomes, both positive and negative? Were the project's outcomes worth their cost?

In summing up long-term evaluations, the impact evaluation component may be divided into four subparts of assessment: reach to the targeted communities or group of beneficiaries, effectiveness, sustainability, and transferability. These impact evaluation subparts ask: Were the right beneficiary groups reached? Were the targeted needs and problems addressed effectively? Were the gains in a project's accomplishments and mechanisms to produce them sustained and affordable over the long term? Did the strategies and procedures that produced the accomplishments prove to be transferrable, adaptable, and affordable for effective use elsewhere?

Those who conduct RD&T projects are expected to conduct (or obtain) and use interim impact evaluations to maintain focus on achieving important outcomes and to identify and address deficiencies in the project's progress toward achieving successful outcomes. Ultimately, those responsible for RD&T projects are expected to use evaluations to assess and report on the project's accomplishments. It is expected that RD&T's managers, overseers, funders, and constituents will use final impact evaluation results to judge whether a project's accomplishments were significant and worth the cost.

2.6 Evaluation Framework

Table 1 summarizes employment of the four types of evaluation for both formative and summative purposes. The matrix's eight cells encompass the main types of evaluative information needed to guide evaluation activities and produce credible, and therefore defensible, formative and summative evaluation reports. This table is intended to help evaluators of RD&T projects to conceptualize, plan, and conduct evaluations that serve both formative and summative roles and address the full range of important evaluative questions throughout an RD&T project's lifecycle.

Table 1. The Relevance of Four Evaluation Types to Formative and Summative Evaluation Roles

Evaluation Roles	Types of Evaluation			
	Context	**Input**	**Implementation**	**Impact**
Formative: Proactive application of descriptive and judgmental information to assist decision making, project implementation, quality assurance, and accountability	Guidance for identifying needed interventions, choosing goals, and setting priorities by assessing and reporting on needs, problems, risks, assets, and opportunities	Guidance for choosing a project strategy (and possibly an outside contractor) and settling on a sound implementation plan and budget by assessing and reporting on alternative strategies and resource allocation plans and subsequently closely examining and judging the operational plan and budget	Guidance for executing the operational plan by monitoring, documenting, judging, and repeatedly reporting on project activities and expenditures	Guidance for continuing, modifying, certifying, or terminating the project by identifying, assessing, and reporting on intermediate and longer term outcomes, including side effects
Summative: Retroactive use of descriptive and judgmental information to sum up the project's value, e.g., its quality, efficiency, cost, practicality, safety, impact, and significance	Judging goals and priorities by comparing them to assessed needs, problems, risks, assets, and opportunities	Judging the implementation plan and budget by comparing them to targeted needs, problems, and risks; contrasting the plan and budget with critical competitors; and assessing their compatibility with the implementation environment and compliance with relevant codes, regulations, and laws	Judging project execution by fully describing and assessing the actual process and costs, comparing the planned and actual processes and costs, and assessing compliance with relevant codes, regulations, and laws	Judging the project's success by comparing its outcomes and side effects to targeted goals, needs, problems, and risks; examining its cost-effectiveness; and, as feasible, contrasting its costs and outcomes with competitive projects; also interpreting results against the effort's outlay of resources and the extent to which the operational plan was both sound and effectively executed

Table 2. Types of Formative and Summative Questions to Be Addressed By Context, Input, Process and Product Evaluations

Evaluation Roles	Types of Evaluation			
	Context	**Input**	**Implementation**	**Impact**
Formative	-What are the highest priority RD&T needs in the given program area? -What is an apt definition and prioritization of goals for addressing the targeted needs? -What assets are potentially available to assist in achieving the goals?	- What are the most promising potential approaches to producing the needed RD&T? -How do these alternatives compare on past uses, potential for success, costs, feasibility, etc.? -How can the needed RD&T be most effectively designed, staffed, funded, & implemented? -Is the produced action plan sound and workable? -What are predictable barriers to effective implementation?	-To what extent is the RD&T project proceeding on time, within budget, and effectively? -What, if any, impediments to successful implementation need to be addressed? -If necessary, how can the design be improved? -How can the implementation be strengthened, e.g., special training for staff, reallocation of resources, updating of the schedule?	-To what extent is the project achieving its goals? -What if any, unexpected accomplishments are emerging? -What, if any, negative effects are emerging? -What side effects (positive or negative) are emerging? -How can the implementation be modified to maintain and increase success or eliminate bad outcomes?
Summative	-To what extent did this project address high priority needs? -To what extent did project goals reflect the targeted needs? -To what extent did the goals take account of barriers to success? -To what extent did the goals incorporate use of available assets to enhance prospects for success?	-What strategies were considered? -What strategy was chosen and why, compared to other viable strategies (re. prospects for success, feasibility, costs)? -How well was the chosen strategy converted to a sound, feasible work plan?	-To what extent was the project carried out as planned or modified with an improved plan? -How effectively did staff identify and overcome problems of implementation? -How well was the project executed?	-To what extent did this project effectively address the original assessed needs and achieve its goals? -What, if any, were the unanticipated positive effects? -What, if any, were the unexpected negative effects? -What conclusions can be reached in terms of the project's quality, impacts, cost effectiveness, sustainability, and broad applicability?

2.7 Key Evaluation Questions

Table 2 summarizes the types of formative and summative questions to be addressed by context input, process, and product evaluations. This matrix poses example evaluation questions that are focused on improving safety throughout the railroad industry.

2.8 Stakeholder Engagement

RD&T project managers are expected to provide stakeholders with opportunities to:

- Make inputs to project evaluation plans
- Assist the collection of needed information
- Comment on draft evaluation reports
- Learn and use evaluation's findings

To succeed, RD&T project evaluations must validly address the questions and concerns of interested stakeholders. Also, stakeholders' engagement in the project evaluations is crucially important to assure that parties with interest and roles in improving railroad safety will learn, seriously consider, and, as appropriate, act on evaluation findings.

RD&T projects serve, or are responsible to, a wide range of constituencies. Among others these include the public, railroad industry, railroad labor, interested RD&T specialists, FRA, DOT's Safety Council, Volpe National Transportation Center, OMB, GAO, public media, and the Congress. Persons in these groups have stakes in the contributions of RD&T projects to improving railroad safety. RD&T is dedicated to soliciting and addressing the views and questions of such groups during its planning, conduct, and reporting of project evaluations. Also, RD&T projects will keep interested stakeholders informed about evaluation findings as they are finalized.

Those who design and conduct RD&T project evaluations will plan, budget, and employ means to engage stakeholders in project evaluations such as:

- Systematically identify parties with legitimate interests in the evaluation
- Announce and provide opportunities for stakeholders to provide inputs for evaluations
- Provide stakeholders with periodic feedback from the evaluation
- Set up and communicate periodically with an evaluation stakeholder review panel
- Maintain a dedicated project evaluation list serve
- Conduct periodic webinars focused on evaluation findings
- Distribute a periodic project evaluation newsletter
- Distribute draft evaluation reports to obtain stakeholders' reviews of the reports
- Conduct periodic evaluation feedback workshop for interested stakeholders

2.9 Coordination of Project Evaluations

At present, the FRA RD&T approach to project evaluation includes no staff office of evaluation or centralized coordination of project evaluations. Division chiefs and project managers have responsibility and authority to conduct and coordinate their own evaluations. Such conduct and coordination of evaluations are expected to be in compliance with the evaluation concepts, functions, and standards defined in this manual and FRA RD&T's 2012 Strategic Plan. The basic rationale for staffing evaluations within each project is to assure that systematic evaluation becomes integral to the work in all projects. The basic concept in this respect is that of a virtual evaluation system that is pervasive throughout FRA RD&T. Eventually, however, it may prove advantageous to establish and operate a separate evaluation support unit.

2.10 Resources and Support for Project Evaluations

To secure the needed evaluations, the budgets for each project should include allocations for both an evaluation and an independent metaevaluation. As a rule of thumb, about 7% of the project's budget should be allocated to evaluation and about 2% to support an independent metaevaluation. The actual amounts for evaluation and metaevaluation should be determined by considering the size, complexity, and importance of the particular project to be evaluated. In some cases it may be appropriate to devote as much as 25% of a project's budget to evaluation and as much as 5% to the associated metaevaluation. Project administrators should exercise judgment in determining the appropriate level of funding for each evaluation and each metaevaluation.

3. Guidelines for Project Evaluations

The guidelines in this section are provided to help evaluators and their clients systematically consider all steps needed in launching, conducting, and securing use of sound evaluations.

3.1 Decide the Extent to Which Each RD&T Project Should be Evaluated.

The FRA RD&T Office's mandate for evaluation requires all projects at least to a minimally acceptable degree, to build in evaluation methods from the start. On average, project planners are advised to allocate about seven percent of the project budget to evaluation. However, some projects will require less resources and effort than others and vice versa. The chart in Table 3 is offered to help project planners determine the scope and nature (e.g., internal or external) of needed evaluation in a planned project. Those who have to decide on the scope of evaluation to be included in project plans and budgets may complete this chart to help in making the needed determinations.

