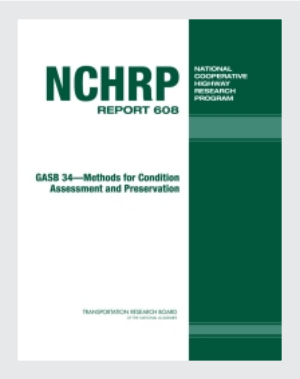

GASB 34--Methods for Condition Assessment and Preservation

DETAILS

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

NCHRP REPORT 608

GASB 34—Methods for Condition Assessment and Preservation

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Subject Areas
Planning and Administration

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FOREWORD

By Gwen Chisholm Smith
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NCHRP Report 608: GASB—Methods for Condition Assessment and Preservation updates the findings contained in *NCHRP Report 522*: *A Review of DOT Compliance with GASB 34 Requirements*. *NCHRP Report 522* provided a comprehensive look at approaches taken by AASHTO member departments to comply with the requirements of Governmental Accounting Standards Board (GASB) Statement No. 34. *NCHRP Report 608* provides a recommended practices guide that identifies effective methodologies that integrate infrastructure inventory, condition assessments, minimum acceptable condition levels, and funding decisions with GASB 34 reporting requirements and assesses the operational and financial impacts of reporting under GASB 34. This report will be helpful to professionals who work with state DOTs and local governments in the areas of finance, auditing, asset management, and policymaking.

NCHRP Report 522 documents how the requirements set by GASB 34 were addressed and catalogs the various approaches that were implemented in the first year. Findings in *NCHRP Report 522* revealed that additional, more detailed research was needed to answer some fundamental questions including, what are the most effective methods for condition assessments for GASB 34 reporting and asset management and how are the variability and the reliability of condition assessment methods used in estimating expenditures for GASB 34 reporting? *NCHRP Report 608* builds on the results of NCHRP *Report 522*.

PB Strategic Consulting, in conjunction with Edward P. Chait, and Cambridge Systematics, Inc., conducted the research for NCHRP Project 19-07. To achieve the project's objective of assessing the operational and financial impacts of reporting under GASB 34, the research team performed a literature review and conducted a series of workshops and interviews with representative transportation agencies, and other organizations that use effective methodologies for infrastructure inventory, condition assessments, minimum acceptable condition levels, funding decisions, and GASB 34 reporting requirements.

NCHRP Report 608 documents the following: (a) the most effective methods for condition assessments for GASB 34 reporting and asset management; (b) the variability and the reliability of condition assessment methods used in estimating expenditures for GASB 34 reporting; (c) the preferred methodologies used to develop minimum acceptable condition levels and the differences between the levels set for GASB 34 reporting and asset management; (d) effective methods that are used to estimate expenditures required to meet the minimum acceptable condition level; (e) a description of how agencies define and track capitalization costs and preservation expenses; (f) effective approaches used to account for additions, retirements, and replacements of infrastructure assets in financial statements; (g) a review of the effect of bond ratings and factors that are important in the bond rating agencies' review; and (h) the operational and financial impacts of reporting under GASB 34.

The report includes a summary of the key findings from the workshops organized by key questions. Also in the report are the results from a peer exchange conference among the workshop participants and a Recommended Practices Guide.

CONTENTS

SUMMARY

GASB 34—Methods for Condition Assessment and Preservation

This document is the final report for NCHRP Program Project 19-07, "GASB 34—Methods for Condition Assessment and Preservation." The underlying premise of this project is that good asset management coupled with meaningful financial reporting is essential for efficiently and effectively maintaining the nation's infrastructure. Examining the methodologies that integrate infrastructure inventory, condition assessments, minimum acceptable condition levels, and funding decisions with Government Accounting Standards Board Statement No. 34 (GASB 34) infrastructure reporting requirements and assessing the operational and financial impacts of reporting under GASB 34 (1) can lead to improved practices on the integration of asset management data into the financial statement reporting process and (2) may help achieve better operational and financial results.

This report updates the findings contained in *NCHRP Report 522: A Review of DOT Compliance with GASB 34* Requirements. That project examined the response of the State DOTs to GASB 34 during its initial year of effectiveness. At that point, procedures were still being developed and refined to allow the State DOTs to comply with the new requirements in a timely and cost-effective manner. A key aspect of the new procedures for agencies utilizing the modified approach (described later in this report) was the need for greater integration of infrastructure asset management and financial reporting. There was widespread interest among the State DOTs to learn more about the approaches utilized by others to accomplish this.

Four years later we find that compliance procedures have been largely established and that the preparation of necessary information on asset condition and preservation for the Comprehensive Annual Financial Report (CAFR) is performed on a routine basis as just one more administrative task. We also find that the agencies report that they receive very little interest in this information from outside entities such as legislative bodies, the investment community or the general public. It was widely hoped that provision of this information would spark interest in the condition and preservation of infrastructure assets—the factors that seem to have precluded interest are discussed in this report.

Notwithstanding the general lack of outside interest in asset condition and preservation information, we did observe in this research that the degree of integration of infrastructure asset management and financial reporting is a key aspect of asset management best practice. Where this integration exists to a high degree, the application of asset management policies and procedures collectively and consistently is a passion for those involved, which in turn positively influences good and sophisticated infrastructure asset management. Of course, the terms "good" and "sophisticated" are subjective, as defined by the opinions of the asset managers who participated in the Task 6 workshops. While claims of good and sophisticated infrastructure asset management may be reported where infrastructure management and

financial reporting are not highly integrated, our research suggests that such assertions do not stand up well to scrutiny.

It is important to note that GASB 34 was created to address financial reporting only; GASB never intended that its accounting standards would determine asset management policies and procedures. Nevertheless, GASB would have to be a key player in the consideration of any further integration of financial reporting with good asset management because certain requirements of GASB 34 identified in this report continue to be problematic from an operational perspective. Unfortunately, the probability of such GASB involvement in the near future appears to be remote because of other priorities.

As is well known among agencies with responsibility for infrastructure, these assets deteriorate over time. Good asset management addresses preservation plans to prevent this deterioration. Financial reporting addresses the accounting for such deterioration. It seems logical to many who participated in the workshops that the integration of asset management and financial reporting with such very similar objectives should be a goal of both asset and financial managers.

Various public interest groups such as AASHTO, APWA and GASB should continue to work together to address the issues identified in this report. The objective should be to refine asset management and financial reporting practices and procedures so as to achieve greater integration and support a more effective and efficient preservation of the nation's infrastructure.

CHAPTER 1

Background

This final report for NCHRP Project 19-07, "GASB 34—Methods for Condition Assessment and Preservation" documents our research findings and the methodology employed to obtain these findings. It includes the results of the work performed under Phase I (Tasks 1–5) as presented in the Interim Report on this project dated July 1, 2005 as revised on October 25, 2005. Tasks 1–5 included the following:

- Literature review and telephone surveys to identify background information.
- Review of NCHRP 20-60, "Performance Measures and Targets for Transportation Asset Management" to identify linkages between the two projects.
- Review of *NCHRP Report 522: A Review of State DOT Compliance with GASB 34 Requirements* to establish the context for this project.
- Identification of candidate organizations with which to conduct workshops for a more in-depth analysis of condition assessment and preservation practices related to GASB 34.
- Preparation of a detailed work plan for the fulfillment of Phase II (Tasks 6–8) of the research project.
- Preparation of an Interim Report documenting these activities (see Appendix A for this report).

The majority of project research was conducted in Phase II and these activities are described in the following pages. This description is organized as follows:

- Description of the procedures utilized to identify the organizations with which to conduct the Task 6 workshops.
- Summary of key findings from the workshops organized in two ways—by key question and by organization.
- Individual reports for the ten workshops.
- Results of a peer exchange conference call among all ten workshop participants.
- Recommended Practices Guide recommending approaches to dealing with each of the key questions and including a glossary (Task 7).

As specified in Task 8, this final report is accompanied by a PowerPoint presentation summarizing the findings.

The Selection of Workshop Interview Organizations

Based on information obtained in Tasks 1 and 2, the PB Team identified initial candidate organizations for more in-depth analyses by interview and workshop. In developing the candidate list, PB drew from a universe of representative transportation agencies, local governments, professional associations, public works utilities, private industry, universities, and other organizations that use effective methodologies for infrastructure inventory, condition assessments, minimum acceptable condition levels, funding decisions and GASB 34 reporting requirements. The PB Team proposed

bond rating agencies as candidate organizations for further analysis in consideration of anecdotal assertions made during our earlier research (Project 19-04) that compliance with the modified approach of GASB 34 might have a positive impact on bond ratings. Fitch, in particular, has published articles or similar documents describing their views on Statement 34.

In selecting the candidate organizations, the PB Team took into account the need to balance a breadth of approaches versus depth of review. As such, some of the organizations that were identified appeared to have exhibited the most innovative and thorough approaches to comply with GASB 34 requirements, particularly with respect to the reporting of infrastructure values. At the same time, the PB Team chose to identify other organizations with a diversity of approaches (e.g., to ensure that both the modified approach and the depreciation approach were represented in the current research). In addition, the identified organizations developed particularly interesting or promising approaches to dealing with the various challenges identified in Project 19-04.

A list of 20 identified organizations was forwarded to the NCHRP Project 19-07 review panel, including the rationale for their selection. The nominations were reviewed with the panel at the October 12, 2006 meeting. The following organizations were selected:

State DOTs	Florida, Ohio, Texas, Washington, and Colorado (alternates—Ontario, New Mexico, Iowa, Michigan, and Oregon)
Local Governments	Hillsborough County (FL), Water Works & Sanitary Sewer Board (Montgomery, AL) [alternates—Saco (ME) and Portland (OR)].
Other	Fitch, Macquarie Infrastructure Group, and GASB (alternate—Aqua America).

As anticipated, there were scheduling conflicts and other difficulties with some of the primary organizations and, accordingly, selected alternate organizations were contacted. The State of Oregon, the City of Saco, ME, and the Washington (D.C.) Suburban Sanitary Commission were selected as alternatives for the State of Colorado, the Water Works & Sanitary Sewer Board (Montgomery, AL), and the Macquarie Infrastructure Group.

Workshop Questionnaire

The questionnaires used in the interviews were designed to be workshop guides; and as such, the intent of each questionnaire was (1) to provide agencies with a summary of the Team's approach toward the workshop and (2) to serve as a general script to make certain the Team stays on point

Table 1. Organizations interviewed.

Type	Name	Modified Versus Depreciation Approach
State DOTs	Florida	Modified Approach
	Ohio	Modified Approach
	Oregon	Depreciation Approach
	Texas	Modified & Depreciation Approaches
	Washington	Modified Approach
Others	Fitch Ratings	Not Applicable
	Governmental Accounting Standards Board (GASB)	Not Applicable
	Hillsborough County (FL)	Modified Approach
	City of Saco (ME)	Modified Approach
	Washington Suburban Sanitary Commission (MD)	Depreciation Approach

during the workshops. A tailored questionnaire for each workshop was designed via: (1) review of recent respective Comprehensive Annual Financial Reports (CAFR), (2) the review of selected documents describing agency programs and management information systems, and (3) prior telephone interviews with key organization personnel. Based on responses to the questionnaire, the PB Team further explored issues that arose. As agreed to by the review panel, the questionnaire addressed a wide range of GASB 34 implementation issues identified in the earlier research, Project 19-04, which included the following:

(1) A process for setting condition targets.
(2) Methods of condition assessment.
(3) Linkage between condition targets and expenditure requirements, including budgetary requirements.
(4) Allocation of costs among capital, preservation, and maintenance categories.
(5) Accounting for additions, retirements, and replacements of infrastructure assets.
(6) Potential effects on bond rating.
(7) Operational and financial impacts of reporting.

Workshop Interviews

The PB Team conducted workshops with the aforementioned organizations. (See Table 1.) This design encouraged increased interaction between the PB Team and relevant agency officials. At least 2 weeks prior to the workshop, a tailored agenda and a customized agency specific questionnaire were sent to each organization to provide a reasonable opportunity for its representatives to consider the topics and to prepare for the discussion. Using the tailored agenda and questionnaire, the PB Team convened a full or nearly full day workshop during which work groups from the various departments (such as Pavement, Bridge, Maintenance, and Finance) were interviewed.

CHAPTER 2

Key Findings

This section provides a summary of the overall key findings, as well as workshop-specific key findings.

Overall Key Findings

The content of the workshops was structured around the key questions identified in the October 25, 2005 Interim Report. The responses are summarized in Table 2:

Table 2. Overall key findings.

Area Designated for Follow-up Workshop Research	Prior Report Basis for Further Research	Overview Questions for Follow-up Investigation	Significant Overall Workshop Findings
Determination of condition targets	• For modified approach states, the calculation of meaningful condition targets was a key step in the process of adopting GASB 34, and a variety of methods were employed. • Specific condition targets were typically adopted for the two principal asset classes, roads, and bridges. • Fiscal constraint was an important aspect in determining these targets in order to ensure that they were realistic.	• What are the preferred methodologies used to develop minimum acceptable condition targets? • How can differences between the levels set for GASB 34 reporting and asset management be reconciled?	• In a few cases, legislators are involved. Where they are involved, asset management gets more attention. A noteworthy example was Florida where the specific targets were in state statute. • Performance targets often drive budget requests. In other cases, budget constraints drive the targets. In most cases, it seems that the drivers work in both directions in a reciprocal relationship. • In one instance (Ohio DOT), there is a linkage between achievement of condition targets and manager performance evaluations, which promotes placing a high priority on achieving the targets.

Table 2. (Continued).

