

Audit Stewardship and Oversight of Large and Innovatively Funded Projects in Europe



International Technology Scanning Program ■ March 2007

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16. Abstract As transportation agencies undertake nontraditional, innovatively financed infrastructure projects, a concern among State and Federal managers is the effectiveness of the audit stewardship and oversight for these projects. The Federal Highway Administration, American Association of State Highway and Transportation Officials, and National Cooperative Highway Research Program sponsored a scanning study to document best practices used in England, France, Ireland, Portugal, and Spain in the stewardship and oversight of large, innovatively funded projects. The scan team observed that the terms of public-private partnership contracts have evolved as the European countries have gained experience in their use, and business models and evaluations have become an integral part of project selection and monitoring. To be effective, public sector project auditors in Europe need a range of skills, such as value engineering, business modeling, capital budgeting, and performance auditing. The team's recommendations for U.S. implementation include developing a Web site on audit stewardship and oversight best practices. The team also recommends that FHWA and AASHTO provide consultation and training for auditors and other financial managers involved in major or innovative procurement contracts, including development of a project planning model and an audit procedures manual.					
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International Technology Scanning Program

THE INTERNATIONAL TECHNOLOGY SCANNING Program, sponsored by the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), and the National Cooperative Highway Research Program (NCHRP), accesses and evaluates innovative foreign technologies and practices that could significantly benefit U.S. highway transportation systems. This approach allows for advanced technology to be adapted and put into practice much more efficiently without spending scarce research funds to re-create advances already developed by other countries.

FHWA and AASHTO, with recommendations from NCHRP, jointly determine priority topics for teams of U.S. experts to study. Teams in the specific areas being investigated are formed and sent to countries where significant advances and innovations have been made in technology, management practices, organizational structure, program delivery, and financing. Scan teams usually include representatives from FHWA, State departments of transportation, local governments, transportation trade and research groups, the private sector, and academia.

After a scan is completed, team members evaluate findings and develop comprehensive reports, including recommendations for further research and pilot projects to verify the value of adapting innovations for U.S. use. Scan reports,

as well as the results of pilot programs and research, are circulated throughout the country to State and local transportation officials and the private sector. Since 1990, about 70 international scans have been organized on topics such as pavements, bridge construction and maintenance, contracting, intermodal transport, organizational management, winter road maintenance, safety, intelligent transportation systems, planning, and policy.

The International Technology Scanning Program has resulted in significant improvements and savings in road program technologies and practices throughout the United States. In some cases, scan studies have facilitated joint research and technology-sharing projects with international counterparts, further conserving resources and advancing the state of the art. Scan studies have also exposed transportation professionals to remarkable advancements and inspired implementation of hundreds of innovations. The result: large savings of research dollars and time, as well as significant improvements in the Nation's transportation system.

Scan reports can be obtained through FHWA free of charge by e-mailing international@fhwa.dot.gov. Scan reports are also available electronically and can be accessed on the FHWA Office of International Programs Web Site at www.international.fhwa.dot.gov.



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Abbreviations and Acronyms

AASHTO American Association of State Highway and Transportation Officials

ACEC American Council of Engineering Companies

AGA Association of Government Accountants

AICPA American Institute of Certified Public Accountants

AAA American Accounting Association

ARTBA American Road and Transportation Builders Association

BV best value

CAT Capability Assessment Toolkit

CEVP Cost Estimate Validation Process

CM construction management

CPR corporate performance rating

CPSS Consultant Performance and Selection System

DA department agent

DB design-build

DBB design-bid-build

DBFO design-build-finance-operate

DBM design-build-maintain

DBOM design-build-operate-maintain

DOT department of transportation

ECI early contractor involvement

EIB European Investment Bank

EOI expression of interest

ER employer's representative

EU European Union

EUROSAI European Organization of Supreme Audit Institutions

FAF Financial Accounting Foundation

FASAB Federal Accounting Standards Advisory Board

FASB Financial Accounting Standards Board

FHWA Federal Highway Administration

GAAP generally accepted accounting principles

GAAS generally accepted auditing standards

GAGAS generally accepted government auditing standards

GAO Government Accountability Office

GASB Governmental Accounting Standards Board

HA Highways Agency (United Kingdom)

HARM Highways Agency Risk Management

IAS International Accounting Standards

IASB International Accounting Standards Board

IASC International Accounting Standards Committee

IFAC International Federation of Accountants

IIA Institute of Internal Auditors

IIAS International Internal Auditing Standards

INTOSAI International Organization of Supreme Audit Institutions

IRR internal rate of return

ISA International Standards on Auditing

ISO International Organization for Standardization

KPI key performance indicator

MAC managing agent contractor

NCHRP National Cooperative Highway Research Program

NHI National Highway Institute

NPV net present value

PCAOB Public Companies Accounting Oversight Board

PFI private finance initiative

PM project manager

PPC public-private comparator

PPP public-private partnership

RFP request for proposals

SAIs supreme audit institutions

SEA service efforts and accomplishment reporting

SIB state infrastructure banks

STIP scan technology implementation plan

TRB Transportation Research Board

U.S. DOT U.S. Department of Transportation

VFM value for money



Executive Summary

THE PROCESS AND METHODOLOGY FOR THE delivery of large highway projects remained basically unchanged for the second half of the 20th century. However, increasing demands for quality transportation systems, rising costs of construction, and a relatively flat revenue stream to finance these projects led the Federal Highway Administration (FHWA) and State departments of transportation (DOTs) to look for new and innovative financing methodologies. As a result, the 21st century seemed to initiate an era of new and innovative ways of financing U.S. highway transportation needs. New methods of financing were proposed and implemented by the U.S. Congress along with private sector initiatives such as private ownership and financing of public highway infrastructure projects.

A concern among State and Federal managers is a loss of effective audit oversight and stewardship on large and nontraditional road transportation contracts. Under the auspices of FHWA's International Technology Scanning Program, the Transportation Research Board's (TRB) National Cooperative Highway Research Program (Panel 20-36), and the American Association of State Highway Transportation Officials (AASHTO), a scan team of 12 audit and financial management specialists from the Federal and State governments, the private sector, and academia visited Europe to search for best practices on audit stewardship and oversight.

During May 2006, the international technology scan team visited five European countries that have extensive experience in highway construction of large and innovatively funded projects, including public-private partnerships. Government officials from audit agencies and road transport agencies in England, France, Ireland, Portugal, and Spain welcomed the U.S. team and presented information on their (1) audit practices, both independent and internal, (2) stewardship of the government's assets, (3) oversight of large road projects, many of which were accomplished through public-private partnerships (PPP), and (4) the use of tolls and concession contracts to meet service needs of multiple constituencies.

The team returned with several recommendations that have the potential to improve audit stewardship and oversight of large road projects in the United States. This summary provides a brief description of the findings and recommendations of the team. Details on the observations, findings,

and recommendations are in Chapters 1, 2, and 3 of this report.

Overview

The following definitions were used for this international technology scan:

Audit—Includes financial statements, attestation, and performance engagements conducted in accordance with generally accepted auditing standards (GAAS) and/or generally accepted government auditing standards (GAGAS).

Audit stewardship—Includes audit practices before contract initiation, including how financial evaluations are made to obtain the best outcome for the funds invested, how the government can receive the best value for the public, whether the proposing company has the resources to perform the project, evaluation of proposal costs, the sale and valuation of State assets, and audit reporting methods used to advise agencies on risk mitigation in the event of project difficulties.

Audit oversight—Includes audit practices during contract and post-contract periods involving the evaluation of work performed, use of project costing standards, distribution of profits from concessions, compliance with contract provisions, and an evaluation of overall price and quality of services received.

As part of its stewardship role, FHWA uses the International Technology Scanning Program to identify best practices of foreign governments that are transferable to the United States. The International Technology Scanning Program focuses on meeting the growing demands of FHWA partners at the Federal, State, and local levels for access to information on state-of-the-art technology and best practices used worldwide. This is the first scan that addresses audit stewardship and oversight. Team members gained valuable insights into audit practices during their visits with European independent and internal auditors.

General Observations About Audit Stewardship and Oversight

Responsibility for the independent audit function in the host countries rests primarily with each central government. This is similar to the U.S. model in which each State uses its own audit agency to conduct the independent (financial



statement) audit function rather than a national audit agency. The responsibility for the internal audit function is also similar to the United States in that it generally resides in each agency and/or ministry. Promulgated auditing standards guide the audit practices in each host country. These governmental auditing standards are in place to ensure that governments maintain accountability to their citizenry and other constituencies. The European Union and the United States have similar audit standards.

Findings and Recommendations

The team members examined audit programs and practices employed by the host European countries that provided oversight of large and innovatively funded projects. It became obvious during the scanning study that the European community has extensive experience with nontraditional vehicles for delivering road infrastructure assets. It was also clear that the process of maintaining road infrastructure assets necessary to address European Union goals and objectives has impacted these countries and road infrastructure delivery contracts continue to be an evolving process. This is clearly demonstrated by the differences between the terms of initial PPP contracts and those now being issued. The increasing use and robustness of business models and evaluations and the sophisticated oversight processes conducted throughout the project life cycle were not as evident in initial PPP tenders. Today, they are visible and integral parts of project selection and monitoring. A summary of the team findings and recommendations is presented under the categories of audit stewardship, audit oversight, and general audit issues.

Audit Stewardship Findings and Recommendations

- ▶ Auditors need a variety of skill sets. These skills involve value engineering, business modeling, capital budgeting (present value and internal rate of return applications), traditional financial problem-solving methodology, and performance auditing. New personnel with specialized skills may need to be hired. Additional training of current staff may be necessary, along with contracting for those services with the private sector, as needed.
- ▶ State DOT teams need to be established for each proposed PPP highway project. This PPP team would have the necessary skill sets to develop a business model to be used to determine if the project can deliver value for money (VFM) to the State's citizens. The team would then be involved in all matters pertaining to the proposal, selection, and construction of this capital PPP project.
- ▶ State DOTs should implement the use of a process auditor position for each PPP. The responsibility of the process auditor is to assure that all necessary legal, accounting, business plan, and policy issues are

addressed from the development of a PPP proposal through the final bid acceptance.

- ▶ Audits should be conducted throughout the project life cycle, not just of the end construction costs. Auditors should concentrate on audit processes that are value for money oriented. The project life cycle should be monitored using compliance, financial, and performance auditing techniques.
- ▶ Public project comparators (comparables) should be developed for each capital construction project before a request for proposal (RFP) is issued.
- ▶ Early and active involvement by internal audit staff and financial experts generally improves the quality of highway project RFP design and tender evaluation. Project performance objectives need to be established at the initiation of the project. Once established, audit techniques and performance benchmarks are developed. This allows for stewardship and oversight throughout the life of the project.
- ▶ Use robust business plans/models to evaluate the capital investment of transportation projects. The models should include tools such as value for money, present value, internal rate of return, and risk assessment.
- ▶ Concession contracts should call for sharing revenues with the State if toll activity exceeds a specified, predetermined base. Concession contract terms should specify the annual toll inflationary adjustment rate as well as expected traffic counts. When these expectations are exceeded, the State should share in the revenues.
- ▶ Engineering specifications on design-build-operate-maintain (DBOM) contracts should be specific to the outcomes desired. The contractor should be provided with the opportunity to determine the detailed specifications to construct, maintain, or operate the project based on the outcome specifics.
- ▶ The value for money (VFM) process should be used as a viable and effective methodology for selecting projects and/or the contractor.
- ▶ Contracts for DBOM with concessions (PPPs) exceeding 30 to 35 years should be evaluated carefully.
- ▶ Refinancing profits should be shared between the government and the PPP. This sharing arrangement is usually detailed in the original tender bid specifications.

Audit Oversight Findings and Recommendations

- ▶ Critical areas for audit oversight include auditor involvement in the procurement contract, methodology and basis of establishing risk allocation between the parties in the procurement contract, and review or preparation of public comparators for the contract.
- ▶ Performance and compliance audit plans should be developed from the PPP and State DOT project business

plan. Poor or inadequate business planning prevents the development of adequate performance evaluation criteria.