Instructions for completing and using the chart are as follows:

- For each of the 13 **considerations** in deciding on evaluative scope, place a checkmark (√) in the appropriate column (No, Possibly, Yes)
- Add the column totals, multiply each column total, respectively, by 1, 2, or 3 and insert the results in the appropriate cells at the chart's bottom.
- As rules of thumb, consider there is a very high need for rigorous, extensive project evaluation if the total score is between 36 and 45, a more than average need for rigorous evaluation if the score is between 20 and 35, and a normal need for project evaluation if the score is between 13 and 19.
- Beyond using these rules of thumb, carefully consider the contents of each listed consideration in judging your project's level of need for rigorous evaluation, whether the evaluation should be internal or external, and whether it should be supplemented by an independent metaevaluation.

Table 3. Key Considerations in Determining a Project's Scope of Needed Evaluation

Considerations	Project Planner Judgments		
	No	**Possibly**	**Yes**
Scores	**(1)**	**(2)**	**(3)**
1. The project's sponsor/funder requires a rigorous evaluation of the project			
2. The sponsor/funder requires an independent evaluation			
3. Initial project funding will be dependent on provision for rigorous evaluation			
4. Future project funding will be dependent on reporting of rigorous evaluation			
5. The project entails significant risks of negative side effects			
6. The project has a strong prospect of being controversial			
7. The project director desires rigorous evaluation of project implementation			
8. The project director desires rigorous evaluation of project outcomes			
9. Project stakeholders do or will want project goals to be validated against assessed needs of intended beneficiaries			
10. Project planners need assessments of alternative project approaches			
11. The project director and staff want periodic evaluative feedback on project implementation			
12. At least some key project stakeholders would reject or ignore project results in the absence of rigorous evaluation			
13. Follow-up evaluation will be required to assure intended impacts			
14. There is significant societal interest in this project's success			
15. Project staff will need rigorous evaluation of the project in order to disseminate/publish its results			
Column Totals			
Weighted column totals: column totals multiplied times the column weights (1, 2, 3)			
Derived Scores: sum of the weighted column totals			

Interpretation of derived scores:

0 – 19 Normal Need for Project Evaluation
20 – 35 Above Average Need for Project Evaluation
36 – 45 Very High Need for Project Evaluation

3.2 Determine Whether an Evaluation Should be Internal or External

A project evaluation appropriately may be internal/self evaluation, external/independent evaluation, both, or any of these supported by an independent metaevaluation. Table 4 is provided to help project leaders assess these options and choose among them by identifying each option's advantages and disadvantages.

Table 4. Factors in Deciding Whether an Evaluation Should Be Internal, External, a Combination of Both, Or Any of the Three Plus Metaevaluation

Evaluation Arrangement	Advantages	Disadvantages
Internal	_Can be organic in supplying ongoing, non-threatening feedback plus a systematic record of project activities & results _Helps build the organization's evaluation capacity for the long run	_Lacks objectivity and may lack credibility with outside audiences
External	_Can supply objectivity and credibility	_Without support of internal evaluation may lack some of the information needed for a full evaluation _May be too detached to guide project activities _May be too intermittent to tell the whole story
Internal & External	_Can be organic in supplying ongoing feedback plus a systematic record of project activities and results _Can provide useful collaboration between internal and external evaluators in providing a full record of the project & credible, objective reports _Strong in providing opportunities for evaluation capacity development	_Likely to be costly _May be threatening to the internal evaluator
Internal plus Independent Metaevaluation	_Can be organic in supplying ongoing, non-threatening feedback plus a systematic record of project activities _Can overcome lack of objectivity & credibility for the internal evaluation through independent, low cost metaevaluation _Strong in providing opportunities for evaluation capacity development	_No major disadvantages
External plus Independent	_Very strong in providing objectivity & credibility	_Without support of internal evaluation may lack some of the information needed

Metaevaluation	_Efficient and relatively low in cost	for a full evaluation _External evaluation may be too detached to guide project activities _May be too intermittent to tell the whole story
Internal & External plus Independent Metaevaluation	_Very strong in providing objectivity & credibility _Can provide useful collaboration between internal and external evaluators in providing a full record of the project & credible, objective reports _Can be organic in supplying ongoing, non-threatening feedback plus a systematic record of project activities _Strong in providing opportunities for evaluation capacity development -Most fail-safe approach for highly controversial projects	_Very costly

3.3 Specify Criteria for Evaluating Different RD&T Stages

RD&T projects span the full range of processes involved in improving railroad operations. Across all such projects evaluations should address a wide range of criteria. Relevant activities and associated criteria are:

Basic and Applied Research

Reliable information, rigorous process, internal validity, and external validity

Development

Face validity/appropriateness, estimated viability, projected impact and relative contribution, cost, ease of use, operability, cost, and efficiency

Translation, Demonstration, and Dissemination

Message clarity and fidelity, pervasiveness in communicating with potential adopters

Product/process feasibility, adaptability, practicality, affordability, and sustainability

Technology Transfer and Stakeholder Adoption

Quantity, interest, and relevant capabilities of potential adopters

Adoption and use of the product or process

Spread of the product's or process's use

Valuation and support of the product or process by the targeted users

Integration of the product or process into the users' operations

Meaningful feedback from users aimed at future improvements of the employed product or process

3.4 Develop a Design to Guide a Project Evaluation

Develop an initial evaluation design that lays out general processes and procedures for determining the project's value plus more specific plans, as appropriate, for assessing the project's context, inputs, implementation, and impacts.

Elements of the initial evaluation design should include the following:

- **Standards for guiding and judging the evaluation**, including utility, feasibility, propriety, accuracy, and evaluation accountability
- **Focus**, including subject project, evaluation assignment, client, audiences, questions, intended uses, time frame, barriers to evaluation, etc.
- **Key evaluation questions**, including those of most importance to the evaluation's client and key stakeholders, plus possibly additional questions needed to fully assess the subject project's quality and significance
- **Collection of information**, including project description, information sources, quantitative and qualitative data collection procedures, sampling plan, etc.
- **Organizing information**, including verifying, storing, retrieving, etc.
- **Reporting**, including interim and final reports, pre-release reviews, dissemination, supporting use, etc.
- **Administration**, including oversight, staff, schedule, budget, contract, etc.
- **Metaevaluaton**, internal, external

Periodically review and update the evaluation design as appropriate.

3.5 Convert the General Evaluation Design into a Specific Evaluation Plan

In preparation for implementing the evaluation, convert the general evaluation design into a plan with as much specificity as is reasonable and necessary for proceeding with the evaluation. Use the following Evaluation Design Checklist to assist your development of the specific evaluation Plan.

Table 5. Evaluation Design Checklist (Adapted from [6])

A. Focusing the evaluation
___1. Determine the evaluation client, i.e. the person who requested the evaluation or will be the primary user of its findings.
___2. Determine the project to be evaluated.
___3. Identify the project's location, background of development, key beneficiaries, goals, director, key staff, time frame, funding, current status, etc.
___4. Identify the evaluation's audience, including the full range of potential users of evaluation findings, especially the project's director and staff members; oversight bodies; funders; project beneficiaries; researchers, developers, policy makers, and operators in the project's area of

service; etc.

___5. Engage key stakeholder groups to give their notions of the most important evaluation questions, the information needed to answer the questions, and also any concerns they might have about the evaluation.

___6. Identify parties who might be harmed or feel threatened in some way by the evaluation, identify their concerns, and obtain other input they choose to provide.

___7. Determine and examine the background of the request for the evaluation and find out as much as possible about any political and social factors that influenced the request for the evaluation.

___8. Identify and address potential barriers to the evaluation, for example, the need to gather sensitive information, access to all the relevant information, human subjects review requirements, requirements for confidentiality or anonymity, opponents of the evaluation, prospects for undue political influence on the evaluation, prospects for misuse of findings, prospects for non-use of findings, conflicts of interest, issues of race and language, and availability of needed funds.

___9. Identify and review relevant existing information, for example, previous evaluations of the project, evaluations of similar projects, pertinent literature, and relevant needs assessments.

___10. Agree with the client on the standards for guiding and assessing the evaluation, e.g., utility, feasibility, propriety, accuracy, and evaluation accountability.

___11. Agree with the client on the evaluation framework to be applied, e.g., formative and/or summative evaluation of context, inputs, implementation, and/or impacts.

___12. Engage the client to express requirements or preferences regarding the evaluation's time frame, expected qualifications of involved evaluators, bottom-line evaluation questions, types and timing of needed reports, stakeholders who should be involved and how they should be involved, and allowable cost for the evaluation.

___13. Inform the client of the nature and importance of metaevaluation and advise her or him to fund an independent metaevaluation of the project evaluation.