Area Designated for Follow-up Workshop Research	Prior Report Basis for Further Research	Overview Questions for Follow-up Investigation	Significant Overall Workshop Findings
			• In a few cases (Ohio and Texas), different targets were set for GASB 34 reporting and asset management purposes. The GASB 34 targets were less aggressive because these agencies wanted to ensure meeting the targets. However, most DOTs report identical targets for asset management and GASB 34 financial reporting purposes.
Methods of condition assessment	• While agencies may use differing methods of collecting and compiling condition information and arriving at condition conclusions, they are using "industry-accepted" methods that they have implemented over the long term, and are conducting condition assessments on a regular basis, generally more frequently than GASB mandated schedules. • No agency indicated a problem with completing timely condition assessments for GASB reporting purposes or with compiling and processing condition information in order to develop plans, budgets or priorities.	• What are the most effective methods for condition assessments for GASB 34 reporting and asset management?	• Frequent inspections with high sample sizes were the norm. • Most DOTs use a mixture of central and district personnel for assessments. • Not all infrastructure assets that are reported in the financial statements are in fact assessed; usually the major ones (pavements and bridges) are. • Many agencies are moving to greater reliance on automation in condition assessments (e.g., use of van-mounted lasers to collect profile data for pavements), due to accuracy and safety considerations.
Estimated cost to achieve targets	• Linking targeted conditions to required expenditures was problematic for the modified approach states. The principal difficulties were the following: • The management information systems, as then deployed, were not mature enough to generate	• How are the variability and the reliability of condition assessment methods used in estimating expenditures for GASB 34 reporting? • What is the potential for the development of capital use charge to be used in lieu of preservation costs?	• This calculation continues to be a point of difficulty for most agencies. This is due in part to the "apples and oranges" nature of the GASB 34-required comparison: a management system-generated project oriented forecast unconstrained by fiscal year vs. actual FY

(continued on next page)

Table 2. (Continued).

Area Designated for Follow-up Workshop Research	Prior Report Basis for Further Research	Overview Questions for Follow-up Investigation	Significant Overall Workshop Findings
	reliable expenditure estimates requiring manual calculations, and • The cost definitions contained in GASB 34 were not compatible with the DOTs' budget practices and management systems		expenditures from the financial reporting system. This has led many agencies to simply report the budget. • Several DOTs made the point that they view the comparison between planned and actual expenditures as much less important than the comparison between targeted and actual conditions. • The time lag between the period in which preservation expenditures are made and the period in which the effect of those expenditures are realized contributes to the difficulties of the calculation of the estimate. No specific methodology for dealing with this difficulty was noted. • Nothing was reported that would suggest asset management systems have matured to the point where the practical development of a capital use charge could be imminent
• **Categorization of costs**	• The GASB 34 guidelines used a functional approach to these categories—maintenance costs achieve the original design life, preservation costs extend that design life but do not increase capacity or service, capital costs increase capacity or service. • The traditional DOT definitions related more to type of construction—a full construction project was viewed as capital whether or not lanes	• How do agencies define and track capitalization costs and preservation expenses? • Are these methods meeting the intent of GASB 34 reporting?	• Most agencies continue to define projects as either capital or preservation/maintenance and all project expenditures are categorized accordingly. However, a growing trend is that expenditures for a particular project may be manually allocated between capital and preservation/maintenance based on work codes within the project (e.g., at Florida DOT, "add lanes, reconstruct and rehabilitate" projects are prorated).

Table 2. (Continued).

Area Designated for Follow-up Workshop Research	Prior Report Basis for Further Research	Overview Questions for Follow-up Investigation	Significant Overall Workshop Findings
	are added; a resurfacing project was viewed as preservation whether or not there are ancillary safety benefits. • A potential solution was to allocate costs within a project to the three categories, but this was strongly resisted as impractical by most DOTs who typically must account for hundreds, if not thousands, of projects each year. • The conflict between traditional and GASB 34 categories was particularly pronounced for the division of capital and preservation. This discrepancy was less significant for depreciation approach states since those states capitalize both categories.		• One state (Texas) refined the categorization of costs in order to demonstrate that a significant portion of its capital program was, in fact, dedicated to preservation activity. This refinement was helpful in budgetary discussions with legislators—it demonstrated that these activities were not discretionary, but rather were required to preserve the existing system. • Agencies were concerned that not capitalizing preservation costs meant that they were not receiving credit for replacing structures. • Fitch noted that the replacement of structures is often financed through the issuance of debt and there is an issue with not reflecting this expenditure in an agency's balance sheet. • See related commentary pertaining to replacement accounting under *additions and retirements below.*
• **Additions and retirements**	• The reporting of additions to and retirements of infrastructure assets for the first time in the financial statements was troublesome for many DOTs. • Although DOTs typically track such	• What are the effective approaches used to account for additions, retirements, and replacements of infrastructure assets in financial statements?	• Following the initial year of GASB 34 implementation, this activity no longer poses a difficulty for most agencies. • Virtually everyone who participated in the workshops agreed that replacement accounting for

(continued on next page)

Table 2. (Continued).

Area Designated for Follow-up Workshop Research	Prior Report Basis for Further Research	Overview Questions for Follow-up Investigation	Significant Overall Workshop Findings
	changes in physical assets through management programs and other inventory records, a linkage to costs recorded in the accounting system typically did not exist. • Many states found it necessary to initially accomplish this linkage manually and with other ad hoc methods.		modified approach governments as suggested by GASB is illogical in that the value of the new asset is not reported.
• **Bond raters interest**	• Of particular interest were several anecdotal reports from local governments that they had received improved bond ratings after preparing FY02 financial statements in accordance with GASB 34's modified approach. • The bond rating agencies don't officially disclose the reasons for rating adjustments, but the governments involved seemed convinced that the modified approach was responsible. • The DOTs used the Management Discussion & Analysis and Required Supplementary Information to disclose that they were effectively preserving their infrastructure and thereby were not accumulating unfunded liabilities for future generations to address. • They reported that the rating agencies were favorably impressed by this analysis and adjusted ratings accordingly.	• How have bond ratings been affected and what factors are important in the bond rating agencies' review?	• The one rating agency indicated there was no such impact. Once trend data is available, they plan to revisit their position primarily to evaluate the data. Potentially, this is of interest to them. • The most important factor in the raters' assessment is the underlying economics of the agency's revenue and cost structure. A secondary consideration is how well the system is being managed. The raters already had sufficient information to make that judgment, so the additional reporting in the RSI required by GASB 34 did not appear to have an effect.

Table 2. (Continued).

Area Designated for Follow-up Workshop Research	Prior Report Basis for Further Research	Overview Questions for Follow-up Investigation	Significant Overall Workshop Findings
• **Usefulness of/interest in information**	• There was general agreement among the interviewed DOTs that the information generated in the GASB 34 exercise was potentially useful in budgeting and resource allocation, particularly the information included in Required Supplementary Information for the modified approach states. • All reported in FY02 that the benefit remained a potential and was not realized. The new information generated virtually no interest or inquiries outside the agencies. • One DOT observed that this is just the first year of implementation. It is expected that general interest will increase as the accuracy of the information improves and as a time series of validated data becomes available and trends can be observed.	• What are the operational and financial impacts of reporting under GASB 34? • How have DOTs used GASB 34 reporting requirements to improve asset management practices and optimize transportation infrastructure performance?	• Some local government DPWs (as opposed to State DOTs) appear to be able to better relate operational and financial reporting aspects partly because they are better able to get their arms around asset management due to their size. • Only one government interviewed (local) was driven to better asset management by GASB 34. • Trend data of a sufficient duration is just now becoming available to agencies; this may spur greater interest in the results. • Modified approach agencies reported that the preparation of necessary information generated significant interaction between asset managers and financial units and this was one of the most valuable aspects of the exercise. This degree of interaction was noticeably reduced for depreciation approach agencies. • Where a passion for asset management does not exist, little progress will be made from a GASB 34 perspective.

When Is Preservation Not Really Preservation?

During the workshops the PB Team heard universal concern about one provision of the GASB 34 Modified Approach, particularly as it has been interpreted by subsequent GASB guidance. The provision in question is best stated at QA 7.17.5 in the 2006 GASB Comprehensive Implementation Guide (CIG) as follows:

> Question—A government accounts for its bridge network using the modified approach. A typical practice for major rehabilitation of some bridges is to build a comparable new bridge (for example, same number of lanes and

original weight loads) alongside the old bridge and to tear down the old bridge. Should the government remove the cost of the old bridge from its asset base and capitalize the cost of the new bridge?

Answer—No. Because the new bridge is comparable in capacity and efficiency, the entire cost of building the *new* bridge and tearing down the old bridge would be considered a preservation cost and would be expensed. The service utility of the bridge within the bridge network—providing passage over an obstacle, such as a river or a road—is being preserved through these efforts. If the new bridge had increased capacity or efficiency of the bridge network, the portion of the cost of the new bridge associated with the increased capacity or efficiency would have been capitalized.

The concerns that workshop participants expressed about this provision apply to all infrastructure, not just bridges, and the concerns are summarized in the four points below:

- *Replacements of infrastructure assets with entirely new infrastructure assets are often funded by debt. To present the cost of such replacement as preservation expense could be misleading.* Bondholder acquisitions of such debt are based on the expectation that the bond proceeds will be used to construct new infrastructure assets and that is what they would expect to see reported in the financial statements. A result of reporting such construction costs as preservation expense is to report the liability for the bonds in current dollars while continuing to report the related infrastructure assets in dollars that existed decades ago when the replaced assets originally were constructed. The reporting of replaced infrastructure assets in this manner not only presents a mismatch of information, it also is contrary to the reality of the transaction.
- *Capitalizing replacement costs need not result in double-counting of the asset value.* A reported objection to capitalizing replacement costs is that this represents double counting—the agency reports the full un-depreciated value of the original investment and would add to that number the new investment. However, that original investment will typically represent only a tiny percentage of the new investment, a few cents on the dollar. Going forward, that original investment value will become an increasingly unrepresentative number, causing modified approach agencies to significantly understate the true value of their infrastructure. Reporting the new value and subtracting the original investment would be a more accurate approach.
- *Capitalizing replacement costs is consistent with asset management principles.* Asset management is oriented to applying a lowest life cycle approach over the life of an asset and the expenditures required for this activity are properly classified as maintenance and preservation and, as such, are not capitalized. However, when this asset is retired and replaced with an entirely new asset (typically through a major construction contract), the expenditure represents a different kind of cost. At that point, the retired asset no longer provides service capacity; therefore, the expenditure is no longer for preservation.
- *Replacing an infrastructure asset with an entirely new infrastructure asset "substantively" qualifies the replaced asset as "impaired" as discussed in GASB 42, "Accounting and Financial Reporting for Impairment of Capital Assets and for Insurance Recoveries."* While GASB 42 specifically states its provisions are not applicable to infrastructure assets reported on the modified approach, such non-applicability is unrealistic because it is contrary to how infrastructure assets are managed and financed. This view holds that at the time the replaced infrastructure assets were originally constructed it was expected that the government's preservation program would maintain the assets to its planned service utility indefinitely, not infinitely. When a subsequent decision is made to replace rather than to preserve those infrastructure assets, facts and circumstances have changed so that continued preservation is deemed to be ineffective. Therefore, such replacement is substantively the same as a capital impairment identified from a change in manner or duration of use as discussed in paragraph 15 of GASB 42 and the impaired (retired) asset should be written off. Said another way, the new asset represents a new resource, but not new service capacity.

Workshop-Specific Key Findings

Florida DOT

Florida DOT (FDOT) uses a Modified Approach, which was in place prior to GASB 34. The following findings from the workshop were deemed to be particularly noteworthy:

- Performance measures included in the Florida Statutes—FDOT has been using performance measures since 1989. During the 2000 Legislative session, specific performance targets were added to Section 334.046, Florida Statutes, as Departmental "goals." Specifically, Section 4(a) of the Statute defines preservation as protection of the state's transportation infrastructure investment, whereby (1) ensuring that 80% of the pavement on the State Highway System meets department standards; (2) ensuring 90% of department-maintained bridges meet department standards; and (3) ensuring that the department achieves 100% of the acceptable maintenance standard on the state highway system. As a result, FDOT must include these goals while building its work program—which is the basis for the annual budget. Therefore, these goals drive the Department's budget, which is evidenced by goals being part of the annual appropriations bill (the DOT's budget) passed by the Legislature. These are the same targets reported by the State in their required supplementary information under the GASB 34 modified approach.
- Allocation of costs among capital, preservation, and maintenance—FDOT uses codes within the Financial Reporting system to determine the nature of the work being performed (i.e., it enables FDOT to expense preservation and maintenance activities and capitalize new construction and construction that adds traffic flow). For projects that have both capital and preservation, FDOT allocates costs by the respective work mix codes. These work mix codes are "add lanes and reconstruct" and "add lanes and rehabilitate." FDOT manually prorates the costs for these two work mixes, based on the number of lanes being added versus maintained. This pro-ration is consistent with the requirements of GASB 34.

Ohio DOT

Ohio DOT utilizes a Modified Approach based upon a strong asset management system that was in place prior to GASB 34. The following findings from the workshop were deemed to be particularly noteworthy:

- Linkage between personnel performance reviews and achievement of condition targets—Ohio DOT is unique to other transportation agencies in that it links manager performance evaluations to system condition results. This added accountability has elevated the importance of timely and accurate condition reporting throughout the agency, and has been a catalyst for managers (and their staff) to achieve the set condition targets.
- Two sets of targets—The targets set for the GASB 34 financial statements are less restrictive than standards used internally for budgeting and performance measurement (i.e., the GASB 34 thresholds are less demanding than the internal asset management thresholds). Ohio DOT sets a less restrictive GASB target for fear of not achieving it, which would compel it to revert back to using a depreciation approach. The State Auditor was concerned about this possibility so a buffer zone was established between the managed levels of performance and the absolute threshold for GASB 34. Currently, the financial statement thresholds are to allow no more than 25% of the priority system pavement inventory to be assessed below a 65 Pavement Condition Rating (PCR). Similarly, no more than 25% of the general system inventory should be assessed below a 55 PCR. The internal management standard is to sustain a level of performance where no less than 10% of the pavements are deficient, as compared with the GASB threshold of 25%. In terms of bridges, the GASB 34 requirement is to permit no more than 15% of bridges to be rated below a 5 for general appraisal rating based upon square feet of

bridge deck. The internal management goal is to maintain structures at a level with less than 4% general appraisal deficiencies.