- ▶ Methodology for audits of concession counts, revenues, and expenses should be developed and included with clear contract language in the tender or RFP. With long-term contracts, future technology expectations need to be included.
- ▶ Auditing a PPP requires objectives for each stage of procurement, including determining what audit questions need to be answered at each phase, building in renegotiation points, and keeping the contract financing on track by allowing for adjustments. A final performance audit should address the project efficacy.
- ▶ Toll concessions and traffic counts should be available in real time to both parties with methods of surveillance and audit available. Electronic systems should allow contractors and States real-time information that is verifiable.

General Audit Issues Findings and Recommendations

- ▶ The United States, through FHWA and AASHTO, should work toward development of a seamless national tolling system. The system should allow State DOTs their autonomy, but it should be 100 percent compatible and allow for interoperation capability. This would enable citizens with a single registration to access any toll scheme throughout the Nation.
- ▶ Business plans should allocate risk between the PPP partners according to their ability to control and manage the risk. Risk sharing can reduce PPP financing costs and private sector profit expectations, thereby reducing user toll costs.

Implementation Strategies, Dissemination, and Recommendations

The scan team identified several strategies for disseminating and fostering the results of this scan. The following summarizes the implementation strategies:

- ▶ The scan results should be disseminated as widely as possible throughout the transportation community. Presentations should be scheduled for the annual meetings of TRB, AASHTO, the American Road and Transportation Builders Association (ARTBA), and the American Council of Engineering Companies (ACEC), as well as applicable AASHTO committee and subcommittee meetings in 2006 and 2007.
- ▶ Scan team members should participate in national and international PPP forums to obtain additional information and training and to document best practices on PPPs. The information learned from forum participation should be disseminated via AASHTO, TRB, ARTBA, and ACEC.

- ▶ Scan team members are encouraged to write articles for publication in professional transportation trade journals and professional accounting and auditing publications.
- ▶ Scan team members are encouraged to volunteer for speaking engagements at professional meetings and conferences to share the recommendations of this report.
- ▶ AASHTO and FHWA should develop a best practices Web site and incorporate the scan results. Availability of the Web site should be promoted throughout the governmental auditing, finance, and transportation communities.
- ▶ The specific statutory and regulatory requirements found in each of the countries scanned should be made available to the transportation community on the Web site.
- ▶ AASHTO and FHWA should partner in providing consultation and training of auditors and other financial managers involved in major and/or innovative transportation procurement contracts. This consultation and training should include development of the following:
 - A robust financial project planning and business model that would accommodate analysis of various financing schemes.
 - A model to establish public comparables for all projects being considered.
 - A model contract for concessions and PPPs.
 - An audit procedures manual for concessions and PPPs.
 - A database of best practice audit processes and procedures for traditional and nontraditional capital improvement highway transportation projects. The database could include concession contracts, private sector rate of return on concession contracts, national tolling charge (revenue) per mile, profit sharing arrangements on debt refinancing, and audit techniques for PPPs.
 - A series of training courses on topics unique to audit and finance transportation personnel dealing with traditional and nontraditional projects.
 - A national tolling model for collection of toll revenues that can operate seamlessly throughout the United States.
 - A monograph on the fundamentals of PPPs.
 - A dictionary of PPP and other innovative financing terminology.



Introduction

OUR NATION'S HIGHWAY INFRASTRUCTURE IS being challenged to meet growing consumer needs with the historical funding mechanism. As reported in the *Bond Buyer*, "With demand for transportation funding exceeding revenues from gas tax collections, two of the southeast's largest (Georgia/Florida) bond issuers are turning to public-private partnerships (PPP) and state-of-the-art toll systems to finance and improve roads."⁽¹⁾ Not only have Georgia and Florida turned to new and innovative financing schemes, but States across the Nation are entering into PPPs, some with concessions, to alleviate highway funding problems. States such as Alabama, California, Colorado, Illinois, Indiana, Nevada, Oregon, Texas, Virginia, and others are finding creative means through PPPs to fund the necessary highway infrastructure.

The current trend in road transportation projects is toward larger dollar amount contracts, innovative funding arrangements, and varying levels of private partner involvement. The U.S. Chamber of Commerce's National Chamber Foundation (NCF) agrees in its 2005 study on *Future Highway and Public Transportation Finance*. Phase one of the study reported that the Federal funding share falls short of what is needed to maintain and improve the Nation's transportation infrastructure. The second phase of the study lays out long-term options to fully fund the transportation system by bringing forth new ideas and transitioning to a new financing mechanism. Because of these financial arrangements and PPPs, FHWA, AASHTO, and NCHRP decided to conduct an international scan on audit stewardship and oversight of these new and nontraditional programs.

Many State DOTs are undertaking large, innovatively financed projects to meet the increasing demands in the United States for quality transportation services and highway infrastructure. These projects can include traditional design and construction, design-build, public-private partnership (PPP), and concession elements.

Regardless of the type of project contract, the trend indicates that transportation contracts will be larger, both in size and dollar amounts, with greater public-private partnership participation. This is because of increases in the cost of providing these services without matching revenue streams. Simply stated, highway revenues are falling behind highway needs. A concern among Federal

and State managers is the effective audit stewardship and oversight of these projects.

PUBLIC-PRIVATE PARTNERSHIP

A **public-private partnership** is a contractual agreement between public and private sector partners that allows more private sector participation and/or ownership than traditional methods of procurement. PPP agreements define an expansive set of relationships from relatively simple contracts to very complicated and technical contracts.

CONCESSION

A **concession** is a contract granted by the government to a private sector entity to conduct business in a particular market or geographic area.

Several large transportation projects have been awarded to multinational firms with the PPP experience and resources to acquire large government projects. In addition, more States are using innovative financing techniques (primarily credit programs) to advance large projects. The use of new financing strategies further supports the trend of larger projects. Because the European nations have been employing innovative financing methods to meet increasing infrastructure needs, they have considerable experience in auditing large, innovative transportation projects that include design-build, PPP, and concession elements. To examine and document the programs and practices employed by the European nations in the stewardship and oversight of large and innovatively funded projects, a diverse team of financial management specialists representing Federal and State transportation agencies, academia, and the private sector traveled to Lisbon, Portugal; Madrid, Spain; Paris, France; London, England; and Dublin, Ireland. The purpose was to conduct a scanning study of these European countries to find best audit practices that could be transferable to the United States.

The Federal government recognized the gap between revenues and necessary expenditures for highway infrastructure with its Safe, Accountable, Flexible, Efficient

Transportation Equity Act: A Legacy for Users of 2005 (SAFETEA-LU), which will facilitate public-private partnerships.

In SAFETEA-LU, the Administration recommended the following:

- ▶ **Tolling**—Establish a variable toll pricing program that would permit tolling on any highway, bridge, or tunnel, including the Interstate System, to manage congestion or reduce emissions; ease the eligibility requirements for the Interstate Rehabilitation and Reconstruction Program; and allow States to permit single-occupancy vehicles on high-occupancy vehicle lanes so long as time-of-day variable charges are assessed (so-called HOT lanes).
- ▶ **Private activity bonds**—Allow State and local governments to use up to an aggregate total of \$15 billion in private activity, tax-exempt bonds to pay for projects eligible under titles 23 and 49 of the U.S. Code that serve the general public.
- ▶ **Environmental streamlining**—Streamline the environmental process without substantively changing environmental protection.
- ▶ **Transportation Infrastructure Finance and Innovation Act (TIFIA)**—Lower the project cost threshold for TIFIA projects to \$50 million.
- ▶ **Design-build**—Eliminate the \$50 million threshold for design-build projects.
- ▶ **Commercialization of rest areas**—Establish a pilot program to allow States to permit commercial operations at existing or new rest areas on Interstate System highways.
- ▶ **Debt service reserve**—Allow public transportation agencies to obligate capital grant funds for a debt service reserve to lower the cost of locally issued bonds.

The State and Federal financial management community is responsible for the audit stewardship and audit oversight of the government's use of economic resources. The increasing use of both nontraditional contract provisions and large dollar amount projects has challenged government financial managers to ensure the continuing effectiveness of audit stewardship and oversight on large and/or innovative contracts. These new types of contracts are being awarded to multinational firms with the experience and resources to acquire large government transportation projects. Consequently, the audit community must be knowledgeable within a global environment when assessing financing options, the financial viability of private partners, and actual compliance with contract provisions.

Historically, European Union members have considerably more experience than U.S. States in auditing nontraditional transportation contracts such as design-build, design-

build-finance-operate, public-private partnerships, and concessions. Each European country has adopted the common audit guidance issued by the European Organization of Supreme Audit Institutions (EUROSAI) and has the resources of a national audit office. In the United States, State DOTs rely primarily on their own staffs for audit oversight. European countries, on the other hand, form unified approaches to auditing practices with organizations such as the International Organization of Supreme Audit Institutions (INTOSAI). The scan team determined that there was much to be learned from the European audit and highway transportation counterparts.

The scanning study was undertaken cooperatively with AASHTO and its Select Committee on International Activities and the Transportation Research Board's National Cooperative Highway Research Program (Panel 20-36), the private sector, and academia. Since 1990, FHWA has issued about 70 International Technology Exchange Program reports in seven subject areas: safety, planning and environment, policy and information, operations, general infrastructure, pavements, and bridges. This was the first scan to address audit stewardship and oversight.

The purpose of this scan on audit stewardship and oversight of large and innovatively funded projects was to review and document best practices of audit stewardship and oversight in Europe and to bring the transferable best practices, procedures, and methodologies back to the United States. The scan was completed in two parts. Part I, a desk scan, was completed without travel. Its purpose was to identify at least four European countries considered to be at the forefront on best practices.

Desk Scan Methodology

The desk scan was conducted November 3–28, 2005. Two primary searches were conducted:

1. Identify the European countries that have large and innovatively funded road transportation projects, including public-private partnerships.
2. Identify the European countries that have significant audit experiences with large and innovatively funded road transportation projects.

The co-report facilitators conducted a literature review, telephone interviews of scan team members, e-mail communications with potential European partners, telephone interviews of potential European partners, and an analysis of the data gathered.

The literature review was conducted to clarify and define terms for the purpose of the scan, gather documents that

would underlie the similarities and differences between audit standards and the respective standard-setting bodies in the United States and Europe, identify European countries using large and innovatively funded road transportation projects, and identify the issues and concerns on the U.S. road system from the multiple constituents that provide or use this method of transportation. The literature was searched through research databases accessing business academic and business periodicals; news, business, legal, and reference publications; and scholarly journals. The World Wide Web was searched to obtain government documents and pronouncements from the audit standard-setting bodies in the United States and abroad. The World Wide Web was also used to search for examples of large and innovatively funded road transportation projects.

Literature Review

Audit Stewardship and Oversight

Reports that address technical specificities in a subject area require a clear and concise definition of terms. Therefore, the fundamental terms expressed in the project purpose were defined. First, to determine the scan team's working definition of audit, the following terms were considered:

Financial audits are concerned primarily with providing reasonable assurance on whether financial statements are presented fairly in all material respects in conformity with generally accepted accounting principles (GAAP), or with a comprehensive basis of accounting other than GAAP.⁽²⁾

Attestation engagements concern examining, reviewing, or performing agreed-on procedures on a subject matter or an assertion about a subject matter and reporting on the results.⁽²⁾

Performance audits entail an objective and systematic examination of evidence to provide an independent assessment of the performance and management of a program against objective criteria. They provide information to improve program operations and facilitate decisionmaking by parties with responsibility to oversee or initiate corrective action and improve public accountability.⁽²⁾

The term audit is generic for the purpose of this scan and can include the three types of engagements defined above. Although most State DOTs do not perform comprehensive financial statement audits, they do perform audits of various elements of financial statements as well as a host of financial and nonfinancial (audit) attestation engagements.

Therefore, for purposes of this project, audit was defined as the following:

AUDIT

An **audit** includes the financial statement, attestation, and performance engagements conducted in accordance with generally accepted auditing standards (GAAS) and/or generally accepted government auditing standards (GAGAS).