___14. Use inputs obtained so far to synthesize a set of the evaluation questions to be addressed (such questions may be categorized in terms of context, inputs, implementation, impacts and/or sections of the projected final report, such as descriptive and evaluative questions related to Project Background, Project Description, Project Results.

___15. Engage the client to assess, modify as needed, and approve the evaluation questions.

___16. Decide whether to proceed with the assignment.

B. Collecting Information

___1. Consider collecting a wide range of information about the project: need for the project, problems to be addressed, opportunities/assets that could assist the project, history of the project, beneficiaries, funders and other benefactors, project goals and procedural plan, contrast to similar projects, schedule, projected costs, available funds, staff qualifications, currently level of implementation, main outcomes so far, positive and negative side effects so far, reputation among relevant interest groups, past evaluations, provisions for sustaining practices if successful, and prospects for disseminating practices that prove successful, for example.

___2. Choose the framework for collecting information: case study, sample survey, field experiment, or a multi-method study, for example.

___3. Determine the information sources: documents, files, databases, financial records, beneficiaries, staff, funders, experts, government officials, interest groups in the project's field of service,

and/or community interest groups.

___4. Determine the information collection instruments and methods, for example, interviews, participant observers, independent observers, focus groups, town hall meetings, literature review, search of archives, Delphi, survey, rating scales, knowledge tests, debates, site visits, photography, video records, log diaries, goal-free study, and case study.

___5. Specify the sampling procedures for each source: purposive, probability, and/or convenience.

___6. Seek to address each main question with multiple methods and data points.

___7. Schedule information collection, denoting times when each information source and each method will be engaged.

___8. Assign responsibilities for information collection.

___9. Give the client and other interested parties a rationale for the information collection plan.

___10. Review the information collection plan's feasibility with the client, and consider making prudent reductions or adjustments.

C. Organizing Information

___1. Develop plans and assignments for coding, verifying, filing, controlling, and retrieving information.

___2. Design a database for the obtained information, including appropriate software.

___3. Specify the equipment, facilities, materials, and personnel required to process and control the evaluation's information.

D. Analyzing Information

___1. Identify bases for interpreting findings, such as beneficiaries' needs, problems the project is trying to solve, objectives, standards, norms, the project's previous costs and performance, costs and performance of similar projects, and judgments by experts and project stakeholders.

___2. Specify qualitative analysis procedures, for example, thematic analysis, content analysis, summaries, scenarios, or contrasts of photographs.

___3. Specify quantitative analysis procedures; examples are descriptive statistics; trend analysis; cost analysis; significance tests for main effects, interactions, and simple effects; effect parameter analysis; meta-analysis; item analysis; factor analysis; regression analysis; regression discontinuity analysis; and charts, tables, and graphs.

___4. Select appropriate computer programs to facilitate quantitative and qualitative analyses.

___5. Plan to search for trends, patterns, and themes in the qualitative information, particularly in reference to the approved evaluation questions.

___6. Plan to contrast different subsets of qualitative and quantitative information to identify both corroborative and contradictory findings.

___7. Plan to address each evaluative question by referencing and citing the relevant qualitative and quantitative information plus relevant alternative analyses.

___8. Plan to use qualitative information to elaborate and explain quantitative findings.

___9. Plan to state caveats as appropriate in consideration of any inconclusive or contradictory findings.

___10. Plan to synthesize quantitative and qualitative information, for example, by embedding quantitative information within a qualitative narrative or by embedding interview responses and

other qualitative findings in the discussion of quantitative findings.

___11. Anticipate that the client or other stakeholders may require recommendations to correct problems identified in the findings, and be prepared to explain that the same data that uncovered the problems are unlikely to provide valid direction for solving the problems

___12. Consider planning a follow-up project to generate and validly assess alternative courses of action for solving identified problems; such procedures might include an input evaluation of available alternative solution strategies, creation and evaluation of new solution strategies, engagement of relevant experts, review of relevant literature, or a working conference to chart and assess possible courses of action.

E. Reporting Information

___1. Clarify the overall audience and which segments of the audience will receive which reports, for example, the project's client, staff, policy board, and beneficiaries might all receive an overall executive report while particular groups might receive special reports targeted to their particular roles and interests.

___2. Identify the reports needed by different audiences, such as interim, final, or component-specific reports; context, input, process, and product evaluation reports; technical appendixes; executive summary; and an internal metaevaluation report.

___3. For each report, determine the appropriate formats, such as printed, oral, electronic, telephone, multimedia, storytelling, pictorial, memos, informal exchanges with the client, or sociodrama.

___4. Outline the contents of at least the main report, showing how findings from different sources and methods will be synthesized to answer the main evaluation questions.

___5. Consider dividing the final report into three sub-reports: Project Antecedents (for those who need background information), Project Implementation (for those who would replicate the project), and Project Results (for the entire audience).

___6. In technical appendixes or a separate technical report, plan to include résumés of evaluation staff and consultants, information collection instruments and protocols, reports of findings for particular data collection procedures, data tables, a log of data collection activities, a list of interim reports, the evaluation contract, a summary of evaluation costs, and an internal account of how well the evaluation met the standards of the evaluation profession.

___7. Develop a plan and schedule for delivering reports to the right-to-know audiences.

___8. As appropriate, obtain the client and other stakeholders prerelease reviews of draft reports.

___9. Use feedback on draft reports to ensure that final versions are correct and clear.

___10. Conduct feedback sessions to assist the client group in reviewing and discussing draft evaluation reports.

F. Administering the Evaluation

___1. Delineate the evaluation schedule.

___2. Define and plan to meet staff and resource requirements.

___3. Ensure that the evaluation plan is sufficient to meet pertinent standards of the evaluation field.

___4. Provide for at least internal formative and summative metaevaluations.

___5. Strongly advise the client to obtain an independent metaevaluation and agree to cooperate with and supply needed information to the external metaevaluator.

___6. Delineate a budget for the evaluation.

___7. Negotiate an evaluation contract, specifying audiences, evaluator responsibilities and protocols, editorial and dissemination responsibility and authority, the evaluation budget and schedule for payments.

___8. Provide for reviewing and updating the evaluation plan, budget, and contract as needed.

___9. Plan for developing a stakeholder review panel and engaging them throughout the evaluation to review draft evaluation plans, tools, and reports and to facilitate data collection

3.6 Suggestions for Developing Key Evaluation Questions

The development of sound, pertinent evaluation questions has four essential elements.

First, interview the client to clarify her or his view of the main questions to be answered. Through this exchange it is important to identify questions that: have adequate scope, e.g., pertaining, as appropriate, to the project's background, structure, implementation, and outcomes; bear on the project's quality and significance; are clear; and are answerable with the projected evaluation's timeframe and resources. During this interview it is also important to engage the client to clarify the intended users and uses of findings.

Second, identify and interview persons who are representative of the main stakeholder groups. The client will have identified many such persons and the evaluator should start the process of determining key evaluation questions by interviewing these individuals. In the course of those interviews it can be important to ask their recommendations as to other stakeholders who should provide input into the development of evaluation questions. As with the interview of the client, stakeholders should be asked to identify what they see as the most important questions to be addressed. In the ensuing discussion you should engage the stakeholders to clarify the questions and craft them to assure they are targeted to issues of the project's quality and significance and feasible to address within the time and resource boundaries of the evaluation.

Third, personally reflect on the questions obtained from the client and interviewed stakeholders, add questions deemed necessary to assess the project's merit and worth (e.g., by referencing Table 2 above), and synthesize a set of questions to provide the initial focus for the evaluation. Consider this set of questions to be tentative until it has been reviewed by the client and possibly a representative group of intended evaluation users, as well. Allow for the possibility that additional questions may be identified during the evaluation, especially as the client and stakeholders react to interim evaluation reports. In this sense, identifying key evaluation questions appropriately is an ongoing process throughout the evaluation.

Fourth, meet with the client to reach closure and agreement on the initial set of questions to be addressed by the evaluation. Also, reach agreement with the client on the process to be followed in periodically reviewing and updating evaluation questions during the course of the evaluation.

3.7 Develop a Budget for the Evaluation.

Develop a budget that is sufficient to assure that the evaluation design can be executed at a high level of quality.