Ohio DOT's PCR are based on annual visual observations of several types of pavement distresses. These visible distresses include cracking, rutting and other forms of surface deterioration. Based upon the severity and extent of each of the distresses, deductions are assessed from a perfect rating of 100. The pavement condition bands are Very Good (90–100), Good (75–90), Fair (65–75), Fair to Poor (55–65), Poor (40–55), Very Poor (0–40).

For bridges, Ohio DOT rates the condition annually and evaluates these conditions in four main categories: general appraisal, floor condition, wearing surface and paint condition.

- General Appraisal—a composite measure of the major structural items of a bridge, such as piers and abutments. Bridges are considered deficient when this rating drops to 4 or below on a scale of 0 to 9 (the higher the number the better).
- Floor Conditions—ratings measure the major horizontal structural element which carries the riding surface. Bridges are deemed deficient when the floor rating is 3 or 4 on a scale of 1 to 4 (the lower the number the better).
- Wearing Surface—ratings measure the driving surface of a bridge. Bridges are considered deficient when the wearing surface is evaluated at 3 or 4 on a scale of 1 to 4 (the lower the number the better).
- Paint Conditions—ratings measure the corrosion protection applied to the structural steel. Bridges are considered deficient when this rating drops to 4 or below on a scale of 0 to 9 (the higher the number the better).

The bridge rating scales use either a 4 point scale: Good (1), Fair (2), Poor (3), Critical (4) or a 10 point scale: Excellent (9), Very Good (8), Good (7), Satisfactory (6), Fair (5), Poor (4), Serious (3), Critical (2), Imminent Failure (1), Failed (0).

- Ohio DOT is concerned that by not capitalizing preservation expenditures, as required under the Modified Approach, it is not getting credit for replacing structures. New structures are considerably more valuable than what was replaced, but are being carried on the books at the original cost.
- Linkage between estimated and actual expenditures—Estimated and actual expenditures are both calculated at the end of the year. Despite both "estimates" and "actuals" being assessed together at the end of the year, there is a significant variation between the two. The Department's focus on the linkage between condition targets and required expenditures is on a long term basis for budgetary purposes, rather than as part of the annual financial reporting exercise. Ohio DOT questions the value of comparing estimated and actual expenditures on an annual basis.

Oregon DOT

Oregon DOT has elected to depreciate infrastructure assets rather than to use the "modified approach," which would report preservation costs under a qualified asset management system. The following findings from the workshop were deemed to be particularly noteworthy:

- Oregon DOT elected to use the depreciation approach because it felt that its asset management system was not sufficiently robust to generate the analysis required. However, it is now moving to develop an asset management system. As a first step, Oregon DOT is developing a web-based application to catalog and assess the condition of culverts. Due to the sheer volume (approximately 40,000), the department is only focusing on side culverts. This process is likely to take 7 years to complete. In addition, the department is also in the process of developing a rating system, based on a weighted averaging method. Once the asset management system for culverts is in place, Oregon DOT plans to expand the system to include other infrastructure

(pavements, bridges, etc.). When this comprehensive asset management system is developed, Oregon DOT may implement the modified approach of GASB 34.
- Lack of internal communication—There appears to be a "compartmentalization effect" with the various departments (i.e., pavement, bridge, culvert, and finance departments seem to be isolated from each other, so there appears to be a lack of communication between the various departments). For example, staff from the different departments met each other for the very first time during the workshop. On the contrary, those DOTs which adapted the GASB 34 modified approach cite enhanced communication as a beneficial side effect of GASB 34 (e.g., Florida DOT, Ohio DOT, Texas DOT, and Washington DOT). This suggests that a closer relationship between financial reporting and what actually occurs in asset management exists in the DOTs that follow the modified approach.

Texas DOT

The following are some key findings from the workshop that were deemed noteworthy:

- Two sets of targets—Texas DOT (TxDOT) has two sets of goals, a statewide conservative one for GASB reporting purposes and aggressive goals for individual districts. Accordingly, individual district goals are not reported in financial statements prepared under the provisions of GASB 34.
- Refinement of reporting—Major projects that reconstructed or rehabilitated highway segment (preservation expenditures under GASB 34 definitions) were previously reported as capital expenditures in TxDOT's budget request to the legislature. This led to a legislative perception that a large portion of the TxDOT program was discretionary in nature rather than necessary to keep the existing system in a state of good repair. These projects are now reported as maintenance expenditures, which presents a truer picture to the legislature and also has the effect of more closely aligning with GASB definitions. In fact, in the FY2005 budget $1 billion was shifted from construction to preservation (i.e., maintenance) due to this change in definition. This facilitated legislative approval of TxDOT's budget request because the legislature had a better understanding of the true nature of the program.
- TxMAP—In 1999 the Texas Maintenance Assessment Program (TxMAP) was developed to document the condition of the highway system. Initially, due to the lack of historical data TxMAP established conservative condition goals, which were based on a pass/fail rating. After GASB 34 it has moved toward a numerical rating system ranging from 1 to 5, where 5 is "best." This procedure does incorporate a public rating system (i.e. measures of customer satisfaction are incorporated into the overall condition rating). Similar to highway and bridge, more aggressive condition targets are established at the district level for internal management purposes. The more conservative targets (which are used for GASB reporting) are not communicated to the Districts.
- The use of the depreciation approach—TxDOT continues to utilize the depreciation approach for reporting bridges despite using the modified approach for other asset classes. The DOT is in the process of developing the asset management capabilities of its bridge management system, and as such, may be able to shift to a modified approach for this asset class.

Washington DOT

Washington DOT (WSDOT) utilizes a Modified Approach based upon a strong asset management system that was in place prior to GASB 34. The following findings from the workshop were deemed to be particularly noteworthy:

- GASB 34 definitions—WSDOT's operational use of the term "Preservation" differs from that of GASB's; however, it has found ways to use codes in its Capital Program Management

System (CPMS) to distinguish preservation costs from capitalizable costs. Using the GASB 34 definition for Comprehensive Annual Financial Report (CAFR) reporting the DOT provides clear delineation of preservation costs that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized. Bridge replacements are considered capital costs—WSDOT estimates the bridge's historical cost, removes that cost from infrastructure value, and adds in the cost of the new bridge. Seismic retrofit costs are also capitalized.

- Maintenance Accountability Process (MAP)—WSDOT does not specifically report on the MAP activities in its Required Supplementary Information (RSI) (though they are considering doing so in the future). MAP is conducted in accordance with GASB 34 principles (i.e. targets are established, costs to achieve these targets are estimated and compared with the actual results).
- Other important aspects of Washington DOT's asset management program-
  - Compared with typical practice, Washington DOT applies a greater degree of emphasis on 'least life cycle cost' as opposed to "lowest initial cost" as a basis for pavement-preservation.
  - Pavement condition data dates back to 1969, which is probably one of the oldest such databases.
  - Predictive ability of WSDOT performance measures—up to 6 years with 'best' reliability up to 3 years.

Fitch Ratings

Fitch Ratings was interviewed since bond rating agencies are arguably the most important readers of the financial statements prepared in accordance with GASB 34. Fitch, in particular, published an article 6 years ago describing their views on Statement 34 (Richard Larkin et al., *Public Finance,* May 30, 2001). The following findings were deemed particularly noteworthy: Fitch has not formally incorporated GASB 34 in its rating process. Nevertheless, they offer the following observations in the article from 6 years ago and in the recent interview.

- Comparison of approaches—Compared with the depreciation approaches the modified approach may provide more pertinent information that could be used in the credit rating process. However, there is some apprehension toward the modified approach; primarily because its methodology enables practitioners to use qualitative judgments, which could potentially lead to misleading estimates.
- Standardization of approaches—A standardized approach of condition assessments would enable Fitch Ratings to evaluate and compare condition assessments across geographies. However, Fitch recognizes the great difficulties in achieving this.
- GASB definitions—Fitch sees potential merit in the idea suggested in many other workshops of revisiting some of the GASB definitions, particularly the definition of preservation costs with respect to replacement of infrastructure assets, such as bridges, with completely new infrastructure assets.
- Fitch has not used the RSI information as a basis for altering bond ratings; and their credit evaluation processes have not changed as a result of governments shifting towards a modified approach (i.e., from a credit rating perspective, GASB 34 has had no effect to date).

In Fitch's view, once a trend in infrastructure investment becomes apparent, and as the transparency, consistency and applicability of condition assessments and estimates of preservation cost improves, GASB 34 could become more useful to the rating process.

Governmental Accounting Standards Board (GASB)

Our visit with the GASB staff was intended to obtain reaction to the findings from other workshops of this project. We recognized that under GASB's procedures GASB staff would be unable to

express reactions or positions without full Board deliberation and due process. Accordingly, specific reactions or opinions of the GASB staff are limited in this report. However, GASB staff reviewed and discussed extensively the findings in this report, referring often to the specific requirements of GASB standards for conformity or non-conformity with the findings. Staff reported that currently GASB's project related to accounting for infrastructure is not included in its technical work plan as either a current or research project due to other urgent priorities. It is included as a potential future project, however it likely will not be moved to a current or research project in the plan in the near future. We encouraged staff to add the findings of this report to any future deliberations of accounting for infrastructure and emphasized the importance of integrating asset management and financial reporting.

Hillsborough County (Florida)

Hillsborough County utilizes a Modified Approach based on an asset management system that was in place prior to GASB 34. The following findings from the workshop were deemed particularly noteworthy:

- Budgets drive targets—Condition targets were set after GASB 34. However, budgetary considerations play a significant role in originally establishing these targets and continue to do so.
- An extensive asset management system—Hillsborough County maintains a comprehensive inventory of infrastructure assets. These assets include: traffic lane miles, miles of curb, miles of road shoulders, miles of markings, pavement legends, miles of dividers, miles of guard railings, railroad crossings, pedestrian crossings, speed humps, intersections, miles of sidewalks, miles of sidewalk handrails, million linear feet of culverts, driveways, "Americans with Disability Act" ramps, signs, culverts, pedestrian poles, box culverts, curb inlets, ditch bottom inlets, grate top inlets, storm water manholes, control structures, junction boxes, sea walls, storm water lift stations, and end treatment. Despite such a comprehensive inventory, only two types of infrastructure (i.e., Paved Roadway Lane miles and Other Infrastructure) are reported in the CAFR (i.e., the two types of infrastructure are not further distributed among additional categories).
- GASB 34 facilitated additional funding—Hillsborough County Asset Management System, which records the quantity, location, and condition of each infrastructure asset managed by the Public Works Department, was in place by 1997 (i.e. several years prior to GASB 34. Though GASB 34 was not the impetus, it did help the Public Works Department to obtain additional resources and support for the system).

City of Saco (Maine)

City of Saco utilizes the Modified Approach, which reports preservation costs under a qualified asset management system. The following findings were deemed particularly noteworthy:

- GASB definitions—The City of Saco closely adheres to GASB definitions for expenditure categories. Since Saco is a small city it may be easier to adapt to infrastructure requirements of GASB 34.
- According to Saco's finance director, agencies with limited number of assets such as the City of Saco (i.e., fewer pavement miles, fewer bridges, etc.) have an easier time of adapting to GASB 34 than larger agencies that have more assets.
- GASB facilitated additional funding—While not the only motivator, GASB 34 has enabled the City to obtain funding for a GIS tool (which is used for condition assessments and has an inbuilt GPS locator that is connected to a work order database) and an annual Public Survey (which is the primary input performance reporting).

- Performance reports—A Public Survey, which evaluates all City departments (finance, public works, fire, police, etc.) on criterions of service, is an integral part of the City's performance evaluation and is related to condition assessments. In fact the annual performance report, which includes condition assessments, is mostly based on these citizen survey results and it supports the continued use of the GASB 34 modified approach.

Washington Suburban Water Sanitary Commission (Maryland)

Setting Condition Targets and Conducting Condition Assessments—since WSSC utilizes the depreciation approach for compliance with GASB 34, it does not set condition targets or conduct condition assessments in the manner required under the modified approach. In general, there are no formalized performance requirements linked to financial statements or to budget requests for infrastructure replacement/preservation. While there is a formalized inspection program for dams and reservoirs, the program is not set in the context of GASB 34 requirements; rather it is set in the context of safety issues.

CHAPTER 3

Workshop Reports

FLORIDA DOT WORKSHOP

Workshop Date: March 16, 2006
Participants: **Joe Kowalski,** CPA, Deputy Comptroller, Office of Comptroller, General Accounting Office
Bert Wilkerson, CPA, Financial Reporting Administrator, Office of Comptroller, General Accounting Office
Steve Guy, Pavement Management Engineer, Pavement Management
Richard Kerr, Bridge Management Inspection Engineer, State Maintenance Office
Tim Allen, Maintenance Rating Program Manager, State Maintenance Office
James "Bo" Sanchez, FL Turnpike Enterprise, PBS&J

The following questions in each section were open-ended to encourage an exchange of ideas. During the workshop the PB Team expanded on each of the questions, as appropriate, to address specific issues.

Section A: Process for Setting Condition Targets

Question 1: *What process do you use to determine which condition targets (for example, maximum percent of bridges structurally deficient or pavement roughness index for a system) will be used for each asset class?*

Resurfacing Program
Response: Targets were established as an executive level decision in 1989 based on recommendations from a statewide committee of pavement engineers. Targets essentially reflected the conditions at that time.

Bridge Repair/Replacement Program
Response: On March 7, 2005, the Bridge Condition Performance Measures Task Team (comprised of FDOT employees) recommended the adoption of a new primary measure that provides an overall condition rating of excellent, good, fair, or poor for each bridge. The Team also recommended that the percentage and/or number of bridges that fall into each category (excellent, good, fair, and poor) should be reported each year providing an overall trend in bridge condition. Furthermore, the Task Team recommended the current secondary measure that reports the number of bridges "Meeting Standards" to become a primary measure. Finally, it was recommended that the two current primary bridge measures [i.e. (1) of the number of bridges that were planned to be repaired during the year, the number of bridges actually repaired (let to contract) during the year; and (2) of the number of bridges that were planned for replacement during the year, the number of bridges actually replaced (let to contract) during the year] should be changed to secondary measures.