The Federal Financial Management Improvement Act of 1996 requires each Federal agency to maintain a financial management system that applies Federal accounting standards and provides the information necessary to report whether the agency is in compliance with those statements. The system includes the definition of stewardship investments as beneficial investments of the Federal government in such items as non-Federal physical property (property financed by the Federal government but owned by State or local governments), human capital, and research and development. Therefore, the term stewardship is appropriate in describing the Federal government's role in ensuring that the investment made with the people's capital is optimized for the good of the Nation.

Stewardship is the act of managing personal property or financial affairs as an agent of another or others and oversight is the supervision or watchful care.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) addresses stewardship and oversight under which the State DOT will be required to perform any of the above defined audit or attestation services "to improve the value or quality of the project...to monitor the effective and efficient use of funds."

For this study, the co-chairs established the following working definitions of audit stewardship and audit oversight:

AUDIT STEWARDSHIP

Audit stewardship includes audit practices before contract initiation, including how financial evaluations are made to obtain the best outcome for the funds invested, how the government can receive the best value for the public, whether the proposing company has the resources to perform the project, evaluation of proposal costs, the sale and valuation of State assets, and audit reporting methods used to advise agencies on the mitigation of risk in the event of project difficulties.

AUDIT OVERSIGHT

Audit oversight includes audit practices during contract and post-contract periods involving the evaluation of work performed, use of project costing standards, distribution of profits from concessions, compliance with contract provisions, and an evaluation of overall price and quality of services received.

Information was gathered that would support the focus of the scan on audit stewardship and audit oversight. The specific issues and objectives for this scan are summarized in the boxes below.

The project objectives are appropriate in that they address the audit practices and issues necessary to evaluate government's fulfillment of its audit stewardship and audit oversight responsibilities.

Large and Innovatively Funded Projects

FHWA considers large projects as those equal to or greater than \$500 million. In addition, FHWA has identified innovative funding to include the following:

- ▶ **Advance construction (AC) and partial conversion of advance construction (PCAC)**—AC allows a State to begin a project even if it does not currently have sufficient Federal-aid obligation authority to cover the Federal share of project costs. Under PCAC, a State may elect to obligate funds for an advance-constructed project in stages.
- ▶ **Tapered match**—The non-Federal matching requirement applies to the aggregate cost of a project rather than a payment-by-payment basis.
- ▶ **Flexible match**—Allows States to substitute private and other donations of funds, materials, land, and services for the non-Federal share of funding for highway projects.
- ▶ **Toll credits**—States may use revenue from toll facilities as a credit toward the non-Federal matching share of certain highway projects.
- ▶ **Grant Anticipation Revenue Vehicles (GARVEEs)**—Any bond or other form of debt repayable, either exclusively or primarily, with future Federal-aid highway funds.
- ▶ **Section 129 loans**—Allow States to use regular Federal-aid highway apportionments to fund direct loans to projects with dedicated revenue streams.
- ▶ **State infrastructure banks (SIBs)**—Allow States to use regular Federal-aid highway apportionments to capitalize State-administered revolving funds. SIBs can offer loans and credit enhancement to both public and private

Scan Team Objectives for the Audit Stewardship of Large and Innovatively Funded Projects

1. A study of audit practices before contract initiation to determine the following:
 - ▶ How are financial evaluations made to obtain the best outcome for funds invested?
 - ▶ How can the government receive the best value for the public?
 - ▶ How does the government determine whether or not the proposing company has the resources to perform the project?
 - ▶ How does the government evaluate proposal costs?
 - ▶ How does the government decide on the sale and valuation of state assets?
2. An investigation of innovative audit reporting methods used to advise agencies on the mitigation of risk in the event of project difficulties.

Scan Team Objectives for the Audit Oversight of Large and Innovatively Funded Projects

1. A study of audit practices during contract periods, which include the following:
 - ▶ Evaluation of work performed.
 - ▶ Project costing standards.
 - ▶ Distribution of profits from concessions.
 - ▶ Compliance with contract provisions.
 - ▶ Evaluation of overall price and quality of services received.
2. A study of audit practices after contract periods, which include the following:
 - ▶ Evaluation of work performed.
 - ▶ Project costing standards.
 - ▶ Distribution of profits from concessions.
 - ▶ Compliance with contract provisions.
 - ▶ Evaluation of overall price and quality of services received.

transportation project sponsors. Banks can also be capitalized with State funds.

- ▶ **Transportation Infrastructure Finance and Innovation Act (TIFIA)**—Allows the U.S. Department of Transportation (U.S. DOT) to provide direct credit assistance to sponsors of major transportation projects. Credit assistance can take the form of loans, loan guarantees, or lines of credit, but the total amount of credit cannot exceed 33 percent of eligible project costs.
- ▶ **General toll provisions**—Give States the discretion to levy tolls on most non-Interstate Federal-aid highways.
- ▶ **Interstate System Reconstruction and Rehabilitation Pilot Program**—Allows up to three pilot projects to convert reconstructed or rehabilitated free Interstate highway segments into tollways.
- ▶ **Value Pricing Pilot Program**—Sponsors the testing and evaluation of road and parking pricing concepts designed to achieve reductions in highway congestion.

Individual States have been using these various mechanisms over the past 10 years to make necessary road infrastructure investments. Even with these mechanisms, there is concern that sufficient funds will not be available to meet future needs. “Without a significant influx of new revenues, our Nation’s transportation network will also continue to deteriorate, impacting mobility and economic well-being,” according to CEO Stephen E. Sandherr of the Associated General Contractors of America.⁽³⁾

Public-Private Partnerships

According to U.S. DOT, a public-private partnership is a contractual agreement between public and private sector partners that allows more private sector participation than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party is given additional decision rights in determining how the project or task will be completed.

Another definition of public-private partnership refers to an agreement between a public agency and a private sector entity under which the private sector assumes a greater role in the planning, financing, design, construction, operation, and maintenance of a transportation facility than traditionally has been the case.⁽⁴⁾

In December 2004, U.S. DOT issued *Report to Congress on Public-Private Partnerships*, in which it responded to *House Report 108-243* (2004) on impediments to the formation of large, capital-intensive highway and transit projects

involving public-private partnerships (PPPs). The U.S. DOT report addressed not only impediments to forming PPPs, but also PPP history and initiatives, the value of PPPs, stakeholder comments, and recommendations for removing impediments. The report stated the following:

Although not widely used today, public-private partnerships are not a new model for providing surface transportation infrastructure. For decades, the Federal Highway Administration (FHWA) and State departments of transportation (DOTs) have experimented with ways to increase the involvement of the private sector in financing and operating surface transportation facilities. The results of these early experiments are not widely known and many of the new partnership arrangements have not been widely adopted.⁽⁵⁾

The report acknowledged that the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA) provided several recommendations that should facilitate the use of public-private partnerships. These recommendations included new financing tools, such as a variable toll pricing program that would permit tolling on any highway, bridge, or tunnel, including the Interstate System. The report discussed the concept of shadow tolling, which has been used extensively in Europe.

European countries and other international governments, according to the report, have used public-private partnerships to a much greater degree than the United States. “Of all highly developed nations, the United States is among those in the earliest stages of public-private partnership implementation,” the report said.⁽⁵⁾ U.S. DOT identified the following international locations for public-private partnerships: Australia, Finland, Ireland, the Netherlands, New Zealand, Norway, Portugal, South Africa, and the United Kingdom.

A report issued by Price WaterhouseCoopers, *Developing Public Private Partnerships in New Europe*, identified countries using PPPs and the status of the projects undertaken by the PPPs. Table 1 (see next page) summarizes that information by country and road sector.

The study classified the individual country’s public-private partnerships in five categories based on the status of project completion. The highly summarized status of the country’s PPPs was discussions ongoing; projects in procurement; many procured projects, some projects closed; substantial number of closed projects; and substantial number of closed projects, majority of them in operation. All European countries except Luxembourg are involved in

Table 1. Summary of PPPs for roads sector by country.

EU Member States	ROAD SECTOR PUBLIC-PRIVATE PARTNERSHIPS					Involved in various stages of other sector PPPs
	Discussions ongoing	Projects in procurement	Many projects procured, some closed	Substantial number of closed projects	Substantial number of closed projects, majority in operation	
Austria		X				X
Belgium		X				X
Denmark		X				X
Finland		X				X
France					X	X
Germany			X			X
Greece			X			X
Ireland				X		X
Italy				X		X
Luxembourg						
Netherlands			X			X
Norway (not EU)			X			X
Portugal					X	X
Spain					X	X
Sweden	X					X
UK					X	X

various stages of nonroad-sector PPPs. European PPPs constitute 85 percent of PPPs worldwide.

Conclusions and Country Selections

- ▶ Many European countries are now involved in some form of construction project using PPPs.
- ▶ Several countries are at the forefront, with successfully completed projects that are fully operating.
- ▶ European auditors have more experience in auditing PPPs than U.S. auditors.
- ▶ The European audit community has a unified approach to auditing practice because of INTOSAI and EUROSAL.
- ▶ A visit to selected countries would provide the identification of best practices in audit stewardship and oversight of PPPs for transfer to the United States.

The scan team selected the following five countries for the scanning study:

England has substantial experience with PPPs. The country's initiatives began in the early 1990s and have provided a remedy for much-needed funding of road infrastructure assets. Nearly 90 percent of these projects were completed early or on time. Those not completed on time were completed within 3 months of the scheduled completion date. In 2003–2004, the PPP investment in public services

was projected at 11 percent of total investment in public services (\$61.3 billion). Although this growth in PPP investment took more than 10 years, it has provided a wealth of experience from which other European countries and the United States can benefit.

France has specific legislation on implementation of PPPs.⁽⁶⁾ In addition, France has established a separate unit within the government to facilitate PPP development. French public officials for the first time will be able to enter into design-build-finance-operate contracts on the British model. These laws offer improved security for lenders, allowing banks to have ownership rights over buildings delivered through PPPs and significantly assisting project finance transactions.⁽⁷⁾ A 2002 scan report, *Contract Administration: Technology and Practice in Europe* (FHWA-PL-02-016), identified France as active in innovative uses of PPPs. As a member of the European Union, the government of France has adopted INTOSAI audit standards.

Ireland is actively involved in PPPs. The country has passed enabling legislation to accommodate its infrastructure development. This legislation closely follows the English model. In addition, Ireland subscribes to the audit

standards established by INTOSAI. Ireland was one of four countries (including Greece, Portugal, and Spain) initially eligible for assistance from the EU Cohesion Fund. The Cohesion Fund was one of the major mechanisms the European Union created to fund regional development. It was available for project-based assistance for transport and environmental infrastructure investment in countries where the per capita gross domestic product (GDP) is below 90 percent of the European Community average. As of December 2003, Ireland no longer qualifies for this fund. It continues the projects funded through the Trans-European Transport Network (Ten-T). Ireland received €52.2 billion for road transport as one of the Ten-T priority projects. The only other road priority project went to Portugal for the Tagus Bridge (€311 billion). All other Ten-T priority projects were in the environment sector. The use of EU funds for members in public-private partnerships provides a parallel to the U.S. model of FHWA funds to the States.

Portugal has been using PPPs for 150 years.⁽⁸⁾ All elements of PPPs are used extensively. Portugal has 7,400 kilometers of motorways and numerous other PPP projects with concessions. The Ministry of Finance has control and supervision over government PPPs. Portugal is a member of INTOSAI. All concessions are controlled by the government and all projects require a substantive, detailed financial plan. Portugal is often cited in the PPP literature because of its length of experience in the area and the success of its projects. EU Cohesion funding to Portugal from 1993 to 1999 was €550 million, not including the Tagus Bridge project (€311 billion).

Spain is known to have strong and clear government leadership.⁽⁹⁾ Spain's leadership has provided legislation to establish PPP programs. In fact, Spain, like Portugal, was at the forefront in the use of PPPs for developing its infrastructure. Spanish leadership is becoming known in Europe as capable of seeing a project through to its completion. EU Cohesion funding to Spain from 1993 to 1999 was €1.7 billion. Currently, Spain is using the European Investment Bank to fund PPP transport infrastructure projects in the amount of €2.6 billion. More scan team members were aware of Spain's involvement in PPPs and innovative funded projects than any other European countries.