Table 6. Evaluation Budgeting Checklist

- **Determine the appropriate type(s) of evaluation budget agreement (Check all that apply)**

___ Grant

___ Fixed-price contract

___ Cost-reimbursable contract

___ Cost plus fee

___ Cost plus grant

___ Cost plus profit

___ Cooperative agreement

___ Modular

___ Subject to updates

- **Determine the required level of budget detail (Check all that apply)**

___ Line item budget

___ Line item by task

___ Line item by year (or other work period)

___ Task by year (or other work period)

___ Total budget only

___ Breakout of local contribution

___ Budget notes

- **Determine pertinent cost factors (Check all that apply)**

___ Budget ceiling (e.g., 5 or 10 percent of the total project budget)

___ Allowance for pre-award costs

___ Hiring costs

___ Name or job title and daily salary rate for each staff member

___ Name or job title and hourly salary rate for each staff member

___ Fringe rates for each category of staff

___ Number of workdays for each staff member

___ Number of work hours for each staff member

___ Daily rate for staff per diem

___ Projected number of evaluation staff trips

___ Projected average travel cost per evaluation staff trip

___ Name or job title and daily rate for each consultant

___ Number of workdays per consultant

___ Name or job title and hourly rate for each consultant

___ Number of work hours for each consultant

___ Projected number of consultant trips

___ Projected total travel days for consultants

___ Daily rate for consultant per diem

___ Projected average travel cost per consultant trip

___ Factor for annual evaluation staff salary increments

___ Factor for annual level of inflation

___ Other

- **Determine line items (Check all that apply)**

___ Evaluation personnel salaries

___ Evaluation personnel fringe benefits

___ Total evaluation personnel

___ Travel

___ Consultant honoraria

___ Consultant travel

___ Consultant materials and other support

___ Total consultant costs

___ Supplies

___ Telephone

___ Photocopying and printing

___ Computers

___ Postage

___ Total evaluation cost

___ Evaluation planning grant

___ Subcontracts, e.g., metaevaluation

___ Other costs

- **Group line items for convenience**

___ Evaluation personnel

___ Evaluator travel

___ Consultants

___ Supplies

___ Services

___ Subcontracts

___ Total evaluation cost

___ Budget notes

- **Determine project's contribution, if any (Check all that apply)**

___ Contributed time of staff members

___ Facilities, equipment, communications, clerical support, etc.

___ Other

- **Compute costs and charges (Check all that apply)**

___ By year (or other work period)

___ By evaluation tasks

___ By subcontract

___ Overall

___ Project contribution

___ Add the budget notes

___ Obtain a budget review and finalize the budget

- **Provide for the evaluation's fiscal accountability**

___ Responsibility for internal accounting

___ Responsibility for financial reporting

___ Responsibility for audit of evaluation expenditures

- **Clarify requirements for release of evaluation funds**

___ Funding source and contact persons

___ Financial reporting requirements

___ Schedule of financial reports

___ Amounts and schedule of payments

3.8 Negotiate a Printed Agreement to Guide and Govern the Evaluation

After a project leader and the designated evaluator have come to terms on an evaluation plan and budget, the two parties need to negotiate and document an agreement on how the evaluation will be carried out and what it will produce. Such an agreement must assure that the evaluation will be conducted ethically and legally and also be in compliance with RD&T's evaluation standards, i.e., utility, feasibility, propriety, accuracy, and evaluation accountability.

3.8.1 Rationale and Definitions

Negotiating and documenting an evaluation agreement are important for ensuring the evaluation's success. This process establishes a trusting relationship between an evaluator and a client and documents their agreements. Such agreements are important for holding each party accountable for discharging their agreed-upon responsibilities and resolving disputes over disagreements that may emerge regarding a host of managerial, funding, implementation, reporting, and other relevant matters.

Evaluation agreements may take the form of a formal contract or a less formal memorandum of agreement. Both forms of agreement should provide a framework of mutual understandings for proceeding with evaluation work. The formal contract is most applicable in large projects and especially external evaluations, while memorandums of agreement are best suited to internal evaluations and small projects. Both should be printed.

Both an evaluator and client will have important responsibilities for achieving a professionally defensible and effective evaluation. Their respective areas of authority and responsibility for conducting the evaluation should be clearly defined and differentiated.

Although evaluation agreements necessarily are between two parties, they should reflect inputs from pertinent intended users of the evaluation, e.g., FRA's Safety Council, interested railroad companies, railroad labor, and the DOT. The evaluator often should include in the formal agreement commitments regarding the involvement of stakeholders, e.g., a guarantee of confidentiality regarding their completion of questionnaires or participation in interviews or providing them with a summary of the evaluation's findings.

An evaluation agreement should be stated clearly, recorded in writing, and signed by both parties. Also, it should stipulate bases and procedures for cancelation or amendment prior to, during, or following the evaluation. Although written evaluation agreements should be as explicit as possible, they also should allow for appropriate, mutually agreeable adjustments during the planning and execution. Such agreements will be more tentative in formative than summative evaluations. However, even in tightly designed and tightly scripted evaluations, it would be a mistake to make the agreement so detailed that it impedes an evaluator's creativity.

Among the many practical and technical reasons for negotiating advance evaluation agreements are establishing clarity on deadlines; protocols for entering project facilities and collecting information from files and contacting human subjects; cooperation and support from personnel in the client's organization; and responsibility and authority for disseminating findings. An evaluation design will have treated many of these items in detail. In contracting, it is important to make all such design items a matter of formal agreement so that an evaluator can efficiently and effectively carry out the work with the approval and support of the RD&T Office client and other stakeholders. Often it is prudent to stipulate that the technical design is part and parcel of the formal agreement.

Key matters for agreement are the evaluation design, data collection and reporting schedule, access to needed information, protection of evaluation participants, individual and joint responsibilities for conducting the evaluation, security of the obtained information, evaluation reports and other deliverables, right-to-know audiences, agreements by certain stakeholders to cooperate with the evaluation, editorial responsibility and authority, dissemination of reports, arrangements to foster use of findings, funding, uses for educational purposes, and publication of evaluation results or other publishable features of an evaluation. Other agreements should define the standards for judging the evaluation, the study's objectives and scope of work, deliverables and their due dates, protocols to be observed in collecting and reporting information, provisions for keeping and reporting financial records, and the terms of compensation for the work.

3.8.2 An Evaluation Contracting Checklist

Table 7 is a checklist designed to help FRA RD&T project evaluators and clients identify, address, and reach agreement on key contractual issues to be covered in the contract or

memorandum of agreement that will govern the evaluation. Not all checklist items apply in every evaluation agreement. Also, many of them likely will be covered in the previously approved evaluation plan. However, it is prudent to consider all of them when starting a negotiation, reviewing a draft agreement, and finalizing the agreement. Then the parties to the agreement can select those items that should be incorporated in the contract or memorandum of agreement. Based on mutual decisions by the evaluator and client the items viewed as important for inclusion in the written agreement can be check marked (√). Items left blank should be interpreted as indicating no agreement and not to be covered in the written contract or memorandum of agreement. Mainly, the checklist is a tool for evaluators and clients to use in preparing to write and negotiate an advance agreement for conducting and reporting the evaluation. In writing up the formal agreement those items that are already satisfactorily addressed in the evaluation plan may be included in the evaluation agreement simply by stating that the agreement includes the provisions in the evaluation plan. After the checklist has been filled in RD&T's representative and the evaluator should sign, date, and preserve it for future reference.

Evaluator and client are advised to apply the checklist as follows:

- Use the Evaluation Contracts Checklist to decide on contents for inclusion in the evaluation agreement.
- Discuss the items in each section and mark (√) those that should be addressed in the written evaluation agreement.
- Agree on how the selected items should be addressed in the written agreement
- Sign and date the completed Evaluation Contracts Checklist
- Use the completed Evaluation Checklist to write up the Evaluation Agreement (either a formal contract or a memorandum of agreement)
- Sign, date, and preserve the formal evaluation agreement.

Table 7. Evaluation Contracts Checklist

Basic Considerations
____ Project to be evaluated
____ Purpose of the evaluation
____ Client
____ Other key audiences
____ Lead evaluator
____ Key success criteria
____ Standards for guiding and judging the evaluation
____ Evaluation questions
Information
____ Required information
____ Data collection procedures

____ Data collection tools

____ Information sources

____ Respondent selection plan

____ Provisions to obtain needed permissions to collect data

____ Follow-up procedures to ensure adequate information

____ Provisions for ensuring the quality of obtained information

____ Provisions to store and maintain security of collected information

Analysis

____ Procedures for analyzing quantitative information

____ Procedures for analyzing qualitative information

Synthesis

____ Process for synthesizing findings and reaching conclusions

____ Decision on whether evaluation reports should include recommendations

Reports

____ Deliverables and due dates

____ Interim report formats, content, length, audiences, and methods of delivery

____ Final report format, content, length, audiences, and methods of delivery

____ Restrictions and permissions to publish information from or based on the evaluation

Reporting Safeguards

____ Anonymity, confidentiality

____ Prerelease review of reports

____ Response/Rebuttal by client

____ Editorial authority

____ Authorized recipients of reports

____ Final authority to release reports

Protocol

____ Contact persons

____ Rules for contacting project personnel

____ Communication channels and assistance

Evaluation Management

____ Data collection timeline

____Reporting timeline

____ Assignment of evaluation responsibilities

Client Authority and Responsibilities

____ Access to information

____ Services, e.g., clerical, office equipment, and telephone

____ Personnel

____ Information

____ Facilities

____ Equipment

____ Materials

____ Transportation assistance

____ Work space

Evaluation Budget

____ Fixed price, cost reimbursement, cost plus

____ Payment amounts and dates

____ Conditions for payment, including delivery of required reports

____ Budget limits or restrictions

____ Agreed-on indirect rate

____Agreed-on overhead rate

____ Contacts for budgetary matters

Review and Control of the Evaluation

____ Contract amendment and cancellation provisions

____ Provisions for periodic review, modification, and renegotiation of the design as needed

____ Provision for evaluating the evaluation against professional standards of sound evaluation

Preparer _____Date _____

Agreed to:

Client/RD&T Representative_____Date_____

Evaluator_____Date_____

3.9 Staff the Evaluation

The RD&T Evaluation Implementation Plan on which this manual is based calls for each RD&T division to evaluate the projects for which it bears responsibility. RD&T's arrangements to support these evaluations include a part-time Senior Evaluation Specialist, an evaluation team in the Volpe National Transportation Center (pursuant to an Interagency Agreement), and independent contractors, as needed. In addition, a team at Volpe has been assigned to conduct five pilot evaluations under the direction of RD&T's senior evaluation specialist, Mr. Michael Coplen. The evaluators in Volpe and FRA RD&T are tasked to involve and address the

evaluation needs of key stakeholder groups in the Office of RD&T, other government agencies, and the railroad industry.