Routine Maintenance Program
Response: When the 80% target was established (see question 2 for a description of this target), that was the approximate condition level of the State Highway System at that time. It was decided that FDOT would attempt to maintain the system at that level.

Of these, what is the preferred process?
Response: All of the processes described above are the preferred approach for the particular asset class.

Is this process used for both general asset management purposes and for reporting in the CAFR?
Response: The processes used for both general asset management purposes and for reporting in the CAFR are the same.

Question 2: *What Performance measures are used to express these targets?*

Resurfacing
Response: The percent of pavement with a pavement condition survey score > 6, based on scale of ride smoothness, pavement cracking and wheel path rutting, is the pavement performance measure.

The CAFR RSI indicates that the 0 to 10 pavement condition rating scales for these characteristics were set by a statewide committee and that the FDOT standard is 80% of the pavement in the highway system has a score of six in all three criteria. Could you tell us more about this statewide committee and the detailed characteristics of the scales that are scored (what specifically is to be measured with instruments or visually)? What factors were considered in setting the condition target of 80% for all three measurements?
Response: An ad-hoc statewide committee met in 1989 and consisted of District and Central Office representatives with knowledge, skills and experience that related to engineering and management of pavements in the Department. Their findings and recommendations were adopted into policy by upper management. Ride smoothness and wheel path rutting are measured with lasers in a vehicle traveling at highway speeds. Pavement cracking is measured through visual observation performed by experienced survey crews. When the 80% target was established, that was the approximate condition level of the State Highway System at that time. It was decided that we would attempt to maintain the system at that level. A RSI rating of below six is considered deficient.

Note 5 to the CAFR indicates that the target is "approved by the Florida legislature." How does the DOT get this approval—please describe procedures, considerations, debate, etc?
Response: The Department has been using the performance measures as targets for many years. During the 2000 Legislative session performance measures were added to Section 334.046, Florida Statutes, as Departmental "goals." Specifically, Section 4 (a) of the Statue defines preservation as protection of the state's transportation infrastructure investment, whereby (1) ensuring that 80% of the pavement on the State Highway System meets department standards; (2) ensuring 90% of department-maintained bridges meet department standards; and (3) ensuring that the department achieves 100% of the acceptable maintenance standard on the state highway system. As a result, the Department must include these goals while building its work program. The work program is the basis for the Department's annual budget. Therefore, these goals drive the Department's budget. This is also evidenced by the goals being part of the annual appropriations bill (the DOT's budget) passed by the Legislature. The Department reports on these goals via the long-range program plan. Each Florida State Agency is required by Section 216.013, Florida Statutes, to develop a long-range program plan on an annual basis. The plan is required to provide program measures, outcomes and standards to measure progress towards program objectives. The Depart-

ment's goals are considered program measures within the plan, and the plan is reviewed and approved by the Governor's Office.

Bridge Repair/Replacement
Response: Percent of bridges not needing repair or replacement.

Surveys using NBI standards. Could you provide us with detail about how you apply these standards to the survey of bridges your DOT is responsible for?
Response: These standards are applied through the Bridge Inspection Program as required by the National Bridge Inspection Standards. Reference the Bridge Inspectors Reference Manual. Available for download at: http://www.nhi.fhwa.dot.gov/crsmaterial.asp/courseno=FHWA-NHI-130055

What factors were considered in establishing a target that 90% of department maintained bridges are in excellent or good condition?
Response: The 90% target was established by the Sub-Group for Preservation of Current State Highway System. Bridges in excellent and good condition generally require minimal work to maintain their condition. This minimizes the amount of work required. Considerations for setting performance measures were (1) the current performance measure (the Department's objective, as presented in the Short-Range Component of the Florida Transportation Plan and statutory mandated, is 90%); (2) of the structures in Florida, off the State Highway System, 82.74% have a condition rating of either excellent or good; and (3) according to the Federal Highway Administration database, Florida has the second lowest percentage of deficient bridges in the country.

What factors were considered in establishing a target that less than 1% of department maintained bridges would be weight restricted?
Response: Weight restricted bridges restrict the mobility and aversely impact the traveling public. The Department believes that the number of weight-restricted bridges should be minimal to maximize mobility.

Note 5 to the CAFR indicates that the target is "approved by the Florida legislature." How does the DOT get this approval—please describe procedures, considerations, debate, etc. if different than for Resurfacing above.
Response: Same as resurfacing.

Routine Maintenance
Response: Overall maintenance rating program score > or = 80. Maintenance rating program consisting of five elements: roadway, roadside, vegetation/aesthetics, traffic services and drainage. A rating scale of 1 to 100 is maintained for each category and overall.

Kindly provide us with the detail of the rating scales and what factors were considered in arriving at a target of an overall maintenance rating of 80.
Response: Overall rating uses Facility Type ratings (L-O-M) and the Facility Type centerline miles to produce an overall rating. Centerline miles, as listed for each Facility Type, are extracted from the roadway characteristics inventory and exclude Bridge lengths and most Ramp lengths. The mileage is applied, as a weighted factor, to compensate for inequities in assigned Facility Type lengths. The rating for each Facility Type is multiplied by the assigned centerline miles to produce a weighted Facility Type mileage. The sum of the weighted miles is then divided by the sum of the assigned miles to produce an ALL FACILITY TYPES rating. Note that, both the 1 to 10 and the 1 to 100 factors are used to calculate individual Facility Type ratings.

Are there any measures of customer satisfaction with system performance?
Response: FDOT conducts annual customer surveys with Florida citizens, visitors, government officials and commercial drivers to gather ratings of the transportation system's safety

and efficiency. For the most recent survey (also known as the "Transportation Report Card"), from late 2004 to early 2005, over 6,000 FDOT customers responded to phone surveys and face-to-face questionnaires at rest areas. The survey focused specifically on the attributes of the State Highway System, which included the visibility of roadway signs and markings, construction zones, traffic flow, rest areas, airports and overall satisfaction with the transportation system. More than 76% were satisfied or very satisfied with the transportation system overall. Specifically, 85% were satisfied or very satisfied with rest areas and airports, 84% were satisfied or very satisfied with road signs and markings, 70% were satisfied or very satisfied with construction zones and 60% were satisfied or very satisfied with traffic flow. The efforts of FDOT are also highlighted by the annual Highway Report Card compiled by *Overdrive Magazine,* one of the leading industry publications for American commercial truck drivers. Interstate 75 through Florida was rated as the "Best Highway" in America by commercial drivers and the state ranked second behind Texas as having the best highways overall. Florida was also high in the category of best rest areas.

Question 3: *Has this preferred methodology changed since the implementation of GASB 34? If so, list the specific changes.*
Response: No. Condition ratings were in place long before GASB 34. Fortunately, they were sufficient to satisfy GASB 34 requirements.

Question 4: *Please describe any aspects of the approach used to set performance targets you consider to be unique to your agency or instrumental in the success of the approach?*
Response: (1) One of the primary missions of the DOT is System Preservation Measures set by Florida Statute (FS 334.046). This Statue is somewhat flexible because the calculation of the measures can be changed but targets remain the same; (2) 2025 Florida Transportation Plan—Long Term Goals and Objectives of Transportation in Florida; (3) Short-Range Component—which reviews the Short-Range Goals and Objectives included in the Florida Transportation Plan and reports on the status of achieving the objectives based on the Adopted Work Program; (4) Florida Transportation Commission, etc. oversight Sub-Group for Preservation of Current State Highway System; (5) Performance and Production Review of the DOT 2004/2005.

Question 5: *Which group within your agency is responsible for setting condition targets? Do they meet to review results and/or adjust targets? What is the chain for approving condition targets? Kindly discuss their participation in the statewide committee and legislative approval process discussed in question 2 above.*
Response: The broad condition targets were officially set and adopted within Section 334.046, Florida Statutes. However, the specific performance measures and components are periodically reviewed and refined (i.e., refinements are done on how the targets are calculated, which are set by the Statue.) A specific example is "Progress Report, Florida Transportation Commission Performance measures for FDOT, Sub-Group for Preservation of Current State Highway System," where Task teams were created to review the current performance measures and make recommendations as to whether changes should occur. In the Bridge Repair/Replacement Program, the FDOT standard has been changed to a secondary measure. The new measures as defined in the Report are as follows: 90% of all Departments maintained bridges are in excellent or good condition. Less than 1% of all Departments maintained bridges are weight restricted. There is also a proposed Florida Health Index which is defined as the number of Department maintained bridges in excellent or good condition—the number of weight restricted Department maintained bridges divided by the total number of Department maintained bridges times 100. The performance would be set at 90 for this performance measure. A bridge is defined as being in excellent or good condition if none of the major components (deck, superstructure, substructure or culvert) ratings is less than 6.

Pavements
Response: Pavement Management Office.

Bridges
Response: Maintenance Office.

Question 6: *How often does your agency set condition targets?*
Response: The condition targets were officially adopted within Section 334.046, Florida Statutes, as part of the 2000 Legislative session. They remain the same unless the Department or the Legislature determines that they are not meeting the State's needs or are not accomplishing the overall Department mission of providing a safe statewide transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities.

Question 7: *Which computer-based management systems if any do you use for setting condition targets?*

Resurfacing
Response: None.

Bridges
Response: The State Maintenance Office currently has a research project to develop software that will compare budget levels with performance measures for bridges. The methodology established may be useable for other performance measures. Once developed it will be a spreadsheet-based model, which will tie into FDOT's Oracle database.

Question 8: *Describe the extent to which your agencies' budgeting constraints affect condition targets (i.e., are condition targets based on budgets or vice versa)?*
Response: Budget requests are based on achieving the condition targets. However, several years back, the budget funding was decreased for resurfacing due to funds being diverted to another program. While the target remained at 80%, the remaining funding was sufficient to achieve a result of 78%. Subsequent actions have raised the funding back to achieve the 80% target. This was the only instance in which budget constraints affected the target.

Question 9: *What impact if any has GASB 34 reporting targets had on the setting of your condition targets? For example, did GASB 34 considerations cause your agency to set relatively conservative condition targets?*
Response: No effect. Our condition targets were established prior to implementing.

<u>Section B:</u> Methods of Condition Assessment

Question 1: *With targets established as described in Section A, please now describe your condition assessment procedures, in terms of inspection protocols, etc.*

Resurfacing
Response: All pavement segments on the State Highway System are surveyed annually and rated on a scale of 0 to 10. Flexible pavements are rated for three elements; rutting, cracking and ride, while rigid pavements are rated on two elements; defect and ride. The lowest of these rating is called the PCR. Currently, pavement segments with a PCR of 6.5 or above are considered 'meeting Department Standards.'

Please distinguish between instrument and visual inspection techniques.
Response: Ride smoothness and wheel path rutting are measured mechanically using lasers. Pavement cracking is measured through visual observation performed by experienced survey crews.

Bridges Repair/Replacement
Response: Every 2 years, bridge condition surveys are conducted using the National Bridge Inspection Standards as a guide. Load ratings performed by the Districts determine if a bridge needs to be weight restricted (posted for load). All bridges carrying highway traffic are required to be load rated. A review of the results of the bridge condition survey is made for each structure to determine if a new load rating is required. In addition, an incident may occur (such as a vehicle or vessel impact with the bridge) that requires a new load rating. The determination of the need for a new load rating is made by the District Bridge Maintenance Office after an inspection is performed. Functionally obsolete bridges are addressed through corridor planning.

Maintenance
Response: For roadway maintenance, surveys are performed every 4 months. Five elements are reviewed. These elements are roadway, roadside, vegetation/aesthetics, traffic services and drainage.

Question 2: *Has your condition assessment methodology changed since the implementation of GASB 34? In our initial telephone interview we were informed that "refinements" (not changes) to the methodology are being made "all the time." Kindly discuss and provide specific examples of a few significant refinements.*
Response: Condition assessments were being performed prior to implementing and did not change these processes. However, the methodology to perform the assessments is subject to refinement (see Section A—question 5). The objective in making these refinements is to improve accuracy and effectiveness, not for GASB reporting purposes.

Question 3: *What is the approximate sample size for your condition assessments (i.e. proportion of each asset class assessed)? How often do you intend to perform condition assessments? Has the frequency of condition assessments changed since GASB 34? Please mark your answers in the table below.*
Response:

	Sample Size	Frequency	Has frequency changed since GASB 34?
Resurfacing	100%	Annually	No
Bridges	100%	Fixed bridges are subject to inspection every 2 years. Movable bridges are subject to inspection annually.	No
Maintenance	Sample size is a minimum of 30 sample points per facility type per cost center.	Every 4 months.	No
Turnpike	100%	Annually	No

Question 4 (a): *Please describe any aspects of the approach used to conduct condition assessments you consider to be unique to your agency or instrumental in the success of the approach.*
Response: For Maintenance, a visual assessment of a systematic sampling of roadway maintenance conditions with weighted factor based on safety, preservation, and aesthetics in order to rate with a score on the work being performed or needed on the state roadway system.

Question 4 (b): *Do you utilize quality control/quality assurance processes to ensure the consistency and the accuracy of the assessment?*

Resurfacing
Response: No Response.

Bridges
Response: For Bridge Inspection, the District Bridge Maintenance Office is required to have a quality control plan, where samples of bridge inspection reports are randomly independently reviewed for each bridge inspection team. The State Maintenance Office conducts annual Quality Assessment Reviews to verify that the quality control plans are being followed.

Maintenance
Response: Yes, each MRP team statewide has a minimum of one quality check performed by their district office and one quality assurance review performed by the state maintenance office. In addition every MRP team is measured for consistency against other MRP Teams at the annual MRP Training.

Question 5: *What group within your agency is responsible for conducting condition assessments?*

Pavement
Response: Pavement Evaluation Section within the State Materials Office.

Bridges
Response: State Maintenance Office.

Maintenance
Response: Maintenance Office.

Turnpike
Response: Independent Consultants.

Question 6: *Do you outsource any component of your condition assessment? If so how is it working?*

Resurfacing
Response: No.