The scan team visited government officials and private partners to governments in all five countries. The countries all had large and/or innovatively funded road transportation projects that were operating and projects that were closed. The team met with representatives of the Portuguese

government, including Estradas de Portugal, Ministry of Finance, Inspectorate General for Finance, and Parpublica. Parpublica is a private corporation created by the Portuguese Parliament to handle the sale of public assets, manage all enterprise fund activity, and provide support to other ministries involved with PPPs. The team also met with two Portuguese private partners, Brisa Auto-Estradas de Portugal SA and Auto-Estradas Do Norte SA.

The scan team then met with the Spanish Ministry of Finance, the Spanish Road Association, the Association of Concessionaires, and the Madrid Area Road Infrastructure Agency. The discussions concluded with a visit to the North Tunnel Project (the Spanish "Big Dig"), an underground motorway (M30) that will move vehicles through downtown Madrid. The project required the building of the world's largest drills to bore the tunnels. In addition, extensive effort (noise barriers, dust control, etc.) has been made to protect the environment while the project is under construction.

The team then met with French officials. The team held discussions with representatives from the Ministry for Transport, Infrastructure, Tourism, and the Sea. Financial managers and auditors from the Office of General Inspector, Office of Counsel General, and the Highways General Department (Planning and Budget, Finance, and Operations) shared their experiences and processes on audit stewardship and oversight of large and/or innovatively funded projects.

London, England, was the next site visit. The team met with representatives of the English National Audit Office and the Highways Agency. The director, audit principal, value for money director, and manager of public-private partnerships provided extensive information and knowledge on the evolution and status of their stewardship and oversight processes on large and innovatively funded projects. Likewise, representatives from the Highways Agency's Internal Audit Department, Centre for Excellence, Operational Policy Division, Safety Standard and Research Department, and Engineering Department shared their expertise and experience with the U.S. delegation.

The final visit for the scan team was Ireland. The team met with representatives from the Office of the Comptroller and Auditor General, the Department of Transport, the public-private partnership officer from the Department of Finance, and the National Road Authority's senior project manager, head of program management, and head of PPP and network tolling.



Observations from the Audit Stewardship and Oversight Scan

THE 12-MEMBER SCAN TEAM OF AUDIT AND financial management specialists visited five European countries that have extensive experience in highway construction using public-private partnerships. Government officials from the audit agencies and road transport agencies of Portugal, Spain, France, England, and Ireland welcomed the U.S. team and presented information on (1) audit practices, both external and internal, (2) stewardship of the government's assets, (3) oversight of large road projects, many of which were accomplished through public-private partnerships, and (4) the use of tolls and concession contracts in meeting service needs of multiple constituencies. The scan team's observations of the audit environment in the five host countries are provided in this chapter so that readers can more fully appreciate the findings and recommendation presented in the next chapter.

General Observations

All five countries visited are members of the European Union. Membership gives broad economic advantages, including free trade between members, an option for a single currency, virtual removal of border crossings, and removal of barriers for banking and commerce transactions. EU membership does require members to adhere to certain mandated economic policies. The Maastricht Treaty has established debt limits and annual deficit limits for members. A nation's overall debt limit cannot exceed 60 percent of its GDP. In addition, the annual deficit of a nation must be below 3 percent. These are very stringent guides for many EU members. In fact, based on the last national budget approved by the U.S. Congress, the United States would be out of compliance with the requirements for EU membership.

The European Union, collectively, is integrating members' transportation systems into a seamless EU "interstate" road and rail system. The cost of this venture is significant and increasing. The host countries the scan team visited all have ambitious long-range and short-range transportation programs underway. New motorways, bridges, tunnels, and road infrastructure construction were visible throughout the team's tour.

Debt and deficit limitations have led to new methods of financing transportation infrastructure off balance

sheet (neither assets nor debt reported by the state and assigned to the private partner). Private financing has been encouraged by the European Union and road projects are prime areas for private financing. Design-build-finance with concessions, design-build-maintain with concessions, and design-build-finance-maintain-and-operate with concessions are all project schemes that could lend themselves to classification under the general heading of a PPP. All of these project schemes could have private financing. These PPP projects have a relatively long and accepted history among EU members.

Public-private partnership with private financing and concessions is readily used for road projects. Concessions can be either conventional with real tolling or shadow tolling. Real tolling charges the actual user of the road for the service and convenience of that respective highway, tunnel, or bridge. User charges normally are set to recover the cost of the road project and maintain the predetermined operating condition of that road and are high enough to allow for the private partner's profit. Shadow tolling, on the other hand, has the appearance of a free road because there is no charge to the actual user of the road. Instead, the government uses other general revenue streams to pay for the cost of the project and the annual maintenance. These shadow tolls are included in the elements of a public-private partnership contract that cover construction, operation, maintenance, and private sector profits. They are paid from current and future revenues. As several European hosts stated, "There is no such thing as a free road."

Tolling of major motorways, however, is common throughout the European Union and appears to be tolerated by European citizens as a proper means to finance roads. In other words, EU citizens are not averse to paying a toll for a road that meets quality and safety expectations and provides travel time savings compared to an alternate, lower-quality free route. In addition to accepting road, tunnel, and bridge tolls as a cost of travel, EU citizens also do not seem to have an aversion to private ownership of public infrastructure as a normal way of doing business. These observations are collective, and the scan team observed varying degrees of acceptance in the countries it visited.

European citizens' acceptance of the use of PPPs and tolling concessions might be attributable to the government's commitment to its stewardship responsibilities for public assets. As the experience level has risen, EU countries have restricted the length of PPP contracts to 21 to 35 years rather than 75 to 99 years. This corresponds with the accepted lengths of government bonds, commercial mortgages, and reasonable risk assessments. In addition, several countries include review and renegotiation of payments every 7.5 years to prevent private partners from earning "super profits" from a government contract.

SUPER PROFITS

Super profits are profits earned on a PPP contract that are more than could be earned in the private sector, given the same risk environment.

Another component used in concession contracts is availability payments, which are made to the private sector partner during maintenance work when a predetermined number of lanes are available to roadway users. When lanes are not available and traffic congestion or stoppage occurs, the availability payment is not made. Although

this is a penalty for the private sector partner, it is also a shadow toll because the government is making payments for lane availability. All European hosts indicated that they were trying to move away from shadow tolling to a more transparent cost for establishing tollway user charges.

Private roads and ferries were common in the United States during the 18th and 19th centuries. They fell out of use as the Federal and local governments began to develop transportation infrastructure during the 20th century. Today, the United States once again is considering private ownership of highway infrastructure projects using PPPs and concessions. At the January 2006 Transportation Research Board meeting, speaker Brian Grote stated that "FHWA is in the early stages of a paradigm shift. That shift is negligible in relation to the billions annually spent on our Nation's roads, but nevertheless a shift to private financing. The use of a PPP for major road projects is underway." He then cited the Chicago Skyway, the Indiana Tollway, and Texas and California projects as just the beginning.

Why now in the United States? According to AASHTO Executive Director John Horsley, "The shortfall in gasoline tax revenues of \$7 billion to meet the annual highway transportation needs is a driving force. It appears that the U.S. is embracing PPP with concessions in order to meet its current and future highway transportation needs.

Tolling for quality (safety, time, and gasoline savings) roads is becoming increasingly more acceptable to the U.S. drivers. This also shifts the cost of the roads to the users." The transportation newsletter *Innovation Briefs*, in a follow-up to a February 2006 commentary on highway tolling, reported that in March and May 2006 there were 16 new toll projects under study in States "across this nation. PPP and tolling are becoming the jargon most often heard among highway folks." It appears that major transportation systems, because of lack of highway funds, will have to be accomplished with private financing with concessions or basically with PPPs. While this concept of innovative financing with PPPs is relatively new in the United State, it has gone through an evolutionary process in Europe and much can be learned from Europe's mistakes and successes.

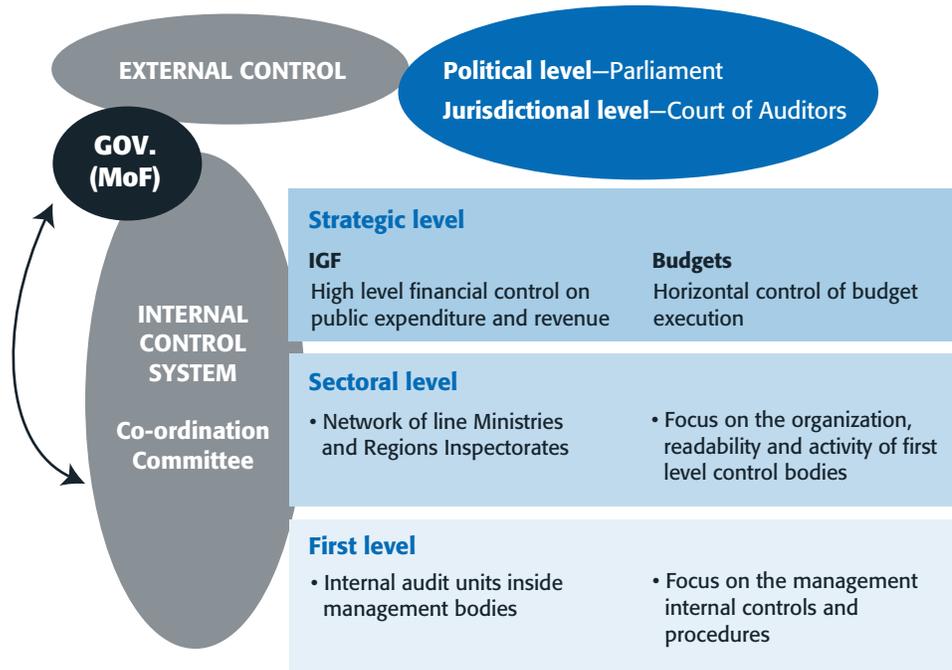
Audit Organization Observations

Team members gained valuable insights into audit practices during their meetings with European independent and internal auditors. The responsibility for the independent audit function in the host countries rests primarily with the central government. This is similar to the U.S. model in which each State, like a European nation-state, uses its own audit agency to conduct the independent (financial statement) audit function rather than the Government Accountability Office (GAO). All host countries visited had both independent and internal auditing agencies. The independent audit agency was responsible primarily for the financial audit functions and displayed independence from the executive branch of government by answering to Parliament, similar to the U.S. Federal model with the GAO answering to the U.S. Congress. In one country, Portugal, the audit function was located in the Ministry of Finance, but had oversight by Parliament (see figure 1).

The responsibility (organizational placement) for the internal audit function in the host countries visited was similar to internal audit organization placement in the United States. The internal audit function resides in each agency and/or ministry of the country. In the United States, the internal audit function is placed in each agency of the State or Federal government.

Audit Services Observations

Independent and internal audit services were similar to those offered in the United States. The work of the independent European auditors includes financial audits, attestation engagements (audit of various management assertions and representations), and performance audits (service efforts and accomplishment reporting). European internal audit agencies often provide management advisory



SOURCE: INSPECTOR GENERAL OFFICE, MINISTRY OF FINANCE, REPUBLIC OF PORTUGAL

Figure 1. An EU example of audit authority structure.

services and audits of economy, efficiency, and effectiveness of operations similar to those offered in the United States. Although independent audit emphasis is on financial statement auditing, auditors also perform financial, compliance, internal control, project, management assertion, and various performance audits, not unlike the United States. The European internal audit agencies are called on regularly to offer consulting services (advisory services) to agencies within their ministry. They are considered a management resource providing expertise in operational, financial, and control engagements.

Audit Standards Observations

Audit standards are quality guides used in conducting an audit. Audit procedures and practices are the actions (the work elements) performed by an auditor to gather evidence

to corroborate or refute the management representations being investigated (audited).