Table 8 is a matrix configured to summarize FRA RD&T staffing arrangements and stakeholder involvement relationships that support the implementation and utilization of the several pilot project evaluations. The matrix's column headings include the key parties that are expected to plan, conduct, report, and use the evaluations, while the row heading denote ten roles that are essential to the effective conduct and utilization of RD&T project evaluations. Within the matrix's cells, primary responsibilities for given evaluation roles are designated by a 1, and secondary responsibilities by a 2. These designations are only approximations and are intended to illustrate that the success of project evaluations will depend on effective, concerted efforts of the full range of FRA RD&T personnel and constituents.

Table 8. Staffing Project Evaluations*

	Primary and Secondary Responsibilities for Key Roles in RD&T's Project Evaluations					
Evaluation Roles	Volpe Administrators; FRA,RD&T's Director, Division Heads, & Senior Staff	RD&T Project Staff	External Intended Users	FRA,RD&T Senior Evaluation Specialist	Volpe Evaluators	Independent Contractors as Consultants or metaevaluators
Evaluation Planning & Budgeting	1	1	2	1	1	
Evaluation Contracting	1			2	1	
Evaluation Coordination				1	2	
Evaluation Execution		1		2	1	
Statistics and Measurement Support				2	2	
Report Preparation		1		2	1	
Report Dissemination	1	1	2	1	2	
Report Utilization	1	1	1	2		
Conceptual Leadership and Training				1		2
Metaevaluation	2			2		1

*Primary responsibility marked 1, secondary responsibility marked 2

3.9.1 FRA RD&T Leaders

RD&T's director, division heads, and senior staff play key roles in assuring that RD&T projects are effectively evaluated and used. Areas of primary responsibility include helping define evaluation questions and needed reports, negotiating the agreements for funding and conducting evaluations, and using and helping disseminate findings.

An area of secondary responsibility involves assessing and providing feedback on evaluation plans and draft reports. In general, RD&T project evaluations can succeed and be worth their

costs only if they are guided and supported by effective evaluation-oriented leaders within top administrative levels of FRA RD&T.

3.9.2 RD&T Project Staff

RD&T's Evaluation Implementation Plan requires project staffs to engage in a process of internal, self-evaluation. Accordingly, project managers and other staff members should engage in planning and implementing evaluations and using the results. Especially for those projects without external evaluations, a project's staff members bear primary responsibility for planning and executing evaluations, preparing and disseminating evaluation reports, and using the findings to guide project activities. In general, RD&T project staffs should conduct and make effective use of both formative and summative evaluations.

3.9.3 External Intended Users

RD&T project evaluations are intended not only for internal use but also for uses by outside audiences. Especially, these include federal government policy makers plus labor and management throughout the railroad industry. FRA RD&T leaders and evaluators definitely should do all they can to engage stakeholder groups to use evaluation findings for strengthening transportation safety policies and practices. The most important evaluation-related role of such stakeholder groups is to make informed use of evaluation findings. In addition, they can play key roles in assuring that evaluation plans are focused on questions of importance to improving railroad and other transportation safety policies and practices and later in disseminating evaluation findings.

Clearly, FRA RD&T administrators and project managers should arrange concrete opportunities to assure stakeholder involvement in evaluations and utilization of findings. Among the pertinent stakeholder engagement arrangements are establishing and interacting regularly with stakeholder review panels about evaluation plans and draft reports, establishing and regularly updating a project evaluation list serve, pre-release reviews of draft reports, briefings on evaluation findings to such government groups as FRA's Safety Council, and workshops to help key evaluation audiences understand and apply evaluation findings. All such stakeholder engagement arrangements require forethought, planning, and budgeting, which are important responsibilities of project planners and evaluators.

3.9.4 FRA RD&T Senior Evaluation Specialist

The FRA RD&T Senior Evaluation Specialist is the lynch pin in the FRA RD&T project evaluation system. Primary areas of responsibility include providing conceptual leadership and training in evaluation, help in planning evaluations, disseminating evaluation findings, financial planning for the RD&T project evaluation function, and coordination of selected FRA RD&T evaluations.

Secondary areas of support include contracting for external evaluation and metaevaluation services, helping projects implement evaluations, advising on statistical analysis procedures, constructing and advising on data collecting instruments, and writing and disseminating reports.

3.9.5 Volpe Evaluation Team

Through an Interagency Agreement, RD&T's Office engages the Volpe National Transportation Center to evaluate selected RD&T projects. The Volpe evaluation team's primary areas of evaluation responsibility include planning, staffing, budgeting, contracting, implementing, reporting evaluations, and facilitating use of findings.

Secondary areas of responsibility include advising on statistics and measurement matters and helping disseminate evaluation findings. Ultimately, this team is expected to play a pivotal role in helping Volpe institutionalize and mainstream systematic evaluation throughout the agency. Based on their current, rich learning and capacity development experiences this team will soon comprise an excellent resource for leading and supporting Volpe's effort to train and mentor colleagues throughout the agency to regularly conduct rigorous project evaluations and apply the results for quality assurance and accountability.

3.9.6 A Sample Role Description for Volpe Lead Project Evaluators

Table 9 provides a sample role description for Volpe's lead project evaluators. This description includes the full range of tasks and responsibilities involved in carrying out a sound evaluation. Although the lead evaluator needs to have a concept of, oversee, and be in charge of the full range of evaluation tasks, in most evaluations the lead evaluator will need to recruit and engage appropriately qualified individuals to carry out many of the specific tasks.

Table 9. A Sample Role Description for Volpe Lead Evaluators

Task Areas	Specific Responsibilities
Client/stakeholder engagement	• Meet with the client to gain an in-depth perspective on the nature of the subject project and the perceived need for an evaluation • Meet with persons who are representative of the project's stakeholders to get their take on the need for and appropriateness of the projected evaluation • Be sure to identify and obtain inputs from any parties who might be harmed by the evaluation • Based on interactions with the client and stakeholders, decide whether to proceed with the evaluation, unless not proceeding is not an option • As appropriate, set up a representative stakeholder review panel
Designing the evaluation	• Ground the evaluation planning effort in pertinent evaluation standards • Develop in-depth knowledge of the subject project • Engage the client and stakeholders in focusing the evaluation • Using client and stakeholder inputs, finalize the initial core evaluation questions • Analyze the subject project's political environment • Conceptualize a general framework within which to conduct the evaluation • Lay out a data collection and analysis plan • Plan the reports and reporting process
Staffing the evaluation	• Define needed staffing roles for the evaluation • Recruit and orient evaluation team members

	• As needed, recruit and orient evaluation subcontractors
Budgeting the evaluation	• Determine the evaluation's resource requirements • Develop an evaluation budget • Secure agreement with the client on the evaluation budget
Contracting the evaluation	• Secure human subjects review board approvals, as needed • Negotiate a written agreement with the client for the conduct of the evaluation • Inform right- to-know parties of the terms of the evaluation agreement
Training evaluation participants	• As needed, provide evaluation training to evaluation staff members, the client, evaluation subcontractors, and interested stakeholders
Collecting the needed Information	• Determine with the client and stakeholders the qualitative and quantitative information needed to address the core evaluation questions • Obtain or construct the needed evaluation instruments • Describe the subject project • Collect specified information • Verify and correct, as needed, the accuracy of the obtained information • Provide for secure storage and retrieval of information
Analyzing and synthesizing the obtained Information	• Analyze the qualitative information to address the evaluation's questions • Analyze the quantitative information to address the evaluation's questions • Synthesize the quantitative and qualitative information in response to the evaluation's questions
Reporting and facilitating use of the evaluation's findings	• Prepare and deliver needed interim reports and facilitate use of the reports • Prepare and deliver the final report • Facilitate use of the report • Append to the final report an attestation of the extent to which the evaluation measured up to standards of utility, feasibility, propriety, accuracy, and accountability
Cooperating with external metaevaluation	• Advise the client to contract for an external metaevaluation of the project • Cooperate with any external metaevaluation by responding to the metaevaluator's information requests
Overall management of the evaluation	• Coordinate and oversee the work of evaluation staff members • Coordinate and oversee the work of any evaluation subcontractors • Assure that obtained information and evaluation reports are kept secure • Manage and maintain accountability for the evaluation's finances • Provide the client with progress reports and financial reports as needed • Foster communication and mutual assistance among those engaged in the evaluation

3.9.7 Independent Contractors as Consultants or Metaevaluators

The roles of external evaluation contractors are mainly in the areas of independent metaevaluation and conceptual and technical consulting. To enhance the quality and assure credibility for its project evaluations, Volpe and FRA RD&T should regularly submit their self-evaluations to independent, standards-based review. RD&T's Evaluation Implementation Plan directs each project to conduct its own evaluation. The main exception is that projects may engage the Volpe National Transportation Center to conduct needed evaluations.