Bridges
Response: Consultants conduct a portion of our bridge condition surveys. The quality of work obtained is good. The consultants are required to have a quality control plan, and the District Bridge Maintenance Offices also conduct quality control reviews on the consultants work.

Maintenance
Response: Currently two of our District Offices have contracted their district wide MRP rating teams to private firms. This seems to be working for the Districts.

Question 7: *Which automated data collection systems, if any, do you use for condition assessments?*

Resurfacing
Response: Equipment and software by International Cybernetics Corporation (ICC).

Bridges
Response: The Department uses the AASHTO PONTIS product for Bridge Management that has been customized by the Department to meet the Department's needs. Additional data items are collected, and customized reports are available.

Maintenance
Response: SAS (Statistical Analysis System).

Question 8: *What is your agency's primary motivation in performing condition assessments? Is it a result of GASB-34 or for other reasons?*
Response: The primary motivation for the FDOT in performing condition assessments has always been preservation of the existing transportation infrastructure. Preservation is written into the Department's mission, goals, and objectives and included in Florida Law (F.S. 334.046). FDOT has been focusing on and monitoring infrastructure preservation efforts long before GASB. The Department has developed performance measures that are included in the Long Range Performance Plan, which is required by the Florida Statutes. The condition assessments are performed to measure the Department's actual performance as compared with the performance measures provided in the plan.

Question 9: *Are there any improvements that can be made to the current condition assessment process?*

Resurfacing
Response: One day we hope to be able to automate the determination of the crack rating. There are companies that provide the products and services to do this, but we don't feel the technology is far enough along for us to switch to this at the current time.

Maintenance
Response: Current conditions that are in place seem to be working well, but if conditions change adjustments could be made to the process.

Question 10: *Is your condition assessment methodology and extrapolated results (samples) consistent and replicable among multiple regions? If not, why not?*

Resurfacing
Response: We don't have to extrapolate since we gather pavement condition data on 100% of the system, but we do feel that our results are very consistent between the different regions of the state.

Bridges
Response: The results are consistent and replicable across the state.

Maintenance
Response: Condition assessment is well measured and balanced within the MRP program.

Question 11: *What degree of confidence do you have in your condition assessments (for either financial reporting or asset management purposes)?*

Resurfacing
Response: High.

Bridges
Response: For bridges we have a high degree of confidence in the accuracy of the condition assessments. This is based on the results of quality assessment reviews and the hard work and dedication of the individuals involved.

Maintenance
Response: We are confident in the current condition assessment, and know if conditions or needs change the assessment process can be reevaluated and if adjustments are required they can be made.

Question 12: *In our experience the condition assessment process for resurfacing and bridges is more advanced than for other asset classes. Has your agency managed to consistently report condition assessments for other asset classes?*
Response: Yes, as described above, we have been able to consistently report condition assessments for maintenance.

Section C: Link between Condition Targets and Expenditure Requirements, Including Budgetary Requirements

Question 1: *Who in your agency is responsible for estimated and actual expenditure calculations for achieving condition targets? Is it the maintenance or financial department or other?*
Response: The Program and Resource Allocation Office, a function of the financial side of the DOT, prepares a Program and Resource Plan based on projects with quantities. The plan provides program levels that form the basis for calculation of cost estimates that form the Department's Finance Plan, tentative 5-year work program and legislative budget request. A plan is provided at the beginning of each year. The plan is broken down to program areas. The Department currently has program areas for resurfacing, bridge repair and routine maintenance. The amounts provided in the plan are used for the estimated expenditures. After the completion of the fiscal year, the Program and Resource Allocation Office adds the actual expenditures. These amounts are used as the actual expenditures. This office has no links with the State Comptrollers office.

Question 2: *How difficult is it to establish links between condition targets and expenditures?*
Response: We already had a process in place that provided the information. As provided in Question 1 above, the amounts provided in the original program and resource plan are used for the estimated expenditures. After the completion of the fiscal year, the Program and Resource Allocation Office adds the actual expenditures. These amounts are used as the actual expenditures.

Question 3: *Are expenditure targets based on models/predictions, history, estimated costs of projects, finance and/or other budgetary considerations?*
Response: All of the above with the focus on the estimated costs of projects.

Question 4: *How do you approach the calculation of estimated and actual target expenditures incurred during a particular fiscal year? (In the RSI, we note that the differences between budgeted and actual expenditures for resurfacing and bridge repair appear to be of greater magnitude than such differences for routine maintenance. Based on the last sentence in the RSI, we suspect that this may relate to the problem of projects budgeted in one year with expenditures spilling over to subsequent fiscal years for resurfacing and repairs, whereas routine maintenance is a short term activity that doesn't have the fiscal year spillover problem. Could you comment on our hypothesis and suggest other reasons for this phenomenon? To help you respond to this question we have summarized information from the CAFR RSI in the attached schedule.)*
Response: The information is obtained while forming the basis for the Department's Finance Plan, tentative 5-year work program and legislative budget request (FDOT operates on a cash flow basis, where estimated expenditures = budget). This is funded via a trust fund; so unused dollars carry over and can be used later. Your hypothesis is partially correct. However, we have adjusted how we report budget in the 2005 CAFR. The majority of the difference was caused by "contingency" budget amounts that were not needed. Therefore, for our budget

totals for 2005, we removed contingency budgets. This brought the budget to actual comparison much closer.

Question 5: *When comparing budgets and actual expenditure per GASB 34, is there an allocation of actual expenditure values among fiscal years?*
Response: No, the expenditures are based on actual costs during the period.

Question 6: *How do your approaches differ when calculating force accounts and other internal expenditures (such as utilities) versus contracted expenditures?*
Response: Both the estimated and actual amounts are primarily based on project information from our financial management system. The project information includes both in-house and contracted expenditures. Contracted expenditures are usually related directly to a specific project and are therefore direct charged to that project. In-house could be direct charged (if working directly on a project) or allocated per the indirect cost allocation (support functions, utilities, etc) function.

Question 7: *Is there a correlation between budget requests, expenditure estimates, and actual amounts expended? Again, to help you respond to this question, we have summarized information from the CAFR RSI in the attached schedule. Please comment on trends that may or may not be apparent in the schedule, if any. Also, see question 4 above.*
Response: Yes, the Program and Resource Plan provides program levels that form the basis for the Department's legislative budget request. Actual expenditures are limited to the Department's approved budget, which will be based on our legislative budget request.

Question 8: *How do you account for the lag between the time expenditures are incurred (thereby improving conditions) and time of subsequent inspections?*

Resurfacing
Response: Since we do a condition assessment annually, the lag time is small and we do not see it as a significant problem.

Bridges
Response: If major work is done on a bridge a special inspection may be performed and the database updated appropriately. Otherwise the results will be determined during the next inspection cycle. The majority of work that would raise the condition rating of a bridge would be collected this way. The amount of work that would not be found would be statistically insignificant.

Question 9: *Are there any improvements that can be made to the process of linking condition targets and expenditure requirements?*
Response: Not at this time.

Section D: The Allocation of Costs among Capital, Preservation, and Maintenance Categories

Question 1: *Do you allocate costs among capital, preservation, and maintenance categories? If so, what methodology do you use? Is this methodology used for general asset management, budgeting and financial reporting purposes?*
Response: All costs are initially expensed. Annually, a determination is made on how much to allocate to infrastructure. The allocation is performed based on information within our Financial Management system. We use codes within the system to determine if the work being performed is capital versus expense. Under the modified approach, we expense preservation and maintenance activities and capitalize new construction and construction that adds traffic flow.

All accounts are done at year-end. The establishment of this approach required a major effort over a period of eight months. At this point, it is a routine activity.

Question 2: *Under definitions, maintenance costs are those that allow an asset to continue to be used during its originally estimated useful life. Capital costs increase the capacity or efficiency of the asset. "Preservation" costs generally are considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life, but do not increase the capacity or efficiency of the asset. Are your general asset management, budgeting, and GASB 34 financial reporting definitions of these categories consistent with the aforementioned GASB-34 definitions? Is there a clear definition of preservation costs (for extending lives only) that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized?*
Response: Yes, at this time the determination is made based on codes within our Financial Management system. Professional judgment was used as to which code is preservation and which is capital. The logic was reviewed and approved by various offices within the Department.

Question 3: *Have there been any changes in how costs are allocated since the introduction of GASB 34?*
Response: Each year we review the codes that were used and determine if any additional codes have been added. If so, the new codes are reviewed and a determination is made to whether they represent preservation or capital activities. FDOT is currently re-evaluating its accounting treatment of replacement bridges. The intent is to be in compliance with GASB standards. If the prior treatment was not in compliance, it will be retroactively changed. FDOT does not expect any material differences due to this.

Question 4: *How are networks and subsystems defined for cost estimating purposes?*
Response: Our reporting is done at one level, the State Highway System.

Question 5: *Which group within your agency is responsible for allocating costs among the aforementioned categories (capital, maintenance, and preservation)?*
Response: General Accounting Office—Financial Reporting Section.

Question 6: *Do you use automated systems or manual methods to allocate costs? If so, to what extent?*
Response: The majority of the calculation is automated. See answer to question 7. Miscellaneous manual adjustments are made for items that we have found to not fit the overall logic.

Question 7: *For projects that have both capital and preservation elements, do you allocate costs between the two categories? If so, what is your methodology for doing so?*
Response: Yes, within our Financial Reporting system projects are assigned a work mix code. Costs for two major work mix codes are prorated. These work mixes are "add lanes and reconstruct" and "add lanes and rehabilitate." We manually prorate the costs for these two work mixes, based on the number of lanes being added versus maintained. All other codes are considered 100% capital or 100% preservation.

Question 8: *What degree of confidence do you have in the accuracy of the allocation of costs among the three categories?*
Response: We believe the allocation method is materially correct.

Question 9: *Are there any improvements that can be made to the process of allocating costs among capital, preservation, and maintenance?*
Response: We realize that more projects that do not have one of the above work mixes will be for maintenance and capital activities. For these projects, we are either expensing or capitalizing

100% of the costs. We believe that for all of these projects taken as a whole, the uncapitalized amounts and over capitalized amounts net to an immaterial amount. Of course, it would be nice to be able to look at every disbursement on every transaction to determine if it should be capitalized or not, however, the effort that would be involved is unreasonable, and the result should be immaterially different.

Section E: Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Question 1: *Describe your accounting procedures for purposes of reporting infrastructure additions, retirements and replacements in the CAFR; and, if different, for purposes of general asset management and budgeting.*

Additions
Response: Added based on project cost information provided from our Financial Management system.

Retirements
Response: Based on year built (apply to lane miles), infrastructure is manually removed at the costs the asset was put on the books.

Replacements of infrastructure assets
Response: Replacements are primarily bridges. We manually remove all bridges removed during the period.

Question 2: *Has your accounting methodology for these items changed since the implementation of GASB 34?*

Additions
Response: No.

Retirements
Response: No.

Replacements of infrastructure assets
Response: No.

Question 3: *Describe the extent to which your financial accounting processes are manual and/or automated?*
Response: Approximately 95% of the process is automated and 5% is manual.

Question 4: *If processes are exclusively manual, do you have plans to implement an automated system?*
Response: Not Applicable.

Question 5: *Are there any improvements that can be made to the process of accounting for additions, retirements, and replacements of infrastructure assets?*
Response: Our biggest problem is that we only have a value for the System as a whole, based upon the initial estimate of system value prepared in the first year of GASB 34 implementation. We do not break down the value to specific roads. Therefore, it is more difficult to determine how much value to remove from infrastructure when specific sections of roads and bridges are removed.

Question 6: *Note 5 to the CAFR shows $324,322 of governmental infrastructure being depreciated. Although this is not a material amount, could you briefly describe such infrastructure and*

why it is not subject to the "modified approach?" We would expect it would be infrastructure owned by agencies other than the DOT?
Response: You are correct. DOT is the only agency that has non-depreciable infrastructure. This infrastructure would belong to other agencies. The primary agencies with depreciable infrastructure are the Department of Environmental protection (playground systems, boardwalks, water treatment systems and seawalls), School for the Deaf and Blind (Sidewalks going to classrooms and roads through campus), Department of Military Affairs (Fire ranges, sidewalks, retention ponds and parking lots) and Department of Corrections (Roads, sidewalks, parking lots and drainage facilities).

Section F: Potential Effects on Bond Rating

Question 1: *Does your agency or Government Issue bonds to finance infrastructure?*
Response: Yes, at June 30, 2005, the FDOT had approximately $4.1B in outstanding bonded indebtedness. (Alligator Alley—$47.7M, Skyway—$9.7M, SIB—$62M, ROW—$2B, TPK—$2B)

Question 2: *Which agency is your rater?*
Response: The Department uses all three major rating agencies: Fitch Ratings, Moody's Investor's Service, Standard & Poor's Ratings Services.

Question 3: *What specific information do you provide to the bond rating agency? Is it the same or how does it differ from what is reported in the CAFR?*
Response: In addition to CAFR information, we provide the bond rating agencies with information regarding our 5-year work program and 10-year financial plans. We review the physical condition rating of the turnpike. We discuss events that may impact the organizational structure, such as the appointment of a new Secretary of the Department, the resignation of key management, the relocation of the headquarters, etc.

Question 4: *Has the bond rating agency requested additional/follow up information? If so, what have they requested?*
Response: Primarily they ask for updates on certain events, such as lost revenues when the system is shut down for hurricane evacuation.

Question 5: *Has there been a change in your bond ratings as a result of new infrastructure accounting practices or implementation of GASB 34 requirements? If so, how has it affected your costs? In our initial telephone interview you informed us that recent upgrades to Florida debt could not specifically be tied to infrastructure accounting practices or implementation of GASB 34 requirements. However, you believed the raters were impressed with the DOT's judicious asset management. Could you expand on that comment with examples of specific aspects of your asset management that seemed to please them?*
Response: The Florida Turnpike Enterprise developed an on-line asset management system, in part to support the modified approach under GASB 34. The rating agencies were pleased that we took asset management and the condition of our system so seriously. However, there has been no change to bond ratings because FDOT already had good communications (i.e. dissemination of information) with bond raters prior to GASB 34. Moreover, FDOT already has high bond ratings, thus not much left for improvement.