European independent (financial statement) audit standards are known as International Standards on Auditing (ISAs) and are issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC). These standards are not usually cited in auditing materials printed for the U.S. market. However, the ISAs, with minor exceptions, closely parallel the U.S. audit standards promulgated by the American Institute of Certified Public Accountants (AICPA) and now the Public Companies Accounting Oversight Board (PCAOB).

The International Organization of Supreme Audit Institutions (INTOSAI) was created by the United Nations to issue governmental auditing standards applicable to all public sector organizations throughout the world. European auditors follow INTOSAI governmental auditing standards. The government audits in the United States follow generally accepted government audit standards (GAGAS) promulgated by the GAO. European internal audit standards, including performance audits, are generally based on standards issued by the Institute of Internal Auditors, headquartered in Altamonte Springs,

Audit Standards

Audit standards are “broad statements of auditors’ responsibilities. They promise a framework for assuring that the auditors have the competence, integrity, objectivity, and independence in conducting and reporting their work.”⁽²⁾

Florida. Internal auditors in the United States use these internal audit standards or GAGAS.

The scan team members observed that European standards, practices, and terminology for auditing are similar to those in the United States. Little difference exists in the knowledge, skills, and abilities required to practice internal or external auditing in the European Union and the United States.

Accounting Standards Observations

Generally accepted accounting principles (GAAP) are promulgated by several different authoritative bodies.

GENERALLY ACCEPTED ACCOUNTING PRINCIPLES

Generally accepted accounting principles are authoritative guidance to be followed in the preparation of an organization's basic financial statements.

Once readers of financial statements understand the rules or guides, they are able to interpret and analyze any organization's representations (financial reports) prepared according to GAAP. GAAP for U.S. for-profit corporations and

not-for-profit organizations are promulgated by the Financial Accounting Standards Board (FASB). The Governmental Accounting Standards Board (GASB), an independent not-for-profit organization, establishes financial reporting standards for U.S. State and local governments. The U.S. Government establishes its own GAAP through an advisory board known as Federal Accounting Standards Advisory Board (FASAB). State governments, therefore, follow GASB, which requires full accrual reporting, while the Federal government follows FASAB, which is moving to a full accrual reporting basis.

There are differences between U.S. GAAP and international GAAP. For a trained accountant, the differences are easily reconcilable. National governments in Europe, like the U.S. Government, maintain and follow their respective methodologies for preparing financial statements. Each government's legislative body establishes financial reporting standards for European governments. Several countries follow International Accounting Standards (IAS) issued by the International Accounting Standards Committee (IASC) of the International Accounting Standards Board (IASB). The basis of accounting for measurement and financial reporting among host countries visited ranges from cash basis to full accrual basis. The European Union allows differences in financial reporting requirements between

member states, but it does have certain requirements for recording budgetary expenditures and reporting national debt.

Audit Stewardship and Oversight Observations

The agency's chief executive officer (CEO) is often called a department head. The head of the department of transportation is also commonly referred to as the agency accountability officer in England and the agency accounting officer in Ireland. These titles are given to agency CEOs to emphasize their responsibility for all financial dealings, internal control procedures, and "representations" of their departments. To assure the CEO that the country's PPP policy, laws, regulations, accounting controls, financial reporting, procurement laws, and EU requirements are being followed, several host countries have established a distinct position of process auditor. A process auditor is a person selected by the CEO to monitor the RFP preparation and selection process to assure the CEO of total compliance with all laws, procedures, and practices.

Audit stewardship includes practices before contract initiation. These practices set the financial and performance objectives and prepare the business model before the adoption of a capital project. In the United States, auditors, internal or independent, are rarely involved with the initial stages of a highway construction project. The auditors typically become involved in a project at the various stages of partial contract payments and when the project is completed.

BUSINESS MODEL

A **business model** is a business plan, a clearly written document that identifies the business, its products, its goals, and its objectives. A plan is developed for each capital investment and includes, but is not limited to, goals, objectives, cost, financing, and expected return (financial, social, risk analysis, and expected contribution to the overall organization). A business plan should incorporate robust financial analysis using present value and internal rate of return techniques.

In the European host countries visited, the procurement process involves a team of qualified personnel with finance, audit, and legal credentials. The team convenes at the beginning of the capital investment highway construction planning process and follows the project through to

completion and operation. If needed, the team also can include contract consultants with specific expertise. The team develops business models using extensive risk analysis, capital budgeting techniques, and sensitivity analysis (what-if analysis) to help in project selection and RFP development.

PPPs with concessions require robust business plans/models to evaluate project selection and proposals. Generally, traffic counts are an integral part of a concession contract bid. The Europeans have found it helpful to use an independent party to develop the traffic counts for the government to use to assure consistency in the evaluation of bid contract proposals. Contract proposals are reviewed by finance and audit personnel. Total project costs are developed using present value and internal rate-of-return techniques to establish a capital project value. These techniques, internal rate of return (IRR) and present value (PV), are also used in the project business modeling plan and bid selection process.

Project delivery, in the European host countries, is affected by the size of the project, type of financing arrangements, and elements of the contract. In Europe, major projects generally are defined as greater than \$14 million and are carried out under some type of design-build (DB) process, including design-build-finance-operate (DBFO) and design-build-operate-maintain (DBOM), rather than the design-bid-build model (DBB) that is the U.S. standard. This causes a longer project development period

(see figure 2), but usually results in a project that is on time and on budget.

All host countries have developed PPP capital project practices for planning, project selection, developing an RFP, reviewing tenders and tender selection, and developing performance measures to monitor implementation and project delivery. Practices during contract and post-contract periods involve the evaluation of work performed, use of project costing standards, distribution of profits from concessions, compliance with contract provisions, and an evaluation of overall price and quality of services received.

International host countries emphasized that oversight is best accomplished through clear, concise, and complete contract terms. Most European countries have an experienced planning team composed of qualified financial, legal, engineering, and management experts for large projects with concessions. This group is involved with the determination and quantification of the contract risk, contract objectives, and performance objectives. These three elements—contract risk, contract objectives, and performance objectives—will become the framework for the audit program within the project life cycle.

Throughout the host countries, the scan team observed an emphasis on capital project selection, analysis, approval, and implementation. This process is illustrated in figure 3 (see next page).

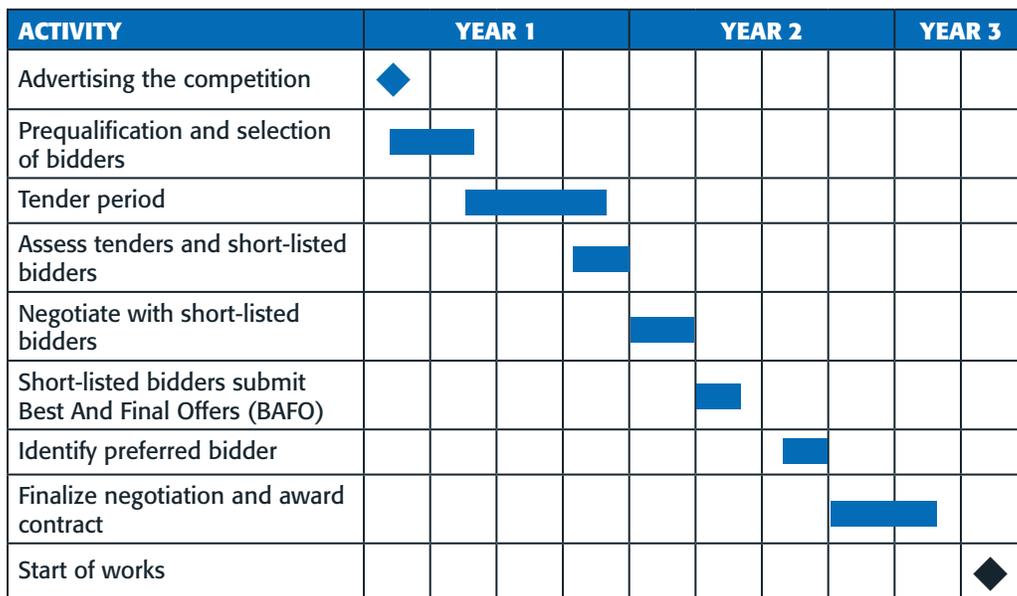


Figure 2. Illustration of a procurement process.

The extent and depth of process can be illustrated by a summary of the *Guidelines for the Appraisal and Management of Capital Expenditure Proposals in the Public Sector*, issued by the Department of Finance in Ireland in 2005:

There are four stages of project appraisal and management: (1) appraisal, (2) planning/approval, (3) implementation, and (4) post-project review. It is not a detailed planning and cost control hand book. Instead, it sets out the main steps which should be followed in evaluating and managing capital expenditure projects, considers the major issues of principle involved, and describes the principal methods of appraisal.

(1) Appraisal consists of two phases—preliminary and detailed. The preliminary appraisal aims to assess if the project has sufficient merit to justify a full, detailed appraisal. The detailed appraisal aims to provide a basis for a decision on whether to drop a project or to approve it in principle.

Most projects will be considered in the context of a sponsoring agency’s business plan or a multi-annual investment programme. The Sanctioning Authority should ensure that there is adequate consultation between sponsoring agencies, relevant Departments and public bodies having functional responsibilities in the sector or cross-sectoral responsibilities.

Programme evaluation should consider five key questions:

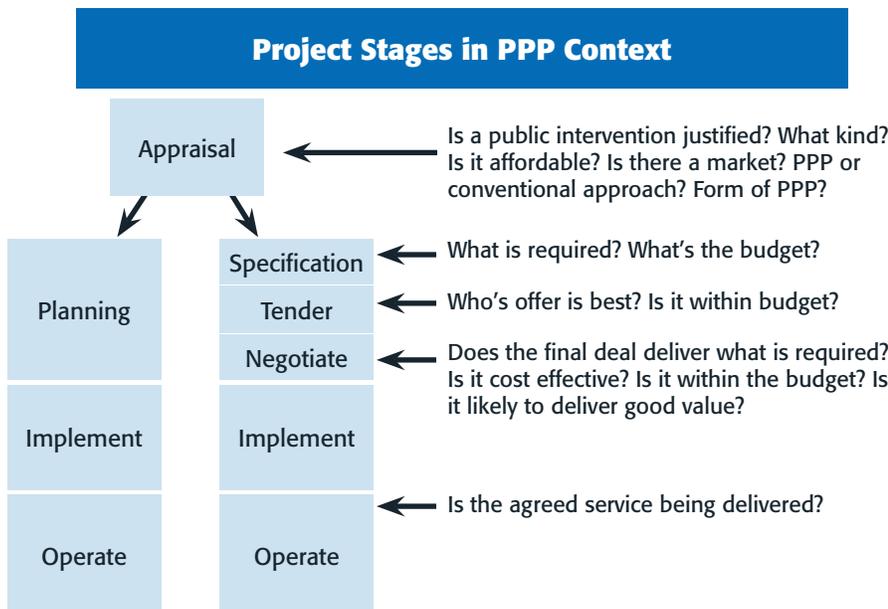
1. Rationale—What is the justification or rationale for the policies underpinning the programme? What is the underlying market failure justification for Government intervention?
2. Relevance—What are the implications for the programme of changes in the wider socio-economic environment and in the context of overall Government policy?
3. Effectiveness—Is the programme meeting its financial and physical objectives?
4. Efficiency—Could more be achieved for the resources invested?
5. Impact—What socio-economic changes can be attributed to the program?

The preliminary appraisal aims to establish whether a sufficiently good prima facie case exists for considering a project in depth. It leads to a recommendation on whether to proceed to the detail appraisal stage (often a costly exercise).

A detailed appraisal leads to a recommendation on whether to approve a project in principle. All public capital projects should be appraised carefully for consistency with programme/policy objectives and value for money. This stage determines the appropriate procurement method to be used, DB, DBE, DBFO, and DBFOM.

(2) Planning/Approval involves detailed planning and costing of the project; no commitment to finance a project should be made until this stage is completed and a decision taken on whether to proceed is taken. Establishment of project management structure; preparation of a project brief; detailed planning and design; review of proposal, using information provided by the planning process; obtaining approval of the Sanctioning Authority; obtaining tenders for projects; and review of proposal, using tender prices.