The metaevaluation area of responsibility is especially important to the success of RD&T project evaluations. Internal, self-evaluations have advantages, including engendering projects' habits of self-examination plus staff members development of evaluation skills. But self-evaluations are also suspect if they are not subjected to competent independent scrutiny. Contracting for independent metaevaluations that are based on the standards of the evaluation profession is an important way for FRA RD&T to scrutinize its own projects and convince outsiders that the self-evaluations are rigorous and unbiased. Moreover, when the metaevaluations are formative as well as summative, they can greatly assist projects to improve their evaluation capabilities and practices. In addition to metaevaluation, FRA RD&T often can benefit by engaging independent contractors to assist in such areas as conceptualizing its evaluation approaches, preparing relevant evaluation tools, helping design project evaluations, and advising on data collection, data analysis, and reporting.

3.10 Collect Needed Information.

After designing an evaluation, develop a sound data collection plan. Prepare to collect sufficient information to answer the evaluation's questions. Build steps into the plan to assure that the obtained information will be reliable, appropriate, and credible. Assure that the collected information will have sufficient scope and cross-checks to reach defensible conclusions about the subject project's quality and worth to constituents. In rounding out the data collection plan make sure the information to be collected will be responsive to audience interests, technically sound, obtained through legal and ethical actions, respectful of persons whose work is being evaluated, and systematically cleaned, stored, and controlled.

Table 10 is a checklist of actions to take in identifying information needs.

Table 10. Checklist for Developing an Information Collection Plan

	Checkpoints
___	Identify stakeholders who reflect important perspectives related to the project
___	Interview the identified stakeholders to identify the questions they want answered
___	Ask key individual stakeholders to describe the types of information they would find useful in answering their questions about the subject project
___	Make a list of additional information needed to fully judge the project
___	Identify data collection procedures of use in addressing the full range of identified questions and associated information needs (see Table 3.3 below.)
___	Make a chart to show how the identified procedures would supply information in assessing the project's context, inputs, implementation, and impacts (see Table 3.3 below.)
___	Make a chart showing a schedule for applying the different data collection procedures (see Table 3.4 below.)
___	For each information collection procedure, identify sources of the needed information and develop an appropriate sampling plan (see Table 3.5 below.)
___	Determine responsibility for collecting, cleaning, and managing the information
___	Keep the information plan flexible in order to respond to stakeholders' new information needs as they emerge during the course of the

Table 11 is for use in charting the relationship between identified information needs and the stakeholder parties who helped identify those information needs. For illustrative purposes, the column headings are stakeholder parties that are typical audiences for project evaluation reports. Fill in the row heading spaces with the information items included in the information plan you have developed to this point. Adapt the chart in Table 11 to fit the stakeholder groups you identified. Then mark cells that indicate an information need that was identified by a particular stakeholder party.

Table 11. A Framework for Relating Information Needs to Different Segments of the Stakeholder Groups

Information Needs (fill in following cells based on exchange with stakeholders)	Illustrative Stakeholder Groups that helped Identify Information Needs						
	Project Director	Project Staff	Government Oversight Bodies	Railroad Management	Railroad Labor	DOT Safety Council	Public

Table 12 is a chart for relating each major type of information to be collected to the procedures to be used in obtaining the information. Adapt the chart in Table 12 to fit the elements of your information collection plan. Then mark cells that indicate an information collection procedure that will be used to collect each major type of information (as indicated by the column headings).

Table 12. A Framework for Planning an Evaluation's Information Collection

Information Collection Procedures	Illustrative Types of Information to be Collected.						
	Project Context and Beneficiary Needs	Project Plan and Competing Approaches	Project Activities and Costs	Project Reach to Targeted Recipients	Project Outcomes	Project Sustainability	Project Transportability
Document Collection							
Literature review							
Traveling observer							
Site visits							
Surveys							
Focus groups							
Hearing							
Public forum							
Observations							
Case studies							
Goal-free evaluation							
Self-assessments							

Table 13 is a worksheet for scheduling the application of different information collection procedures. Adapt the chart to fit the elements of your information collection plan, for example by adding information collection procedures or specifying time date ranges for the different time periods. Then mark cells that indicate the information collection procedure(s) to be applied during each time period denoted in the column headings.

Table 13. A Framework for Scheduling Application of Different Information Collection Procedures

Information collection Procedures	Time Periods in the Evaluation						
	Period 1 (Context Evaluation)	Period 2 (Input Evaluation)	Period 3 (Implementation Evaluation)	Period 4 (Implementation & Impact Evaluation	Period 5 (Final Impact Evaluation)	Period 6 (Sustainability and Transferability Evaluation	Period 7 (Final Report Preparation and Delivery)
Document collection							
Literature review							
Interviews							
Traveling observers							
Resident observers							
Site visits							
Surveys							
Focus groups							
Hearing							
Public forum							
Case studies							
Goal-free evaluation							
Self-assessments							

Identify appropriate sources of needed information when planning to apply the above information collection procedures. Pertinent sources may include existing records and other printed material, data tapes, relevant publications, and the full range of project stakeholders, including especially railroad administrators, railroad labor leaders, train operators, community leaders and public safety personnel, school personnel, research and development experts working in the area of railroad safety, railroad oversight bodies, DOT personnel involved with railroad safety, legislators, and so forth.

Start the information collection process by identifying and collecting relevant existing information for analysis. Engage stakeholders to verify the accuracy of the information. Cross-check different pieces of information that may be in conflict and clear up ambiguities. Ensure that the obtained extant information is valid for your intended use in the particular evaluation. Continue to collect and analyze existing documents throughout the evaluation process.

Use the checklist in Table 14 to make sure that your information collection plan does not exclude sources of information that are relevant to your evaluation.

Table 14. Checklist of Documents and Other Information of Potential Use In an Evaluation

Often External to a Project Site	Often Internal to a Project Site
___ Census reports	___ Community demographic information
___ Needs assessment reports	___ Statistics on targeted operations
___ Research reports and Journal articles	___ Company mission statement
___ Laws, statutes, and regulations	___ Strategic plan
___ Court records	___ Collective bargaining agreement
___ Police reports	___ Company policies handbook
___ Real estate records	___ Funding proposals
___ Accreditation standards	___ Project progress reports
___ Company standards	___ Project evaluation reports
___ Polls	___ Minutes of meetings
___ National data sets	___ Chamber of commerce records
___ State data sets	___ Staff résumés
___ Congressional record	___ Project budget
___ White house reports	___ Project financial records
___ Government department reports	___ Accounting reports
___ Professional society reports	___ Audit reports
___ Health department reports	___ Log of visitors to project
___ Accident reports	___ Correspondence
___ Internet sites	___ Local survey reports
___ Insurance records	___ Newspaper articles
___ Information clearinghouses	___ School district discipline records
___Other	___ Local survey reports
	___ Hospital records
	___ Local data sets
	___ Publicity releases
	___Other

3.11 Deliver Interim Reports.

A main goal of RD&T's project evaluation system is to provide project staffs and other project stakeholders with evaluative inputs that are timely and relevant for project improvement. Evaluators should plan, conduct, and report context, input, implementation, and impact evaluations to give project staffs and other stakeholders the evaluative information they need to

guide and strengthen their efforts and to report it to them when they need it. As appropriate, apply the guidelines in Table 15 in planning the delivery of interim reports to project staff members and others.