Question 6: *What factors are important in the rating process? In our initial telephone interview with the CFO of the Florida Turnpike, we learned that bond raters from all three rating agencies periodically make field trips with inspectors performing condition assessments. Could you kindly*

expand on your observations about these trips—what are the raters looking for, what impresses them, what disturbs them, etc.?
Response: We did not mean to give the impression that the rating agencies sent "inspectors" to review the condition of the turnpike. They have in the past conducted on-site visits for the purpose of receiving an update of information as described above. They sometimes do want these meetings to be held on-site, rather than in their NY offices. They have never expressed any concern over what they have seen. They do comment on the traffic growth and congestion, observed maintenance condition, etc. They always have expressed positive comments. That may be why we have the highest ratings that are given to toll roads. In the past they have had concerns about the possibility of diverting revenue from the Turnpike System to pay for needs off the system.

Section G: Operational and Financial Impacts of GASB 34 Reporting

Question 1: *Has your organizational approach (i.e., planning, etc.) changed since using the modified approach of GASB 34?*
Response: No, most of the processes were already in place prior to GASB 34. The function of the Department is transportation and that continues to be its focus. The accounting office was able to meet the GASB 34 requirements with minimal effect on the rest of the Department. Most people outside of the Department's accounting/finance areas are unaware of GASB 34.

Question 2: *Is the information on condition assessments shared, both internally and externally? If so, how is this information shared?*
Response: The results are included in the Florida Transportation Commission's Annual Performance Measures Report. Also, the results are in the CAFR and the next year's Long Range Performance Plan submitted to the Governor's Office for review and approval. The previous year's results are used to justify the current year's budget requests.

Question 3: *Are external organizations (e.g., public interest, higher education, etc.) interested in your operational and financial reporting? If so, to what extent?*
Response: There has been minimal interest. During and after implementation we've had contacts with the City of Tallahassee to share their methods.

Question 4: *Since GASB 34, what has been the trend in condition assessments for assets? How does your DOT explicitly or intuitively define good asset management, e.g. balancing cost and results of asset management, is there a point of deterioration where asset management is no longer worth it?*
Response: No response.

Question 5: *To what extent has the RSI been subject to auditor scrutiny? Has auditor scrutiny increased or decreased since adoption of GASB 34?*
Response: It is reviewed annually as part of the Florida Auditor General's audit of the CAFR. In addition, additional review procedures were performed this year by the Auditor General staff to help them obtain a better understanding of the processes.

OHIO DOT WORKSHOP

Workshop Date: October 4, 2006
Participants: **Julie Ray,** Deputy Director, Finance and Forecasting,
Richard Winning, Administrator, Budget and Forecasting
Angela Haskins, Budget and Forecasting
Richard Reiff, Budget and Forecasting
Leonard Evans, Transportation Administrator, Planning
David Humphrey, Administrator, Office of Pavements
Andrew Williams, Pavement Management
Amjad Waheed, Assistant Administrator, Bridge Management
Joe Hausman, Section Manager, Roadway Information Section
Bob Tugend, Management Analyst, Systems Planning and Program Management

Section A: Process for Setting Condition Targets

Question 1: *What process do you use to determine which condition targets (for example, minimum percent of pavement meeting minimum condition levels) will be used for each asset class? Of these, what is the preferred process? Is this process used for both general asset management purposes and for reporting in the CAFR? If not used for both, why? What are the differences?*

Pavements & Bridge
Response: Condition targets are set using the measures used by the pavement and bridge management systems for assessing asset conditions. These measures include the PCR and the Bridge General Appraisal Rating (GA). Each measure represents a small portion of the data that is collected annually to assess the condition and rate of deterioration of pavements and bridges. These two attributes represent the overall health of the assets and are appropriate for GASB reporting. The targets set for the GASB 34 pro-forma are less restrictive than standards used internally for budgeting and performance measurement. One reason was due to the business rule that once the GASB 34 targets were not met, the modified approach could not be used. The State Auditor was concerned about this possibility so a buffer zone was established between the managed levels of performance and the absolute threshold for GASB 34 (i.e., the GASB 34 thresholds are less demanding than the internal asset management thresholds). Currently, the GASB 34 thresholds are to allow no more than 25% of the priority system pavement inventory to be assessed below a 65 PCR. Similarly, no more than 25% of the general system inventory should be assessed below a 55 PCR. The 65 and 55 PCR thresholds correspond to the policy system designations. The priority system represents the interstates and multi-lane divided National Highway System routes. These routes represent about 25% of the state lane miles but carry over 50% of all vehicle miles of travel and over 70% of all truck travel. Improvements to this system are more expensive and represent more risk to the department, thus the deficiency threshold has been set at a 65 PCR rating. The general system represents primarily two-lane, lower volume routes which are less expensive to maintain. This lower-risk system has a deficiency threshold of a 55 PCR. The department has demonstrated its ability to maintain assets at these levels. In 1997, the priority system was nearly 20% deficient (Jobs and Progress Plan, http://www.dot.state.oh.us/JobsAndProgress/general.pdf, p 5, 2003). By 2005, the same system had only 4% deficiencies. The internal management standard is to sustain a level of performance where no more than 10% of the pavements are deficient (Ohio Department of Transportation Business Plan 2006 & 2007), as compared with the GASB threshold of 25%. (See Figure 1.)

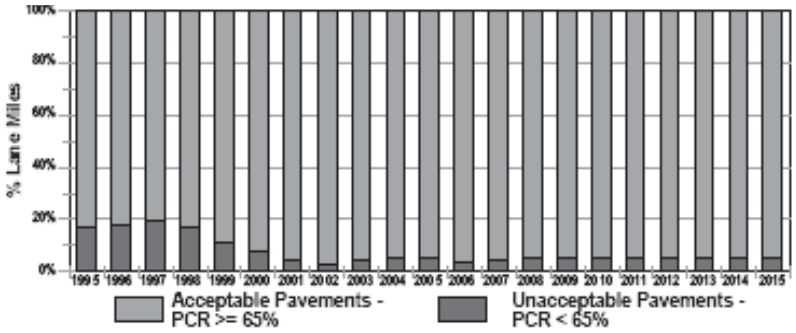

Figure 1. Ohio statewide priority system pavement conditions 1995–2015.

Bridge conditions are assessed using the general appraisal rating obtained from the annual bridge inspections. The GASB 34 requirement is to permit no more than 15% of bridges to be rated below a 5 for GA based upon square feet of bridge deck. This coincides with the internal management definition for a bridge deficiency for ratings 1 to 4 of the 9 point bridge rating scale. Internally, bridge deficiencies are also monitored for bridge wearing surfaces, floor condition, and paint condition. The general appraisal condition represents the overall condition of the structure and is most applicable for the intent of the GASB 34 reporting. Historically, the bridge general appraisal ratings (Figure 2) were 6.26% deficient in 1998 and have been improved to the current level of 2.1% deficient. The internal management goal is to maintain structures at a level with less than 4% general appraisal deficiencies.

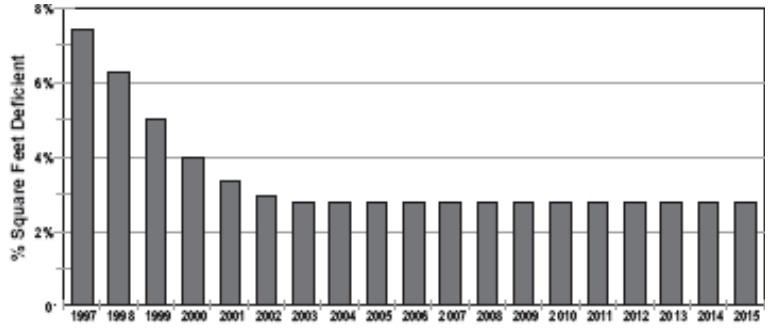

Figure 2. Ohio statewide bridges—general appraisal 1997–2015.

Other Infrastructure

Maintenance and facilities have some condition targets, but they have no effect on value. At the district level, culverts have condition targets that are used for risk management.

Question 2: *What Performance measures are used to express these targets? Are there any measures of customer satisfaction with system performance?*

Response: As explained above, the PCR and bridge GA are used to determine acceptable performance. The performance standard is based upon the engineering definition of a deficiency based upon the economical point to initiate a project to rehabilitate the asset. Customer satisfaction measures are included in the long range planning process and by divisional activities associated with organizational quality assessments, similar to the Malcolm Baldrige National Quality Program. These customer surveys annually measure the satisfaction of the overall quality of Ohio roads and the smoothness of Ohio roadways (Figure 3).

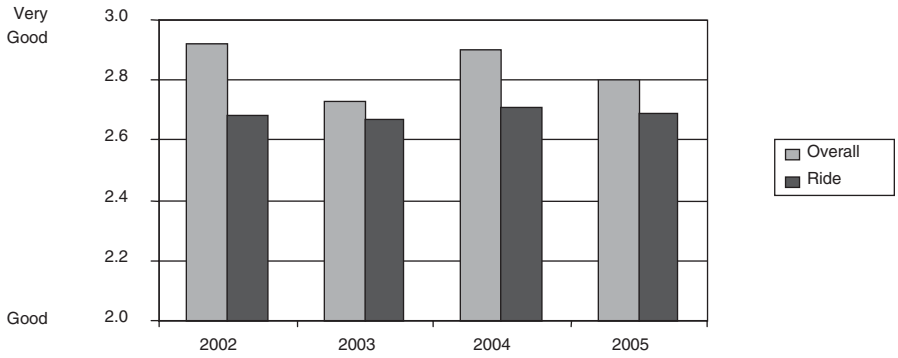

Figure 3. Ohio customer survey: highway conditions report card.

The aforementioned survey is a telephone survey, which is administered by the same group that does the State's political surveys, and is structured to accurately represent the demographic characteristics of the State's population. Survey results correlate well with the technical assessment of pavements at the District level.

Pavements
The CAFR RSI indicates that for the Priority Subsystem, it is the State's intention to maintain at least 75% of the pavement at a PCR level of at least 65, and to allow no more than 25% of the pavement to fall below a 65 PCR level. For the General Subsystem, it is the State's intention to maintain at least 75% of the pavement at a PCR level of at least 55, and to allow no more than 25% of the pavement to fall below a 55 PCR level. These ratings examine elements such as cracking, potholes, deterioration of the pavement, and other factors. They do not include a detailed analysis of the pavement's subsurface conditions. Please provide us with more information on these elements of the PCR, what the targets are for each of the elements, how they were determined and by whom?
Response: The pavement condition rating process is an annual visual survey of pavement condition. Pavement defects such as cracking, rutting or raveling are categorized as functional or structural deficiencies. Defects are deducted from a perfect score of 100 and are used to determine the appropriate rehabilitation action to perform. The segment lengths are determined by construction type and condition and can vary from ¼ mi to 5 mi.

Also, kindly provide us with information on how the subsurface conditions are measured.
Response: Subsurface conditions are measured using non-destructive testing, such as the falling weight deflectometer (FWD), or the Dynaflect. Destructive tests include pavement corings and soil borings. Pavement distresses are monitored for the appearance and propagation of structurally associated deficiencies, such as wheel-track cracking or rutting. The Dynaflect is an electro-mechanical device used for measuring pavement deflection. It is trailer-mounted and can be towed by a standard vehicle. A static weight of 2000 pounds (~908 kg) is applied to the pavement through a pair of 4-in wide by 16-in (~406 mm) diameter rubber coated steel wheels placed 20 in (~508 mm) apart. Two counter-rotating eccentric weights produce a dynamic force of 1000 pounds (~454 kg), peak-to-peak, at a frequency of eight cycles per second. The dynamic force is superimposed on the static force and the deflections are measured by five velocity transducers (geophones). The first geophone is located between the steel wheels with the rest spaced twelve inches (~305 mm) apart. The deflections are recorded on a computer in the tow vehicle. The FWD is an impact load response device used to measure pavement deflection. The impact force is created by dropping a weight of 110, 220, 440, or 660 pounds (~50, 100, 200, 300 kg) from a height of 0.8 to 15 in (~20 to 380 mm). By varying the drop height and weight, a peak force ranging from 1500 to 24,000 lb (~6.7 to 106.8 kN) can be generated. The load is transmitted to the

pavement through a loading plate, 11.8 inches (~300 mm) in diameter, to provide a load pulse in the form of a half sine wave with a duration from 25 to 30 ms. The actual magnitude of load applied may depend on the stiffness of the pavement and is measured by a load cell. The deflections are measured by seven velocity transducers. One transducer is located at the center of the loading plate while the remaining six can be placed at locations up to 7.4 ft (~2.25 m) from the center. The deflections are recorded on a computer located in the tow vehicle. Pavement coring samples and soil borings are taken to determine the pavement composition and underlying soil conditions. These parameters affect the design of pavement rehabilitation and replacement projects.

What factors went into the decision to have two subsystem classes of pavement?
Response: The pavement policy systems differentiate between the state backbone of priority system pavements which include the interstate and multi-lane pavements, designed for long-range mobility of passenger vehicles and freight and the general system which serves localized travel and county interconnectivity. The investment per lane mile is considerably higher for the priority system due to the larger footprint, structural design and limited access. The priority system has a higher deficiency threshold due to the additional mobility significance and risk due to higher resource requirements.

Bridges
The CAFR RSI indicates that it is the State's intention to maintain at least 85% of the square feet of deck area at a general appraisal condition rating level of at least five, and to allow no more than 15% of the number of square feet of deck area to fall below a general appraisal condition rating level of five. Please provide us with more information on these elements of the general appraisal rating, what the targets are for each of the elements, how they were determined and by whom?
Response: The state of Ohio defines a bridge as any structure 10 ft or longer. In accordance with state law, each bridge is evaluated annually by trained inspectors to monitor and record its condition. The inspection includes the bridge's deck, wearing surface, paint, supporting members, piers, abutments, railings, and foundations. A composite rating of these factors, General Appraisal Rating, is also used to provide an overview of the condition of the state's bridges. The General Appraisal is the lowest condition rating of the superstructure & the substructure of a bridge. It includes a composite measure of the major structural items of a bridge, such as piers and abutments. Each bridge is inspected and appraised per ODOT Manual of Bridge Inspection guidelines once in 12 months. Various critical elements of bridge super- and substructure are inspected and appraised at the same time. A deficiency is indicated when the rating drops from a 5 (Fair) to a 4 (Poor) or less. General Appraisal condition rating of a bridge is the lowest condition rating of the superstructure and the substructure of a bridge.