(3) Implementation requires clear arrangements for monitoring progress and cost control, securing project standards and timely delivery. Formal structured arrangement should therefore be put in place by the Sanctioning Authority to ensure that there is systematic coordinated monitoring and management of programmes.



SOURCE: OFFICE OF THE COMPTROLLER AND AUDITOR GENERAL, IRELAND

Figure 3. Illustration of project stages in a PPP.

The implementation stage of a project begins once final approval for the award of a contract has been secured. Implementation of the project is the responsibility of the Sponsoring Agency while the sanctioning authority must be satisfied that the Sponsoring Agency delivers the project as approved. Where the Government is the sanctioning authority, the responsibility for ensuring delivery of the management and monitoring functions in the implementation stage will rest with the relevant line Department (the Department which presented the proposal to Government).

(4) Post-Project Review confirms whether project objectives have been met, the project has been delivered to required standard, on time and within budget and to ensure that experience gained can be used on other projects and possibly in the continued use of the new asset. A post-project review should be undertaken once sufficient time has elapsed to allow the project to be properly evaluated with sufficient evidence of the flow of benefits/costs from it.

Review of project outcome determines whether:

- ▶ the basis on which a project was undertaken proved correct;
- ▶ the expected benefits and outcomes materialized;
- ▶ the planned outcomes were the appropriate responses to actual public needs;
- ▶ the appraisal and management procedures adopted were satisfactory;
- ▶ conclusions can be drawn applicable to other projects; to the ongoing use of the asset; or to associated policies.

The sponsoring agency must report to the sanctioning authority summary findings of its post project reviews and details of actions taken on foot of those reviews to improve its project management arrangements. This aims to determine whether experience shows that any stage of the project could have been done better and any lessons applied elsewhere.

Concessions Observations

Generally, there are two types of toll projects: user tolls or shadow tolls (taxation). A user toll occurs when the toll road operator charges the user of the road for services and not the general taxpayers who may or may not use the road. Shadow tolls are hidden tolls paid to the private partner (concessionaire) from general tax revenues. The concessionaire receives a set amount for each vehicle that uses the road network based on a predetermined rate per vehicle type or a fixed amount for keeping a motorway lane open. Therefore, when shadow tolls are used, they are in fact only a methodology of earmarking current and future taxes to finance a road project. The conclusion to draw from this financing

reality is that there are no free roads, only a choice of who pays.

The value of the payments for the shadow toll per type of vehicle is established during the initial phase of PPP formation. Verification of road or bridge usage and resulting payments is readily available in real time to both the government and the private partner. The country with the largest use of shadow tolls was Portugal. However, the headline of the lead article in the November 2004 *TOLLROADSnews* read, “‘Portugal to toll all motorways—free roads no longer financially viable’ . . . Finance Minister.” Like other European host countries, shadow tolling appears to have fallen out of favor and Portugal plans to convert all shadow toll concessions to real toll concessions. During their presentations, the host country representatives outlined currently operating DBFO projects that use shadow tolls. They also stated reasons, both financial and social (a fairness issue concerning who pays tolls for roads and who does not), for not using them in the future. Private financing of roads and bridges paid with shadow tolls does not free up tax revenues for other projects. To summarize, the European host countries were all reevaluating the use of shadow tolls because of a fairness concern and budget constraints.

Concession and private transportation operations (PPP) are widely used today in the European Union. Until recently, the few toll roads in the United States were not in private hands, but were owned by public corporations or public authorities. With the recent leases of the Chicago Skyway and the Indiana Tollway, private ownership with concessions is an indicator of the possible direction for future funding of U.S. highway transportation projects. Collectively, new construction projects by the international host countries are funded about 50 percent by concessions and are classified as PPPs. Each host country has developed an extensive road construction plan that includes private financing with concessions.

The scan team also found that the terms in PPP and concession contracts have a myriad of elements, depending on the nature of the specific contract. Each PPP with concessions is unique regarding ownership, type of concession, risk, financing, contract length, and elements of project delivery. Nontraditional projects such as public-private partnerships (DBOM and/or DBFO) may be more costly than traditional projects such as DBBs. As financing risk is shifted to the private sector, the financing costs of highway projects may increase because of private sector financing. The private sector expects a return (profit) on its private investment. In the European Union, the private

sector expects a return of 7 to 17 percent on its investment. Life cycle costs are generally not considered in DBB or DBFO contracts in the United States. However, life cycle costs become an integral part of the PPP project evaluation in the countries the scan team visited. In Ireland, value for money and whole life costing (life cycle costing) become central to the evaluation and selection of all capital spending proposals. Delivering large infrastructure projects is complex and requires a constant review and adjustment, if necessary, of concession payment mechanisms, bid procedures, project size, and tolling risk. The PPP mechanism requires varied expertise from the auditors whose role is to safeguard the public interest.

PPP profits should be limited to a reasonable return for the private partner. A number of European countries identified concessionaires earning super profits as a result of PPP contracts. Super profits are profits that excessively exceed the expected rate of return in comparison to the concessionaire's initial proposal. Charges of a PPP earning a super profit must be determined on a case-by-case approach. The host countries indicated that profit-sharing models with PPPs should be structured on revenue generated rather than profits earned because revenues can be more easily monitored and audited. Several host countries stated that in future PPP contracts they plan to add a contract clause that would allow a review of the concession contract clauses every 7.5 years. The review would allow the government to renegotiate profit-sharing arrangements and concession profit levels in general.

PPP profit projections are closely related to financing terms outlined in the original project proposal and profit expectations outlined in the contract. When interest rates change, refinancing of debt could mean an immediate windfall profit for the private sector PPP partner. Host countries recognize that financing terms in the initial contract proposal can have future changes that drastically change the profit structure. Host countries include a clause in PPP contracts that requires a sharing of any refinancing profits. Several host countries require an equal share of any and all refinancing profits. This refinancing sharing arrangement is detailed in the original tender (bid) specifications.

Findings and Recommendations

OVER A 2-WEEK PERIOD, SCAN TEAM MEMBERS visited five host countries in Europe and met with transportation officials, auditors, accountants, and financial executives. The purpose of the scan was to gather information on audit stewardship and oversight practices employed by the host EU countries. The host countries chosen for the scan had years of experience dealing with a variety of PPPs (DBM, DBOM, DBFO, financed privately with concessions) on large and innovative highway transportation projects. This fact was confirmed beginning with the scan team's first meeting in Portugal and continued throughout the meetings in all host countries. The European countries visited had extensive experience with PPPs and other nontraditional vehicles for delivering road infrastructure assets.

The EU goal of having seamless major motorway transportation systems throughout the European Union had caused a significant increase in highway construction. These ambitious motorway construction plans led not only to private sector financing but also to new delivery methods of PPPs. Contracts for PPPs with concession and financing arrangements have been an evolutionary process in the host countries. This is clearly demonstrated by the differences between the terms of initial (early stage) PPP contracts and those now being planned and developed. The countries explained their increasing use of business models and project evaluations as well as the sophisticated stewardship and oversight processes they conducted.

The scan team is aware that not all best practices identified in the EU host countries are transferable to U.S. highway programs in identical or even modified form. Political, social, and economic systems differ from country to country. What may work for one government may not be applicable to another. In addition, the scan team is aware that some of the best practices it identified may already have been implemented fully or in a modified manner in one or more of the 50 State highway programs. The scan team believes that the best practices discussed in this chapter have merit for analysis and possible implementation in the audit stewardship and oversight area of the many PPP programs being considered in the United States. The findings and recommendations are presented in three categories: audit stewardship, audit oversight, and general audit issues.

Audit Stewardship Findings and Recommendations

Audit stewardship—Includes audit practices before contract initiation, including how financial evaluations are made to obtain the best outcome for the funds invested, how the government can receive the best value for the public, whether the proposing company has the resources to perform the project, evaluation of proposal costs, the sale and valuation of State assets, and audit reporting methods used to advise agencies on the mitigation of risk in the event of project difficulties.

The first finding and recommendation in the stewardship category could have been put into any one of the three categories, but it was placed under stewardship because of its importance. All five host countries emphasized the lack of and need for new auditor tools and skills. In fact, Ireland's Interdepartmental Group on Public-Private Partnerships issued a white paper titled "Framework for PPP Awareness and Training." Ireland patterns its training program for PPP after that of the United Kingdom. The United Kingdom experience was evolutionary and identified a variety of skills needed so that public sector employees can effectively approve, monitor, and evaluate PPP projects.

Portugal, England, France, Ireland, and Spain all addressed the employee skill sets necessary for dealing with new and innovative finance initiatives and the various and complex PPP models. All countries now use a diverse team approach in which team members have accounting, auditing, engineering, business modeling, financial analysis, capital budgeting, legal, and negotiation skills. These skills were identified as necessary for government teams to stand as equals with the private sector business teams that submit proposals and negotiate for private ownership with concessions for infrastructure of traditional public assets. These teams are convened at the initial planning stages of any proposed project and remain until delivery and final project evaluation. When expertise is lacking, new team members with required skills are added. The government also can hire private sector consultants if in-house personnel lack the required skill sets.

England and Ireland have established a new position of process auditor to monitor PPP initiatives through the tender (bid) process. Ireland's process auditor performs the

“function of recording the completion of a number of processes in a PPP project, including the Stakeholder Consultation process. In the event that the Process Auditor has a concern of a material nature in the process, there are a number of actions available to him/her as set out in the detailed Process Auditor Guidelines. The process auditor is appointed by the Agency Head and is answerable directly to the chief executive officer (CEO).” (See sample procurement process checklist in Appendix F.)

Recommendations

- ▶ The public sector needs to have (or obtain) the necessary skill sets to analyze PPP project initiation and selection with the same rigor the private sector uses before entering into any long-term business relationship. Auditors, therefore, need a variety of business and audit skill sets comparable to their private sector counterparts. These skills include but are not limited to value engineering, business modeling, capital budgeting (present value and internal rate of return applications), traditional financial problem-solving methodology, performance auditing, and service efforts and accomplishment reporting (SEA). Additional training of current staff may be required. New personnel with specialized skills may need to be hired. Skill sets needed on a limited or occasional basis could be satisfied by contracting for those services with the private sector. Portugal, Spain, England, France, and Ireland all championed the need for training of their staff to remain equal to the private sector. But they also recognized that there were times when a combination of in-house employees and outside consultants was more cost effective than hiring additional government employees or training existing employees in skill sets not needed on a continuing basis.
- ▶ Public sector DOT teams need to be established for each proposed PPP highway project. This PPP team would have the necessary skill sets to develop a business model to determine if the project can deliver value for money (VFM) to its citizens. The team would be involved in all matters pertaining to the proposal, selection, and construction of this capital PPP project. Teams are usually comprised of State DOT personnel, but members also can be from outside the agency. When needed expertise is not available within the State DOT, it may exist in personnel of other State agencies, in academia, or in the private sector.
- ▶ State DOTs should examine the use of a process auditor concept for each PPP. The responsibility of the process auditor is to assure that all necessary legal, accounting, and policy issues are addressed in the development of a PPP proposal through the final bid acceptance.

Audit stewardship is achieved during the planning process of major innovative finance projects or PPPs. Audit review is ongoing throughout the life of the project. Clear performance objectives should be developed for each stage of the PPP life cycle, along with audit monitoring methodology to appraise the performance objectives. Public sector comparators (comparables) need to be developed early in the initial planning stage.

PUBLIC SECTOR COMPARATORS

Public sector comparators (comparables) provide a realistic estimate of how much it would cost the public sector to provide the identified transportation project. The standard of design quality to be achieved should be clearly demonstrated, including how the project expectations can be met within an agreed affordability envelope.

The goals of a PPP include speedy and cost-efficient value for money projects using private financing arrangements with concessions to allow transportation agencies to meet the increased demand for efficient, safe, and quality highways without increases in general or gasoline tax revenues. At the heart of audit stewardship is assurance that corporate governance is followed.