Table 15. Guidelines for Interim Reports

___Establish a stakeholder evaluation review panel whose members are representative of the full range of intended users of the evaluation's findings.
___Secure agreement from the project director or another key project leader to chair the stakeholder evaluation review panel.
___Engage the stakeholder evaluation review panel to identify their main intended uses of evaluation findings.
___Subsequently, engage the stakeholder evaluation review panel to identify the evaluative information they would find most useful and to project the best times for receiving different parts of the information.
___Develop a plan and schedule for delivering context, input, implementation, and impact evaluation reports.
___Work with the chair of the stakeholder evaluation review panel to schedule the panel to review interim reports and meet to discuss them.
___Mail draft reports to stakeholder evaluation review panel members approximately ten working days in advance of panel review sessions.
___At stakeholder evaluation review panel meetings have the chair engage the panel members to critique and discuss the draft reports, especially regarding any factual errors or areas of ambiguity.
___Have the chair assign a panelist to keep a record of the panelists' inputs.
___Following each stakeholder evaluation review panel meeting, correct the report and send or deliver it to the chair of stakeholder evaluation review panel and to other intended users of the findings.
___Following delivery of finalized interim reports, be receptive and responsive to questions about interim evaluation findings from intended users.

3.12 Produce the Final Evaluation Report.

Table 16 is a model outline for evaluators of RD&T's programs and projects to consider in writing final evaluation reports.

Table 16. Model Outline for a Final Project Evaluation Report

Prologue (Origin of the evaluation)
• Who requested the evaluation, why, and for whom?
• Who are the evaluators, what are their perspectives and credentials, how did they approach the assignment?
• What is the subject project's title?
• What is the project's mission?
• What are this evaluation's bottom-line questions?
Introduction (National significance of the subject project and overview of the report)

• What national needs and problems provide the focus for the project?

• How has this evaluation documented the project's approach and impacts?

• What are the key audiences for the evaluation?

• How is the report organized to address the differential needs of these audiences?

Background of the Project (Descriptive and intended for use by all audiences)

• What group initiated project, when, and why?

• What are the project's goals?

• Who are the intended beneficiaries of project services?

• What is the project's administrative structure?

• What is the social and political context in which the project operates?

• Photographic reprise to depict key aspects of the project's background

Project Implementation (A strictly descriptive account, intended especially for those who might be interested in replicating the project's approach)

• Overview of the project

• Management and coordination

• Development of project protocols and procedures

• Collaborative arrangements

• Staff assignments

• Metrics and data collection

• Funding

• Internal and external communication

• Review and revision

• Photographic reprise to depict key aspects of the project's operations

Results (Evaluative and intended especially for oversight bodies and a wide range of interested audiences)

• Approach to assessing the project's quality, importance, and cost-effectiveness

• Context Evaluation: Are the project's goals addressed to the railroad industry's important needs, problems, and opportunities?

• Input Evaluation: Is the project's approach maximally responsive to assessed and targeted needs and problems in the railroad industry?

• Implementation Evaluation: Has the project's administrators and staff effectively implemented the project's plan of action?

• Impact Evaluation: What is the extent and significance of the project's positive outcomes, negative outcomes, and unintended side effects?

• Sustainability Evaluation: To what extent are the project's successful practices and positive outcomes being sustained?

• Transferability Evaluation: To what extent has the project's approach been successfully adapted and

applied elsewhere?

• Photographic reprise to highlight and make vivid the project's accomplishments

Conclusions (Intended for all audiences)

• The project's notable strengths

• The project's notable weaknesses

• Key lessons learned

• Bottom-line assessment of the project's merit and worth

• Photographic reprise depicting the evaluation's main message

Appendix (or separate technical report)

• References

• Key data sources and tools

• About the evaluators

• Attestation of the evaluation's adherence to standards of utility, feasibility, propriety, accuracy, and accountability (employing the form in Appendix A.7)

• Members of the Evaluation Review Panel

3.13 Support Use of Evaluation Findings

3.13.1 Conduct Pre-release Reviews of Reports

It is important to make evaluation reports accurate and understandable before releasing them in final form. One way to achieve these ends is to engage the key client group and, as appropriate, other stakeholders in a Pre-Release Review of the draft report and to finalize the report based on the review. The process for conducting such a review includes the following steps:

- Evaluator prepares the draft report to meet requirements for utility, feasibility, propriety, accuracy, and accountability.
- Evaluator and client agree on the appropriateness of conducting a client and stakeholder process to review the draft report.
- Evaluator and client agree that the report should be reviewed, especially to identify any factual errors and issues of ambiguity, but not to change findings and conclusions (evaluator may do that later based on review results).
- Evaluator and client agree that review results will be used to improve and finalize the report before its release.
- Client selects a group of stakeholders to critique the draft report and subsequently to meet in a feedback workshop to systematically go over the report.
- Evaluator and client agree that client or client designee will chair the feedback workshop (usually it is not a good idea to assign co-chairs).

- Client schedules the feedback workshop such that reviewers will have at least 10 working days to read and critique the report.
- Client mails the draft report to review panel members and stresses that they should read the report in advance of the meeting and make page by page marginal notes to flag any inaccuracies or areas of ambiguity.
- Evaluator drafts briefing materials that the client and other stakeholders could use, in the future, for informing superiors and other interested parties of the report's main contents.
- In preparing for the review session, evaluator or client provides on the conference table in front of each participant a tent-shaped placard with her or his name printed on both sides.
- Client or evaluator assigns a support staff member to make a written record of the session's main points.
- Chair conducts the review session according to an **agenda**, such as follows:
    - Chair invites each participant to Introduce herself or himself
    - Chair summarizes the workshop agenda and state's the session's main goal to identify the draft report's strengths and weaknesses.
    - Chair emphasizes the importance of identifying any factual inaccuracies and areas of ambiguity that were seen in the report
    - Chair identifies a secondary goal as reacting to briefing materials that the client and other stakeholders might use in the future to inform interested parties of the report's findings
    - Chair explains that participants' inputs will be recorded and considered in finalizing the report
    - Chair explains that he/she and the evaluator will not strive to resolve disagreements between inputs, during the meeting, but will accept participants' clarifications or attempts at resolution
    - Chair and evaluator address any questions participants may still have
    - Evaluator summarizes the report's main contents and any pertinent issues to be addressed
    - Chair engages participants to give page by page feedback on what they found in their reviews
    - Chair leads discussion aimed at making the report maximally useful to intended users
    - As appropriate, chair and participants discuss possible decisions and actions that seem warranted based on the draft report
    - Chair engages participants to discuss and offer recommendations regarding draft materials the evaluator prepared for use by the client and other stakeholder in disseminating findings

    - Chair invites each panelist to state her or his bottom-line assessment or advice for strengthening the report
    - Evaluator states appreciation and responds to what he/she has heard
    - Chair summarizes the meeting's results, identifies key next steps, and adjourns the meeting
- Evaluator sends messages of appreciation to all members of the feedback session.
- Evaluator uses the review session's feedback to finalize the report
- Evaluator also finalizes the briefing materials for client/stakeholder use in communicating the evaluation findings.
- Evaluator submits the final report and briefing materials to the client.
- Client distributes the report to right-to-know audiences (with evaluator's assistance as appropriate).
- Client uses briefing materials to inform superiors and other stakeholders about the evaluation's findings.
- Client and stakeholders use findings for project improvement, planning, etc.

Table 17 is a sample template for planning and guiding the conduct of pre-release review sessions. Typically, it is good practice to engage the leader of the main client group to chair the pre-release review session, with the evaluator serving in the main support role. The main role of the client group of reviewers is to give their assessments of the evaluation item's (evaluation plan, instrument, or draft report) clarity and accuracy. This group should be cautioned not to try to redesign the evaluation. Their main role is to help assure that the evaluators will deliver feedback that is useful and trustworthy.

Table 17. A Sample Template for Pre-Release Review Sessions

Pre-Release Review Session

XYZ Evaluation Report

Meeting chair_____

Other project representatives_____

Lead evaluator_____

Other evaluation team members_____

Note taker_____

Reviewers: (representative group of report's intended users plus other stakeholders--all named on attached sheet)

Agenda

Chair's opening statement Welcome, focus of session, role and importance of pre-release review of subject report, composition and role of reviewers, statement of appreciation)

Participants' Self-Introductions (name, position, relationship to the subject project, relationship to the evaluation)

Chair's summary of the session's purposes

1. Overall, to help assure that the XYZ evaluation will be **accurate and maximally useful** to intended users
2. Obtain each participant's assessment of the XYZ evaluation report for **factual errors and ambiguities**
3. Discuss ways to **facilitate the report's dissemination and use**

Evaluator's summary of how the meeting's results will be used

Finalize the report

Further develop plans for disseminating the report

Strengthen plans to support intended users' uses of the findings

Critique of the report

Evaluator's summary of the report's preparation, intended users, and intended uses

Page by page commentary on the report by all reviewers

Plans to disseminate and foster use of findings

Evaluator's summary of plan for disseminating the report

Evaluator's summary of provisions to stimulate and support uses of the findings

As applicable, evaluator's distribution of draft briefing sheets for use by key users of the report

Review panelists' reactions and recommendations regarding plans to disseminate and secure use of the evaluation's findings

Closing

Chair's invitation for each participant to make a capstone statement of what they see as the session's most important point

Voluntary participant-by-participant closing statements

Evaluator's summary of next steps

Chair's summary of the session's accomplishments, statement of appreciation, and adjournment

3.13.2 Provide a Useful Executive Report plus Briefing Sheets for Use by the Evaluation Client and other Users

In reporting findings, evaluators should keep in mind that the evaluation audience includes decision makers who are in a position not only to use findings and but also to help disseminate the findings to other potential users. It is important to keep in mind that such decision makers often are too busy to take the time to explain a long evaluation report to others. However, they can convey main findings if they are in possession of succinct materials that convey the evaluation's main findings.