Other Infrastructure (ex., signs, pavement marking, drainage structures if any).
Response: Other items are not assessed as part of the GASB 34 reporting procedure.

Question 3: *Has this preferred methodology changed since the implementation of GASB 34? If so, list the specific changes.*
Response: ODOT has one of the most aggressive bridge inspection and appraisal programs in the nation (ODOT inspects bridges at least once every year compared to once every 2-years required by FHWA). Since GASB 34, no changes have been made in the bridge inspection program. With respect to pavements, most changes relate to the time allowed to achieve specified targets, not to the targets themselves. The targets represent the DOT's way of sustaining the assets.

Question 4: *Please describe any aspects of the approach used to set performance targets you consider to be unique to your agency or instrumental in the success of the approach?*

Response: Initial research performed by NCHRP on GASB 34 implementation in transportation agencies indicated others with similar goal setting strategies which set less stringent GASB 34 goals than internal agency goals. Also, ODOT managers' individual performance evaluations are tied to meeting condition targets; as such, there is a personal interest of all ODOT employees to achieve the set condition targets.

Question 5: *Which group within your agency is responsible for setting condition targets? Do they meet to review results and/or adjust targets? What is the chain for approving condition targets?*
Response: Executive management has the overall responsibility for setting condition targets. There have been no revisions to the GASB 34 requirements due to their less restrictive nature. The process to revise agency goals is part of the overall strategic management process which is repeated on a two-year cycle in conjunction with the state budgeting process. The funds management committee serves to coordinate funding needs and performance capabilities and makes recommendations to executive management for changes to performance standards based upon predicted conditions and engineering judgment. Bridge OPI goals are set for each District for each of the four categories based on the current conditions of bridges, past history and planned projects in the Districts. Central Office (CO) sets these targets through consultation with the District managers and all parties buy into these goals. District Bridge Engineers and CO monitors those goals on regular basis. The Office of Structural Engineering runs OPI condition reports for each District every month and for the whole agency. Districts falling behind on their OPI goals are contacted and their bridge program is further reviewed with them to bring positive improvements.

Question 6: *How often does your agency set condition targets?*
Response: Internal targets are reviewed biennially. However these targets have not changed since GASB 34.

Question 7: *Which computer-based management systems, if any, do you use for setting condition targets?*
Response: Condition predictions are performed with a spreadsheet analysis using outputs from the pavement and bridge management inventory systems and the Ellis project management system for bridges. A corporate data warehouse facilitates the collection of data for analysis using standard SQL queries. Ellis tracks the OPI deficiency targeted for each planned pavement or bridge project.

Question 8: *Describe the extent to which your agencies' budgeting constraints affect condition targets (i.e. are condition targets based on budgets or vice versa)?*
Response: The agency is committed to preserving the condition of existing assets and has demonstrated this as budgets were impacted by the recent increase in construction prices. This increase required a mid-term adjustment to the biennial business plan. Condition targets were reevaluated as part of this process to reflect new information and trends but funding was ultimately shifted to meet condition targets. As such, condition targets drive budgets (i.e., legislators are very receptive to preserving infrastructure). In fact there was a 6 cent motor fuel tax increase to supplement additional preservation costs a couple of years ago. ODOT and Ohio legislators place great emphasis on preservation; and if cut backs are required they would do so on new capital expenditure (not on preservation expenditure).

Question 9: *What impact if any has GASB 34 reporting targets had on the setting of your condition targets? For example, did GASB 34 considerations cause your agency to set relatively conservative condition targets?*
Response: GASB 34 requirements have had little impact on condition targets at ODOT (because ODOT was ahead of the curve).

Section B: Methods of Condition Assessment

Question 1: *With targets established as described in Section A, please now describe your condition assessment procedures, in terms of inspection protocols, etc.*

Pavements
The RSI indicates that the State manages its pavement system by means of annual visual inspections by trained pavement technicians. Please provide more detailed information about this inspection program.
Response: Pavements are inspected annually for visible distresses per the pavement condition rating manual. This process utilizes a manual inspection of pavement defects and cracking and is performed annually. One Pathway van and three profiler vans (two-man crew) are being folded into the process and will replace the current visual inspection for rutting. (see http://www.dot.state.oh.us/pavement/PavementManagement/Manual.htm)

Are all pavements inspected each year or on a sample basis?
Response: Yes, 100% inspection performed annually. The field monitoring procedure explains the process for the inspection of the entire pavement section, not a sample. (http://www.dot.state.oh.us/pavement/PavementManagement/PCR/FieldMonitoring.pdf)

What type of training are the inspectors subject to?
Response: Pavement raters are trained and periodic quality assurance audits are performed to assure consistency. There are four inspectors in the central office. This rating process has been adopted by several local agencies as well and is taught by the local technical assistance program (LTAP). (see http://www.dot.state.oh.us/ltap/AssetMgmnt.htm)

Is there any use of technical equipment in the assessments?
Response: A rutting gage is used during the rating process. Surface measurements are made by visual observations. Sub-surface measurements on specific segments are made using Dynaflect, FWD or corings.

How are measurements made of each of the elements described in Section A 2 above?
Response: Dynaflect and FWD measurements are explained in section A 2.

Bridge:
Are all bridges inspected each year or on a sample basis?
Response: All bridges are inspected every 12 months by District personnel. Ohio has a more stringent bridge inspection protocol (as opposed to FHWA requirement of inspections every 2 years) because one of its bridges collapsed in 1967.

What type of training are the inspectors subject to?
Response: Basic bridge inspection and in-depth training courses approved by the FHWA and refresher courses.

Is there any use of technical equipment in the assessments?
Response: Hammer, drag chain, ultrasound, and penetrating dye.

How are measurements made of each of the elements described in Section A 2 above?
Response: The measurements are described in the bridge inspection manual: (http://www.dot.state.oh.us/se/1998%20Bridge%20Inspection%20Manual/bridge_inspection_manual%20Cover.htm)

Question 2: *Has your condition assessment methodology changed since the implementation of GASB 34?*
Response: The bridge rating scale changed from a 1 to 4 scale to a 0 to 9 scale (which is a more in-depth inspections rating). There is now a more in-depth inspection for paint con-

dition and use of a laser for bridge clearance. For pavements, automated profiling for rutting is under development. These refinements are driven by departmental management requirements rather than due to GASB 34.

Question 3: *What is the approximate sample size for your condition assessments (i.e., proportion of each asset class assessed)? How often do you intend to perform condition assessments? Has the frequency of condition assessments changed since GASB 34? Please mark your answers in the table below.*

	Sample Size	Frequency	Has frequency changed since GASB 34?
Pavements	100 percent	Annually	No
Bridges	100 percent	Annually	No

Question 4(a): *Please describe any aspects of the approach used to conduct condition assessments you consider to be unique to your agency or instrumental in the success of the approach.*
Response: ODOT is unique to other transportation agencies in that it links manager performance evaluations to system condition results. This added accountability has elevated the importance of timely and accurate condition reporting throughout the agency which is another key element of our uniqueness. ODOT relies less on sampling techniques for data collection and more on annual inspections to provide a higher level of confidence by affected managers. ODOT defines a bridge as any structure with a length over 10 ft, rather than the 20 ft definition in FHWA standards.

Question 4(b): *Do you utilize quality control/quality assurance processes to ensure the consistency and the accuracy of the assessment?*
Response: For pavements, rating specialists and design engineers are included in an exercise to compare subjective ratings of sample pavements within +/– 5 PCR points. Routes are selected randomly and reviewed by supervisors. Additional quality assurance checks are performed on the data to validate unusual results or outliers. ODOT District Bridge Engineer and a team of bridge inspectors perform bridge inspections, review them and upload in the system; as quality control measure inspectors annually visit four districts and randomly inspect bridges. FHWA conducts random independent review of two districts.

Question 5: *What group within your agency is responsible for conducting condition assessments?*
Response: The Office of Pavements and the Office of Structures. These offices are associated with the Planning and Highway Management divisions respectively. Bridge inspections are done by individual district offices.

Question 6: *Do you outsource any component of your condition assessment? If so, how is it working?*
Response: In-depth inspection of large and complex bridges is contracted out to private consultants. Each District bridge engineer is responsible to set the frequency for in-depth inspections, monitor and review the reports.

Question 7: *Which automated data collection systems, if any, do you use for condition assessments?*

Pavements
Response: Pathway & Dynatest profilers for IRI values.

Bridges
Response: Bridge Management Remote Inspection (BMRI) system is an internally developed laptop based program that ODOT inspectors use in the field to collect the bridge data,

run the data error checking code, review and upload them to the BMS. It has been in use for 3 years.

Question 8: *What is your agency's primary motivation in performing condition assessments? Is it a result of GASB 34 or for other reasons?*
Response: Condition assessments have been historically performed to support engineering decision making, planning and to meet federal regulations. These processes were established prior to GASB 34 to ensure the safety of general public, compliance with FHWA guidelines, and compliance with the Ohio Revised Code.

Question 9: *Are there any improvements that can be made to the current condition assessment process?*
Response: Recent improvements have been directed at developing more accurate degradation models using historical inspection data. Data systems are adjusting for logging changes in roadway network due to new roads, realignments, and revised inventories but need continued improvement to better relate changes in networks with assessments. Planning, design and maintenance are benefiting from improved decision trees to identify maintenance strategies. Improved understanding of the complete life span of each asset as well as intermediate maintenance requirements. Also, a web based photo logging system which would document every highway is currently being developed. This photo logging system would be completed in 3 years. Bridge vertical clearance inspections are improving with the use of multiple lasers to detect clearance deficiencies without obstructing traffic. Finally, we are in the process of introducing profilers (to measure rutting) and lasers (to measure elevations, speeds, etc.).

Question 10: *Is your condition assessment methodology and extrapolated results (samples) consistent and replicable among multiple regions? If not, why not?*
Response: Yes, they are quite accurate. Sampling error is not a factor due to 100% inspection.

Question 11: *What degree of confidence do you have in your condition assessments (for either financial reporting or asset management purposes)?*
Response: The connection with manager performance evaluations assures a high level of confidence will be maintained.

Question 12: *In our experience, the condition assessment process for pavement is more advanced than for other asset classes. Has your agency managed to consistently report condition assessments for other asset classes?*
Response: Yes, pavement and bridge condition assessment are our most advanced processes. Culvert inspection has been under development and implemented by some districts.

Section C: Link between Condition Targets and Expenditure Requirements, including Budgetary Requirements

Question 1: *Who in your agency is responsible for estimated and actual expenditure calculations for achieving condition targets? Is it the maintenance or financial department or other?*
Response: The finance department is responsible. ODOT uses ELLIS to track all capital projects. This includes 1) project identification describing which pavement or bridges will be improved, 2) project schedules that are updated at each phase of the project development process, and 3) project costs which are updated at each phase of the project development process. The project manager is responsible for the accuracy of the ELLIS data. A bi-weekly program management meeting evaluates the status of each program fund. Monthly Organizational Performance Index reports evaluate the current and projected system conditions. These tasks are performed in a cooperative effort between Planning, Information Technology, Production and Finance as well as constant monitoring by the Pavement and Structures offices.

Question 2: *How difficult is it to establish links between condition targets and expenditures? Based on the 2005 CAFR RSI, while there is some consistency between years in meeting target levels, there appears to be significant variations between years in actual amounts a) expended to meet the targets and b) compared with estimated amounts. For purposes of this analysis, we also compared calendar year condition assessments with the fiscal year expenditures that fell within the calendar year (e.g., calendar year 2004 condition assessments were compared with June 30, 2004 expenditures to maintain the targets). The changes in condition levels and the changes in actual maintenance expenditures appear not to correlate. We suspect this absence of correlation is partially explained by lag time between expenditures and related condition assessments (see question 8 below). However, we tried to partially compensate for this lag by using fiscal year expenditures that were made within the calendar year when the condition assessments were made, as discussed above. Could you kindly speak to this matter?*
Response: It will be difficult to make a direct comparison of condition targets and expenditures due to the diversity of pavement and bridges in the system (i.e., there are many non-homogeneous projects). Asset rehabilitation projects vary in scope and cost from low cost preventive maintenance strategies to high cost major rehabilitation projects. The state employs a mixture of projects with different asset lives applied in different fiscal years to meet numerous objectives for overall condition, remaining service life, and compliance with design standards. Some elements of the projects contribute to meeting the condition targets while others do not. Estimated and actuals are both calculated at the end of the year. Accordingly, it is difficult to link expenditure and condition targets. However, see question C4 below. The Department's focus on the linkage between condition targets and required expenditures is on a long term basis Department-wide for budgetary purposes, rather than as part of the annual financial reporting exercise.

Question 3: *Are expenditure targets based on models/predictions, history, estimated costs of projects, finance and/or other budgetary considerations?*
Response: Estimated predictions are based on historical percentages from our cash forecasting system, which projects payouts based on various criteria including type of project, labor charges, etc.

Question 4: *How do you approach the calculation of estimated and actual target expenditures incurred during a particular fiscal year?*
Response: Estimated expenditure targets are based on a projected payout of encumbrances. A certain amount is projected to be paid out of each encumbrance each year. Actual expenditures are payments actually made during the fiscal year. ODOT questions this annual comparison is a valuable component of GASB 34 financial reporting.

Question 5: *When comparing estimated and actual expenditure per GASB 34, is there an allocation of actual expenditure values among fiscal years?*
Response: Actual expenditures are allocated to the year in which they actually occur regardless of the fund year of the encumbrance.