For it is through governance that an organization achieves its objectives and targets. It is about establishing a framework of control that supports innovation, integrity, and accountability, and encourages good management throughout the organization. (May 16, 2006, presentation to scan team in England)

Each host country had a team or organization, usually within the national ministry of finance, that developed policies and controls for use with PPP capital procurement projects. In Ireland, the National Development Finance Agency was responsible for this function. Created by legislation, its main functions are to (1) advise state authorities on optimal means of financing public investment projects, (2) advance moneys if necessary, (3) provide advice on financing public investment, and (4) establish (when necessary) special purpose companies.

Recommendations

- ▶ Audits should be conducted throughout the project life cycle, not just at the end of construction, and they should not be merely audits of construction costs. Auditors should concentrate on audit process that is value for

money oriented. The project life cycle should be monitored using compliance, financial, and performance auditing and become intimately involved with the final audit of project effectiveness.

- ▶ Public project comparators (comparables) should be developed for each project early and, of course, before a request for proposal (RFP) is issued. Comparators need to be robust and meaningful. Economic and financial forecasting techniques should be used and skillfully developed. Project cost estimates must be taken seriously and prepared as if they will continue throughout the life of the project. A hastily, casually drafted first estimate, even if revised later, may be the only highway project cost estimate remembered by the media, the citizens, and the politicians.
- ▶ Early and active involvement by internal audit staff and financial experts improves the quality of highway project RFP design and tender evaluation. Project performance objectives need to be established with the initiation of the project. Once they are established, audit techniques and performance benchmarks can be developed. This allows for stewardship and oversight throughout the life of the project.

All host countries emphasized that PPP contracts should be clear and concise with specific clauses dealing with (1) concessions and sharing of concession profits with the government if toll revenues (concession) exceed initial projections, (2) future increases in toll charges by the concessionaire, (3) the sharing arrangement with the government if super profits occur in an amount well beyond initial expectations detailed in the business plan used to create and award the PPP contract, and (4) the sharing of profits from refinancing debt. All of the host countries recognized that PPPs are a financing mechanism and that the interest rate in the tender is subject to market fluctuation. Therefore, they expect to keep the rate of return for private partners reasonable by requiring them to share any refinancing profits. Contracts should be clearly written to avoid or prevent future contract litigation. A contract clause, in case of disputes, should require binding arbitration.

Recommendations

- ▶ Business models should be used to evaluate the capital investment of transportation projects. These robust models should include tools such as value for money, present value, internal rate of return, and risk assessment. These business models and profit projection techniques can then be incorporated in PPP concession contracts. Super profits by a concessionaire are to be avoided and prohibited. The PPP contract should establish a

cap on expected return to the private sector contractor. Concession contracts should call for a sharing of revenues with the State if toll activity exceeds a specified, predetermined base. Concession contract terms should specify the annual toll inflationary adjustment rate as well as expected traffic counts. When these expectations are exceeded, the State should share in the revenues. A predetermined level of super profits could also be used to trigger revenue sharing or a required contract adjustment.

- ▶ Engineering specifications on DBOM (PPP) projects should be specific to the outcomes desired. The contractor should be provided with the opportunity to determine the detailed specifications to construct, maintain, and/or operate the project.
- ▶ Refinancing profits should be shared between the government and the PPP. This sharing arrangement is detailed in the original tender bid specifications.
- ▶ Performance evaluations should address the PPP planning process, administrative procedures, respect of key events, technical standards, detailed estimations of bids, use of comparison with administration comparators, traffic expectations and traffic growth projected during the concession, and reasonableness of revenue projections (projected inflationary toll increases). Most of the evaluation should use the techniques of business planning and capital budgeting measures.
- ▶ The value for money (VFM) process should be used as a viable and effective methodology for selecting projects and/or contractors.
- ▶ Preparers of PPP contracts should consider including a binding arbitration clause.

What is the Value for Money?

	Key questions	Assessment method
Good VFM ←	Is this the best price?	Cost comparison
	Is it worth the money?	Cost benefit analysis
Best VFM ←	Can we afford it?	Affordability test

SOURCE: OFFICE OF THE COMPTROLLER AND AUDITOR GENERAL, IRELAND

Figure 4. Value for money.

When PPPs were being implemented throughout the European Union, contracts were commonly written for 60 to 99 years. The host country representatives stated that earlier PPP contract lives were excessive and that current and future PPP contracts are limited to 30 to 35 years. A host country representative explained the 30-to-35-year contract limitation in relatively simple terms: “If a PPP is a financing arrangement, then the PPP contract period should be no longer than the length of a typical financing instrument used to finance similar assets.”

England and France plan to introduce a renegotiation clause in PPP contracts at the end of each 7.5 years. This 7.5-year clause would allow all concession items to be renegotiated throughout the contract life.

Recommendation

- ▶ Although each contract is unique to the PPP project, it is recommended that contracts for PPPs with concessions be limited to 30 to 35 years. Any PPP contract longer than the recommended time must be adequately justified in the business plan.

Audit Oversight Findings and Recommendations

Audit oversight—Includes audit practices during contract and post-contract periods involving the evaluation of work performed, use of project costing standards, distribution of profits from concessions, compliance with contract provisions, and an evaluation of overall price and quality of services received.

Host countries encouraged the development of a viable business plan as a condition for the effective control of a PPP capital highway project. The business plan outlines the project scope, objectives, alternative project, comparables, risk, time line, and necessary elements to develop a bid or tender. This business plan will present the VFM analysis and all elements that will become the foundation for development of life cycle audit objectives. Auditors and finance personnel need to be involved early in the process, providing a consultative role.

PPPs with concessions involve complex issues of economic revenue projections and monitoring and auditing of toll collections by the private sector. A PPP should be used only if it can be justified from a business sense. A PPP with concessions can release State DOT funds for use for necessary traditional transportation projects. The private financing for the PPP project is, of course, a business venture. Therefore, the public sector should use robust business modeling, including the same tools private business uses to determine capital investment selection and return (value for money).

Recommendations

- ▶ Critical areas for audit oversight should include auditor involvement in the procurement contract, the methodology and basis of establishing risk allocation between the parties in the procurement contract, and preparation of public comparators for the contract.
- ▶ Audit plans should be developed from the PPP project business plan. Poor or inadequate business planning prevents the development of adequate performance evaluation criteria. Responsibility for the evaluation methods lies with the State DOT, the developer of the business plan.
- ▶ Methodology for audits of concession counts, revenues, and expenses should be developed and included with clear contract language in the tender or RFP. With long-term contracts, the audit methodology should address changes in future technology.
- ▶ Financial evaluation of traffic counts should be in real time to both parties with agreed-upon methods of surveillance. Electronic systems allow contractors and States real-time information that is verifiable with basic video technology.
- ▶ Audit objectives should be written for each stage of the project life cycle, including what audit questions need to be answered at each phase and the audit standards to be followed that relate to the audit objectives. A final performance audit should be conducted to determine whether the PPP project is delivering the projected sustainable benefits at the expected cost.

General Audit Issues, Findings, and Recommendations

The European governments are moving to transferring risk to private contractors for major projects. The business model developed for each project determines the amount of risk transferred to the contractor. The countries approached the allocation of risk in PPP contracts differently based on their budgets and project requirements. The most appropriate risk allocation basis should be used for each type of contract and project, given the circumstances. However, all host countries agreed that the greater the risk transferred to the private sector, the greater the cost of the project.

Recommendation

- ▶ Business plans should allocate risk between the PPP partners according to their ability to control and manage the risk. Risk sharing impacts PPP construction and financing costs and thereby impacts user toll costs.

The European Union has established a goal for a seamless interstate motorway system to increase commerce within



and between the member states. Because of the extensive and different tolling systems throughout the European Union, the host countries showed concern and interest in the development of a seamless EU tolling collection system to facilitate nonstop tolling. Citizens would be able to buy a toll pass and use it throughout the EU states.

Centralized billing and/or credit card charges could be processed electronically. Tolling costs would be more transparent to the user and governments would be more accountable for the cost per mile for toll road usage. In addition, auditors would be able to verify toll road usage more easily by sharing traffic counts with neighboring states.

Recommendation

▶ The United States, through FHWA and AASHTO, should work toward development of a national seamless tolling system. The system should allow State DOTs their autonomy, but it should be 100 percent compatible and interoperable. This would allow citizens with a single registration to access any toll scheme throughout the Nation.



Implementation Strategies

INCREASING DEMANDS IN THE UNITED STATES for quality transportation services and infrastructure, coupled with increases in the costs of providing these services without significant increases in historical revenue streams, have resulted in many transportation agencies undertaking nontraditional, innovatively financed infrastructure projects. A concern among State and Federal managers is the effectiveness of the audit stewardship and oversight for these projects.

Infrastructure projects can include traditional design and construction, DB, PPP, and concession elements. Many projects are now being awarded to multinational firms with the experience and resources to acquire large government transportation projects. The trend is increasing toward transportation contracts that are larger both in size and dollar amount. In addition, more States are using innovative financing techniques (primarily credit programs) to advance these projects.

European nations also have employed innovative financing methods to meet increasing infrastructure needs, and they have considerable experience in auditing large, innovative transportation projects with DB, PPP, and concession elements. To examine and document the best programs and practices employed by the European nations in the stewardship and oversight of large and innovatively funded projects, a diverse team of financial management specialists with representation from Federal and State transportation agencies, academia, and the private sector traveled to Europe in May 2006.

The scan team identified several strategies for disseminating and fostering the findings and recommendations of this scan. The implementation strategies are summarized below as short term (within 1 year after completion of this report) and long term (within 3 years after the completion of this report):

Short-Term Implementation Strategies

- ▶ The scan report will be disseminated as widely as possible throughout the transportation community. Presentations should be scheduled for the annual meetings of Transportation Research Board (TRB), AASHTO, American Road and Transportation Builders Association (ARTBA), American Council of Engineering Companies (ACEC), and applicable AASHTO committee and subcommittee

meetings in 2006 and 2007, with special effort to target the CEOs, CFOs, auditors, and other senior managers in State DOTs. In addition, information should be shared with other relevant constituents, such as legislators, governors' associations, the U.S. Conference of Mayors, the National League of Cities, and other public sector professional organizations.

- ▶ Scan team members are encouraged to write articles for publication in professional transportation trade journals and professional accounting and auditing publications.
- ▶ Scan team members are encouraged to volunteer for speaking engagements at professional meetings and conferences to share the recommendations of this report.
- ▶ A best practices Web site that would incorporate the scan results should be developed by AASHTO and FHWA through the AASHTO Standing Committee on Finance and Administration and the Subcommittee on Internal/External Audit. Availability of the Web site should be promoted throughout the governmental auditing, finance, and transportation community. Links to other Web sites with applicable information should be included, such as the following:
 - <http://www.innovativefinance.org>
 - <http://rru.worldbank.org>
 - <http://rru.worldbank.org/Toolkits>
 - <http://www.fhwa.dot.gov/ppp/resources.htm>
- ▶ Scan team members should participate in national and international PPP forums to obtain additional information and training and to document best practices on PPPs in the United States and abroad. The information learned from forum participation should be disseminated via FHWA, AASHTO, TRB, ARTBA, and ACEC.
- ▶ A monograph explaining public-private partnerships from the specific viewpoint of transportation should be written and made available to the transportation community.

Long-Term Implementation Strategies

AASHTO and FHWA should partner in providing consultation and training of auditors and other financial managers involved in PPPs and other innovative transportation procurement contracts. This consultation and training should include development of the following:

- ▶ A financial project planning and business model that agencies could use to analyze the robustness of the financial portion of PPPs and other large, innovative scheme

proposals. Value for money concepts should be included in the development of the model.