Accordingly, evaluators are advised to take special care in preparing concise, clear executive summaries that the decision makers can readily digest and use in conveying evaluation findings to others.

In addition, evaluators are advised to supply decision makers with briefing materials such as PowerPoint slides that the decision makers can use in making their own presentation of evaluation findings.

3.14 Attest to the Evaluation's Compliance with Evaluation Standards

The bottom line requirement for program and project evaluations conducted by or for FRA's Office of RD&T is that they meet professionally defined standards of sound evaluation. RD&T's evaluators are expected to both apply and provide an attestation of the extent to which their evaluation fulfilled the requirements of the five main categories of standards in the ANSI approved Joint Committee (2011) Program Evaluation Standards (Utility, Feasibility, Propriety, Accuracy, and Evaluation Accountability). To fulfill the evaluation standards attestation purpose, RD&T's evaluators should complete the Evaluation Standards Attestation Form that appears in Section 4.1 of this manual and append the completed form to their final evaluation report.

In general the form is keyed to the five main categories of standards in the ANSI-approved Joint Committee (2011) Program Evaluation Standards. As explained in this manual's Section 2.2 those categories are Utility, Feasibility, Propriety, Accuracy, and Evaluation Accountability. The form contains summaries of the 30 specific standards found in the 2011 Program Evaluation Standards. Evaluators of R&D's programs and projects are expected to plan and conduct their evaluations in accordance with the 30 standards, although some of the standards may not be applicable to particular evaluations. At an evaluation's conclusion, the evaluator appends a completed copy of the Evaluation Standards Attestation Form to the final report. In completing the form the evaluator should judge and attest to whether each standard was met, partially met, or not met, or whether the standard was judged to be not applicable. In addition to marking the form accordingly, the evaluator should provide one or two sentences of justification for the marked judgment.

By gauging the evaluation to meet the 30 standards from the start, the evaluator will enhance prospects for the evaluation's success. By completing the Evaluation Standards Attestation form at the evaluation's end and appending the form to the final evaluation report the evaluator will be demonstrating his or her professionalism and accountability for completing a creditable, useful evaluation. By reviewing the completed Evaluation Standards Attestation Form the evaluation's client and other intended users of the evaluation will be aided to take into account the

evaluation's strengths and weaknesses and to exercise proper circumspection in assessing and applying the evaluation's findings.

3.15 Secure External Metaevaluations, as Appropriate

Evaluation clients should budget and arrange for external metaevaluations, especially when it is essential to convince external project stakeholders of a project evaluation's validity. Specifications for such external metaevaluations should be the evaluation standards contained in this manual. As appropriate the external metaevaluation may be formative to help guide the project evaluation and/or summative and report final judgments of the project evaluation's utility, feasibility, propriety, accuracy, and accountability.

4. Evaluation Tools

4.1 Evaluation Standards Attestation Form

Evaluators of RD&T's programs and projects should complete a copy of this form and append it to their final report, as an attestation of the extent to which the evaluation adhered to applicable, specific standards of Utility, Feasibility, Propriety, Accuracy, and Evaluation Accountability.

The following summaries of ANSI-approved standards—drawn from Joint Committee on Standards for Educational Evaluation (2011). The Program Evaluation Standards. Los Angeles, CA: Sage are reprinted with the Committee's authorization and have been adopted for use by FRA's Office of RD&T.

EVALUATION STANDARDS ATTESTATION FORM

Standard	Standard Statements	Basis for Judgment	Judgment			
			Met	Partially Met	Not Met	N/A
U1 Evaluator Credibility	*Evaluations should be conducted by qualified people who establish and maintain credibility in the evaluation context.*					
U2 Attention to Stakeholders	*Evaluations should devote attention to the full range of individuals and groups invested in the program or affected by the evaluation.*					
U3 Negotiated Purposes	*Evaluation purposes should be identified and revisited based on the needs of stakeholders.*					
U4 Explicit Values	*Evaluations should clarify and specify the individual and cultural values underpinning the evaluation purposes, processes, and judgments.*					
U5 Relevant Information	*Evaluation information should serve the identified and emergent needs of intended users.*					
U6 Meaningful Processes and Products	*Evaluation activities, descriptions, findings, and judgments should encourage use.*					
U7 Timely and Appropriate Communicating and Reporting	*Evaluations should attend in a timely and ongoing way to the reporting and dissemination needs of stakeholders.*					
U8 Concern for Consequences and Influence	*Evaluations should promote responsible and adaptive use while guarding against unintended negative consequences and misuse.*					
F1 Project Management	*Evaluations should use effective project management strategies.*					
F2 Practical Procedures	*Evaluation procedures should be practical and responsive to the way the program operates.*					
F3 Contextual Viability	*Evaluations should recognize, monitor, and balance the cultural and political interests and*					

	needs of individuals and groups.					
F4 Resource Use	*Evaluations should use resources effectively and efficiently.*					
P1 Responsive and Inclusive Orientation	*Evaluations should be responsive to stakeholders and their communities.*					
P2 Human Rights and Respect	*Evaluations should be designed and conducted to protect human and legal rights and maintain the dignity of participants and other stakeholders.*					
P4 Clarity and Fairness	*Evaluations should be understandable and fair in addressing stakeholder needs and purposes.*					
P5 Transparency and Disclosure	*Evaluations should provide complete descriptions of findings, limitations, and conclusions to all stakeholders, unless doing so would violate legal and propriety obligations.*					
P6 Conflicts of interests	*Evaluations should openly and honestly identify and address real or perceived conflicts of interests that may compromise the evaluation.*					
P7 Fiscal Responsibility	*Evaluations should account for all expended resources and comply with sound fiscal procedures and processes.*					
A1 Justified Conclusions and Decisions	*Evaluation conclusions and decisions should be explicitly justified in the cultures and contexts where they have consequence.*					
A2 Valid Information	*Evaluation procedures should yield sufficiently dependable and consistent information for the intended uses.*					
A3 Reliable Information	*Evaluation procedures should yield sufficiently dependable and consistent information for the intended use.*					
A4 Explicit Program and Context Descriptions	*Evaluations should document programs and their contexts with appropriate detail and scope for the evaluation purposes.*					
A5 Information Management	*Evaluations should employ systematic information collection, review, verification, and storage methods.*					
A6 Sound Designs and Analyses	*Evaluations should employ technically adequate designs and analyses that are appropriate for the evaluation purposes*					
A7 Explicit Evaluation Reasoning	*Evaluation reasoning leading from information and analyses to findings, interpretations, conclusions, and judgments should be clearly and completely documented.*					
A8 Communication and Reporting	*Evaluation communications should have adequate scope and guard against misconceptions, biases, distortions, and errors.*					
E1 Evaluation	*Evaluations should fully document their negotiated purposes and implemented designs,*					

Documentation	*procedures, data, and outcomes.*					
E2 Internal Metaevaluation	*Evaluators should use these and other applicable standards to examine the accountability of the evaluation design, procedures employed, information collected, and outcomes.*					
E3 External Metaevaluation	*Program evaluation sponsors, clients, evaluators, and other stakeholders should encourage the conduct of external metaevaluations using these and other applicable standards.*					

5. References

1 Federal Railroad Administration (2013), Research and Development Strategic Plan, DOT/FRA/ORD-13/27, May 9, 2013 – available at http://www.fra.dot.gov/eLib/details/L04568

2 Tunna, J., Coplen, M. and Stufflebeam (2013), D, Evaluation Implementation Plan Office of Research and Development, DOT/FRA/ORD-13/47, November 21, 2013 – available at http://www.fra.dot.gov/eLib/details/L04865

3 Government Performance and Results Act, Pub. L. No. 103-62, 107 Stat. 285 (1993).Government Performance and Results Modernization Act, Pub. L. No.111-352, 124 Stat. 3866 (2011).

4 Yarbrough, D. B., Shulha, L. M., Hopson, R. K., & Caruthers, F. A. (2011). The program evaluation standards: A guide for evaluators and evaluation users (3rd ed.). Thousand Oaks, CA: Sage.

5 Stufflebeam, D. L. (2004), Evaluation Design Checklist – available at http://www.wmich.edu/evalctr/archive_checklists/evaldesign.pdf

Abbreviations and Acronyms

DOT	Department of Transportation
FRA	Federal Railroad Administration
GAO	Government Accountability Office
GPRA	Government Performance Reporting Act
OMB	Office of Management and Budget
RD&T	Research, Development and Technology