- ▶ A model to establish public comparables for all projects being considered. This model should enable the user to interact with the business financial model discussed above, including the analysis of value for money.
- ▶ A model contract for concessions and PPPs, including a library of contract practices, guidelines, and clauses.
- ▶ A dictionary of commonly used terms within the audit environment on transportation financing structures.
- ▶ A database of best practice audit processes and procedures for traditional and nontraditional capital improvement highway transportation projects. The database could include concession contracts, private sector rate of return on concession contracts, national tolling charge (revenue) per mile, profit-sharing arrangements for debt refinancing, and audit techniques for PPPs.
- ▶ A series of training courses on special topics unique to audit and finance transportation personnel dealing with traditional and nontraditional projects. The training should include topics such as value for money, risk analysis, business modeling, financial analysis, capital budgeting, and negotiating.
- ▶ An audit guide for PPPs.
- ▶ A repository of specific statutory and regulatory requirements found in each country scanned and make them available to the transportation community on the Web site.

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Karen R. Grosskopf has been the financial manager in the FHWA Texas Division since November 1999. She is the key financial advisor in the division office and is responsible for providing financial oversight for the second-largest Federal-aid program in the country. She provides information, advice, and assistance to the division, State, and local government entities on policies, regulations, and decisions on highway financing and innovative financing, including use of new leveraging tools such as public-private partnerships. Grosskopf has a bachelor's degree in elementary education from the University of New Mexico.

Jerry J. Jones is the commission auditor for the Michigan Department of Transportation's Office of Commission Audits in Lansing, Michigan. In this position since 1996, he is responsible for the overall direction of the Office of Commission Audits, which provides both internal and external audit services to the Michigan DOT. Jones has 31 years of government audit experience, 29 of which are with the Michigan DOT. He graduated from Ferris State University with a bachelor's degree in business with a major in accounting. He is a Certified Public Accountant, licensed to practice public accounting in Michigan. Jones is a member of the American Institute of Certified Public Accountants (AICPA) and the Michigan Association of Certified Public Accountants. He serves as vice chair of the AASHTO Administrative Subcommittee on Internal and External Audit.

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Carolyn (Carri) Rosti is the manager of the Office of Internal Review for the Idaho Transportation Department (ITD). She established the current audit program at ITD, resulting in a more customer-oriented review services function. The office performs information technology and process improvement reviews along with more traditional financial, compliance, and internal control audits. ITD is on the verge of expanding its Highway Program following passage of innovative financing legislation in the State. Rosti is a Certified Public Accountant and a Certified Government Financial Manager. She has a bachelor's degree in business and accounting from Oregon State University and has done course work for a master's in business administration at Boise State University. She is the AASHTO Audit Subcommittee secretary, past chair of the Peer Review Panel, past host of the annual AASHTO Audit Subcommittee conference, past president of the local chapter of AGA, past chair of the Idaho Fiscal Officers' Association, and a member of AICPA, the Institute of Internal Auditors, and the Northwest Intergovernmental Audit Forum.

Betsy Scott is the audit director for HNTB at the company headquarters in Kansas City, Missouri. She is responsible for oversight of the Federal Acquisition Regulation overhead for HNTB companies, for establishing policy and procedures, and for oversight and coordination of all audits conducted by governmental units, since 94 percent of all projects for the company are governmental in nature. She has been with HNTB for 39 years and has been involved in all aspects of accounting, implementing different systems during her tenure. She has been involved with government regulations since 1970. Scott graduated from the University of Missouri at Kansas City with a bachelor's degree in accounting. She is a licensed Certified Public Accountant in Missouri. She has served on the AASHTO/ACEC Audit Subcommittee for the past 7 years, working to resolve issues between the engineering industry and the government sector involving the standardizing of procedures used by the industry and the development of project costs. For the scanning study, Scott represented the American Council of Engineering Companies (ACEC).

Jimmy Shumock is chief executive officer of Thompson Engineering, Inc. and president and chief financial officer

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Amplifying Questions

Audit Stewardship

1. A study of audit practices prior to contract initiation to determine the following:
 - a. How are financial evaluations made to obtain the best outcome for funds invested?
 - b. How can the government receive the best value for the public?
 - c. How does the government determine whether or not the proposing company has the resources to perform the project?
 - d. How does the government evaluate proposal costs?
 - e. How does the government decide on the sale and valuation of state assets?
2. An investigation of innovative audit reporting methods used to advise agencies on the mitigation of risk in the event of project difficulties.

Audit Oversight

1. A study of audit practices during contract periods, which include the following:
 - a. Evaluation of work performed.
 - b. Project costing standards.
 - c. Distribution of profits from concessions.
 - d. Compliance with contract provisions.
 - e. Evaluation of overall price and quality of services received.
2. A study of audit practices after contract periods, which include the following:
 - a. Evaluation of work performed.
 - b. Project costing standards.
 - c. Distribution of profits from concessions.
 - d. Compliance with contract provisions.
 - e. Evaluation of overall price and quality of services received.



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Selected Definitions

availability payment. A concession, or shadow toll, paid by the government to a private contractor for providing a specified number of roadway lanes for a specific time period.

build-own-operate. A private contractor constructs and operates a facility while retaining ownership. The private sector is under no obligation to the government to purchase the facility or take title.

concession benefits. Rights to receive revenues and other benefits (often from tolling) for a fixed time period.

design-bid-build. The traditional project delivery method in which design and construction are sequential steps in the project development process.

design-build-contract. An agreement that provides for design and construction of improvements by a contractor or private developer. The term encompasses design-build-maintain, design-build-operate, design-build-finance, and other contracts that include services in addition to design and construction. Franchise and concession agreements are included in the term if they provide for the franchisee or concessionaire to develop the project that is the subject of the agreement.

developer financing. A type of financing in which a private party finances the construction or expansion of a public facility in exchange for the right to build residential housing, commercial stores, and/or industrial facilities on the site. This type of financing often takes the form of capacity credits, impact fees, or exactions.

innovative contracting. Innovative contracting practices meant to improve the efficiency and quality of roadway construction, maintenance, or operation. Examples of innovative contracting include lane rental, the use of warranties, design-build, design-build-operate, and design-build-finance-operate-maintain.

innovative finance. Innovative methods of financing construction, maintenance, or operation of transportation facilities. The term covers a broad variety of nontraditional financing, including the use of private funds or the use of public funds in a new way.

internal rate of return (IRR) method. The discount rate

that, when applied to net revenues of a project, sets them equal to the initial investment. The preferred option is that with the IRR greatest in excess of a specified rate of return.

life cycle costs. The costs of a project over its entire life, from project inception to the end of a transportation facility's design life.

net present value (NPV) method. Revenues of a project are estimated, net of outgoings, and then are discounted and compared with the initial investment. The preferred option is that with the highest positive net present value.

oversight. The act of ensuring that the Federal-Aid Highway Program is delivered in a manner consistent with laws, regulations, and policies.

public-private partnership (PPP). A contractual agreement formed between public and private sector partners that allows more private sector participation than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will be given additional decision rights in determining how the project or task will be completed. The term public-private partnership defines an expansive set of relationships from relatively simple contracts to development agreements that can be very complicated and technical (e.g., design-build-finance-operate-maintain). In the context of this report, the term public-private-partnership is used for any scenario under which the private sector would be more of a partner than it is under the traditional method of procurement. Further, the broad definition used for public-private partnerships includes many elements applied fairly regularly on appropriate projects.

shadow toll. Per-vehicle amount paid to a facility operator by a third party, such as a sponsoring governmental entity. Shadow tolls are not paid by facility users. Shadow toll amounts paid to a facility operator vary by contract and are typically based on the type of vehicle and distance traveled.

toll credits. Credits earned when a State, toll authority, or private entity funds a capital highway investment with toll revenues from existing facilities. States may increase the use of available eligible Federal funding on a project up to the

normal State/local matching amount and debit the sum of the toll credits earned by that same amount.

tolling. The process of collecting revenue whereby road users are charged a fee per roadway use. Tolls may be collected on a flat-fee, time, or distance basis and may vary by type of vehicle.

warranty. When used in public-private partnerships for the construction of roads, a clause that guarantees that the roadway will meet a certain level of quality or repairs will be made at the private contractor's expense. Two types of warranties are used in highway construction: (1) materials and workmanship and (2) performance. Under the first type, the contractor is responsible only for defects caused by poor materials and workmanship. Under the latter, the contractor is responsible for the product meeting certain agreed-on performance thresholds, regardless of whether materials and workmanship met State standards.

Procurement Process Checklist

Procurement Process Checklist

PROJECT NAME: _____

Note: The Project Manager/Project Board/individual made responsible for the procurement of this project must obtain the Accountable Officer's approval for their Project Specific Procurement Process Checklist once Sanctioning Authority approval to proceed and procure the project as a PPP, has been obtained.

The attached Procurement Process Checklist has been compiled by the Project Manager to reflect the specific needs of the project and approved for use by the Accountable Officer.

To be completed by the Project Manager/
Individual responsible for the Project:

Name: _____ (Block Capitals)

Signature: _____

Date: _____

To be completed by the Accountable Officer:

Name: _____ (Block Capitals)

Signature: _____

Date: _____

The steps outlined below are not in Chronological order

Main Requirement	Further Detail	Completed	Not Required	Not Completed
Preliminary Appraisal —as per the Capital Appraisal Guidelines	Needs analysis			
	Options Appraisal			
	Cost Benefit Analysis			
National Development Finance Agency	Advice of the National Development Finance Agency sought			
PPP Assessment	A document, following the guidelines, proposing the most suitable procurement approach			
Vires Assessment	Confirmation that the Sponsoring Agency has the statutory power or vires to enter into a PPP arrangement, e.g. is the Sponsoring Agency detailed in the Schedule to the State Authorities Public Private Partnerships Arrangements Act, 2002			
Stakeholder Consultation	Stakeholder consultation: As required by relevant guidelines			

continued

Procurement Process Checklist

Main Requirement	Further Detail	Completed	Not Required	Not Completed
Project Board	Nomination of the Project Board			
	Agreement of reporting relationships			
	Procurement Process Checklist agreed with Accountable Officer			
Legal Opinion	Any legal advice sought by the Project Board must be from a current member of either the Law Society of Ireland or The Honourable Society of Kings Inns or from another source of equal legal recognition and standing			
The identification and valuation of relevant State assets	In the context of the project, and within the role of the NDFA the identification and valuation of relevant State Assets			
Ground conditions survey	Record that any civil engineer engaged by the Project Board to carry out the survey holds a recognised degree in civil engineering, or is a chartered engineer, or possesses another qualification of equal recognition and standing			
	Ground conditions survey to be carried out by a civil engineer			
Procurement Procedure	Compliance with EU and National Procurement guidelines			
	Selection of Preferred bidder in accordance with the agreed Tender Evaluation Procedure			
Documentation provided to tenderers	Confirmation that the Project Board has put a system in place to ensure that all documentation issued by the Board, particularly to tenderers, is consistent.			
Tenderer Management and Evaluation Methodology agreed	The Project Board has agreed a methodology which identifies the approach and timeline for the development of the evaluation criteria; the equitable treatment of all tenderers and their queries; the management of conflict resolution and conflict of interest issues and facilitates feedback to the unsuccessful candidates.			

Main Requirement	Further Detail	Completed	Not Required	Not Completed
Public Sector Benchmark	Completion of the Public Sector Benchmark prior to seeking Expressions of Interest			
	Confirmation that the Public Sector Benchmark was not amended during the procurement process			
Affordability Cap	Affordability Cap received from Sanctioning Authority			
	Agreed Financial and Contract Close within the approved Affordability Cap			
Sanctioning Authority	Approval received to appoint client advisors and draft the Public Sector Benchmark			
	Approval of the Affordability Cap and to procure the project			
	Project Board has communicated any/all breaches or potential breaches of the Affordability Cap to the Sanctioning Authority			
Value for Money Comparison	Evaluation of the preferred tender against the PSB and the Affordability Cap			
Retention of Project related documents	Confirmation that the Project Manager / Project Board has put a system in place to ensure that all project related documentation is retained by the Sponsoring Agency.			
Adherence to Guidelines	Record adherence to Department of Finance PPP Guidance			
	Record adherence to Sectoral PPP Guidance			
	Record adherence to criteria identified in the documentation issued by the Project Board to the tenders			

To be completed by the Process Auditor prior to submission of the checklist to the Accountable Officer as part of the Pre-contract Award Report:

Name: _____ (Block Capitals)

Signature: _____

Date: _____



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