Question 6: *How do your approaches differ when calculating force accounts and other internal expenditures (such as utilities) versus contracted expenditures?*
Response: Through out Transportation Management System (TMS), we are able to track internal labor charges associated with any given project. We do not allocate items such as utilities to projects.

Question 7: *Is there a correlation between budget requests, expenditure estimates and actual amounts expended?*
Response: Owing to the reasons listed in question 2, there is not a strong linkage between budget requests and expenditure estimates. Despite both "estimates" and "actuals" being

assessed together at the end of the year, there is a significant variation between the two. This is so because the percentages used to calculate the "estimates" are old and ought to be revised.

Question 8: *How do you account for the lag between the time expenditures are incurred (thereby improving conditions) and time of subsequent inspections (see question 2)?*
Response: We do not feel this lag time is material since inspections are so frequent—100% sample size each year; hence do not take it into account.

Question 9: *Are there any improvements that can be made to the process of linking condition targets and expenditure requirements?*
Response: Yes, one area we feel we could improve upon in establishing expenditure estimates is that we could establish a unique paydown estimate for each asset class (pavements versus bridges). Currently we use the same payout estimate for all asset classes.

Section D: The Allocation of Costs among Capital, Preservation, and Maintenance Categories

Question 1: *Do you allocate costs among capital, preservation, and maintenance categories? If so, what methodology do you use? Is this methodology used for general asset management, budgeting and GASB 34 financial reporting purposes?*
Response: Yes, we allocate costs between capital and maintenance. We do not use the term preservation (but would agree with the GASB definition of preservation since most of the time maintenance is going to extend lives). We use GASB asset management forms to determine percentage breakdowns. Yes, the same methodology is used for all.

Question 2: *Under GASB 34 definitions, maintenance costs are those that allow an asset to continue to be used during its originally estimated useful life. Capital costs increase the capacity or efficiency of the asset. "Preservation" costs generally are considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life, but do not increase the capacity or efficiency of the asset. Are your general asset management, budgeting, and GASB 34 financial reporting definitions of these categories consistent with the aforementioned GASB 34 definitions? Is there a clear definition of preservation costs (for extending lives only) that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized?*
Response: For GASB, we really only use the terms capital and maintenance, with preservation included in maintenance. Capital includes addition and replacement. For budget purposes we use all three terms.

Question 3: *Have there been any changes in how costs are allocated since the introduction of GASB 34? In Ohio DOT's response to our 2002 GASB 34 survey you indicated that you implemented a CIP system to address the new reporting requirements. Please describe this new system and your experience with it in the years since then.*
Response: No significant changes have been made. Minor tweaks have been made as we have learned more and as we have been audited over the years. The CIP system (which is a sub-system within the appropriations system) has been a valuable tool in allowing us to allocate costs according to GASB requirements. The system itself is good, but we currently require the Districts to submit GASB asset management forms either in the form of hard copy or electronic, then CO manually enters the percentages into CIP. We feel this could be improved upon.

Question 4: *How are networks and subsystems defined for cost estimating purposes? Are they the same as for financial reporting (RSI) purposes?*
Response: Networks are bridges and pavements. Sub-systems are priority and general for pavement.

Question 5: *Which group within your agency is responsible for allocating costs among the aforementioned categories (capital, maintenance, and preservation)?*
Response: Finance is responsible for allocating costs among these categories based on the GASB asset management forms received from the Districts.

Question 6: *Do you use automated systems or manual methods to allocate costs? To what extent?*
Response: We use a data warehousing tool (BI Query) to extract data from CIP, Ellis, and TMS. This data is dumped into Excel to complete the allocations. As such, currently, the process is manual.

Question 7: *For projects that have both capital and preservation elements, do you allocate costs between the two categories? If so, what is your methodology for doing so?*
Response: Yes. We do a percentage breakdown for capital addition versus capital replacement. It is all based on the GASB asset management forms submitted by the Districts.

Question 8: *What degree of confidence do you have in the accuracy of the allocation of costs among the three categories?*
Response: Overall confidence is good. You always have the issue of turnover and training to ensure consistency during transition of personnel.

Question 9: *Are there any improvements that can be made to the process of allocating costs among capital, preservation, and maintenance?*
Response: It would be nice if we could automate the update of percentages in a little more of an automated fashion, and it would be nice to be able to track changes in the percentages in a more automated way from the original submission of the GASB form at the inception of a project to the GASB form submission after the project is sold. We're hoping this review will help us identify other improvements that we can make.

Section E: Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Question 1: *Describe your accounting procedures for purposes of reporting infrastructure additions, retirements, and replacements in the CAFR; and, if different, for purposes of general asset management and budgeting.*

Additions:
Response: Any expenditures made during the year are picked up from our accounting and TMS systems and allocated to additions based on the percentages of record. This is done once a year at the conclusion of the fiscal year.

Retirements (none identified in the 2005 CAFR—page 104):
Response: This is an area we have improved upon. In the FY 2006 audit (based on FY2005 data) the state auditors noted that we did not record pavement and bridge deletions. For bridges we take snapshots of the files from the first and second year and account for any that were on the first and not on the second. Not all bridges are a result of a deletion since each bridge has a unique number and some of the bridges are "retired" because they are replaced as opposed to truly being deleted. For pavements the data comes from the Base Transportation Reference System (BTRS). Retirements have been recorded for Fiscal Year 2006.

Replacements of infrastructure assets:
Response: Same as additions, based on expenditures made during the year and allocated according to current GASB asset management forms.

Question 2: *Has your accounting methodology for these items changed since the implementation of GASB 34?*

Additions:
Response: No

Retirements (none identified in the 2005 CAFR—page 104):
Response: Retirements were not originally included in the data used for GASB 34 reporting. The source for data has been the pavement and bridge management systems. These system associated condition data with the active inventories. Recently, the road inventory system has been incorporated as a source to reconcile asset retirements.

Replacements of infrastructure assets:
Response: No

Question 3: *Describe the extent to which your financial accounting processes are manual and/or automated?*
Response: We have a highly automated accounting system [i.e., Construction Management System (CMS)]. As estimates are completed in CMS, they are transferred to the ODOT Appropriation Accounting system (AA). The accounting system then creates a voucher which is transferred to our State Accounting System (SAS). A hard copy of the voucher is delivered to state accounting to support the voucher. A manual accounting process is used for retirements.

Question 4: *If processes are exclusively manual, do you have plans to implement an automated system?*
Response: There are some invoiced costs that we pick up that don't come through CMS and are a little more manual. At the present time, the State of Ohio is expected to implement a statewide enterprise system. Although we do not fully understand how processes will change, our current understanding is that submission of invoices will be completed through some sort of scanning process. The detailed processes are still being developed and communicated.

Question 5: *Are there any improvements that can be made to the process of accounting for additions, retirements, and replacements of infrastructure assets?*
Response: The biggest issue is that ODOT doesn't receive credit for replacing structures even though the new structure is considerably more valuable. Overall, we feel comfortable that the process is working fairly well. We are sure there are improvements that can be made. We hope this study will help us identify some improvements that we could make based on how other states are doing things.

Section F: Potential Effects on Bond Rating

Question 1: *Does your agency or government issue bonds to finance infrastructure?*
Response: Yes.

If yes, which agency is your rater?
Response: Fitch, Moody's, and Standard & Poors

Question 2: *What specific information do you provide to the bond rating agency? Is it the same or how does it differ from what is reported in the CAFR?*
Response: Primarily, they ask which projects the funds will be used on. They also ask about coverage ratios and request revenue projections and federal reimbursement projections.

Question 3: *Has the bond rating agency requested additional/follow up information? If so, what have they requested?*
Response: No.

Question 4: *Has there been a change in your bond ratings as a result of new infrastructure accounting practices or implementation of GASB 34 requirements? If so, how has it affected your costs?*
Response: No. Our GARVEE rating was lowered one level from Aa3 to Aa2 by Moody's on the Butler TID refunding due to coverage and air quality issues. Other than that, there were no changes in the past 5 years on state bonds or GARVEE issues.

Question 5: *What factors are important in the rating process?*
Response: Anticipated revenue certainty, debt service coverage ratios, and whether or not federal and state revenue projections will be met.

Section G: Operational and Financial Impacts of GASB 34 Reporting

Question 1: *Has your organizational approach (i.e. planning, etc.) changed since using the modified approach of GASB 34?*
Response: No.

Question 2: *Is the information on condition assessments shared, both internally and externally? If so, how is this information shared?*
Response: Condition information is reported annually as part of the District Multi-Year Work Plans. Biennially, the 2-year business plan reports a summary of bridge, pavement and maintenance conditions. Condition assessments are available internally from the Pavement and Bridge management systems. A corporate data warehouse is accessible to agency employees. Condition information is shared externally through reports, GIS data files and by requests.

Question 3: *Are external organizations (e.g., public interest, higher education, etc.) interested in your operational and financial reporting? If so, to what extent?*
Response: We have several entities that request our annual financial reports.

Question 4: *Since GASB 34, what has been the trend in condition assessments for assets? How does your DOT explicitly or intuitively define good asset management (e.g., balancing cost and results of asset management) Is there a point of deterioration where asset management is no longer worth it?*
Response: Bridge and pavement conditions have continued to improve along a trend that began in 1998.

Question 5: *To what extent has the RSI been subjected to auditor scrutiny? Has auditor scrutiny increased or decreased since adopting GASB 34?*
Response: The state auditor has shown interest in the GASB 34 reporting and requests information annually. They spend a substantial amount of time looking at GASB 34 and the accuracy of the system and data. In 2006 they identified the fact that we had errantly not reported any deletions. As a result of this increased scrutiny, audits costs have doubled.

OREGON DOT WORKSHOP

Workshop Date: October 18, 2006

Participants:
Bruce Johnson, State Bridge Engineer, Oregon DOT, Bridge Section
Bert Hartman, Interim Bridge Program Engineer, Oregon DOT, Bridge Section
Robert Trevis, Culvert Design Engineer, Oregon DOT, Geo-environmental Section
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Special notes for the Oregon DOT Workshop: The thrust of the questions below were designed to determine the relationship, or lack thereof, between asset management and financial reporting under GASB 34. As noted in the State's CAFR, Oregon DOT has elected to depreciate infrastructure assets rather than to use the "modified approach," which would report preservation costs under a qualified asset management system. In ODOT's Annual Financial Report, capital assets are charged to expenditures when acquired. These assets are not reported in the financial statements, but are included in the notes to the Department's Annual Financial Report.

At the same time, we noted with great interest the robust asset management and performance measurement (Service Efforts and Accomplishments) plans and programs of the State of Oregon and ODOT. Accordingly, in order to meet the needs of this research, we concentrated on pavement and bridge condition, Oregon Benchmark 72. During the workshop we obtained detailed information on the characteristics of and factors surrounding this benchmark. While the condition assessment questions in Sections A–C below are typically asked in the context of the "modified approach," ODOT considered the questions based on its existing and planned asset management and performance measurement programs.

Section A: Process for Setting Condition Targets

Question 1: *What process do you use to determine which condition targets (for example, minimum percent of pavement meeting minimum condition levels) will be used for each asset class? Of these, what is the preferred process? Is this process used for both general asset management purposes and for reporting in the Comprehensive Annual Financial Report (CAFR)? If not used for both, why? What are the differences?*

Pavements
Response: Condition targets are set by the Statewide Pavement Committee, in accordance with the Oregon Highway Plan (1999).

Bridge
Response: In ODOT's Annual Performance Progress Report, prepared for the legislature with budget documents each biennium, bridge condition is measured as a percent of state highway bridges that are not deficient. This measure has been reported since 1998. ODOT's related goal is to "move people and goods efficiently" and the Oregon context is Oregon Benchmark #72(b)(i) "Percent of State Bridges in 'Fair or Better' condition." Since 2000, the actual percent of state highway bridges that are not deficient has declined from 71% to a low of 68% in 2005 and is at 69% for 2006. The decline from 71% to 68% reflected a change in methodology. A

higher percentage of bridges with sufficient condition ratings are better. However, the target was at 66% in 2000 and has remained at that level since. Bridges are expected to deteriorate at an increasing rate, while funding levels are too low to keep pace with repairs and replacements. Of late, there have been funding cutbacks because of increased debt repayments. This bridge performance measure is used for general asset management purposes only. Because ODOT has elected to report assets in the CAFR using the "depreciation" rather than the "modified" approach, bridge performance is not presently reported in the CAFR.

Question 2(a): *What Performance measures are used to express these targets? Are there any measures of customer satisfaction with system performance?*

Pavements
Response: No customer surveys are used.

Bridges
Response: See Question 1 above. There are no direct measures of customer satisfaction. Except for major water crossings, the customer may not even notice when they are using a bridge. Since the customer does not see the superstructure or substructure, it would be difficult for the customer to judge anything except the condition of the deck and load restrictions.

Question 2(b): *Pavements*
The Benchmark report indicates the following measure—Percent of pavement miles rated fair or better out of total lane miles in the State highway system. Could you kindly provide us with more information on the elements making up the benchmark, what the targets are for each of the elements, and most important how they were determined and by whom?
Response: For Interstate and National Highway System (NHS) Highways, a series of index scores are used as performance measures. These include the Overall Index, Rut Index, Fatigue Index, Patch Index, No Load Index, and Raveling Index. The Overall Index is used to determine the condition rating (Good, Fair, Poor, etc.) of the pavement. For Non-NHS Highways—a subjective Good-Fair-Poor rating number is used to determine the condition rating of the pavement management. The detailed distress data from the Distress Survey procedure is summarized into index values that represent the range of pavement conditions observed in the field. The condition index values are a function of distress type, distress severity, and distress quantity present in the pavement surface. The index values have been established to range from 0 to 100. Larger index values indicate better pavement conditions. For example, a new pavement with no distress is assigned an index value of 100. The distance of a tenth-mile has been selected as the length of a standard increment for which distress data are collected for calculation of condition index values. Once tenth-mile condition index values are determined, condition index values are calculated for relatively homogeneous pavement management sections. These sections vary in length depending on the factors such as construction history. To calculate indices, each tenth-mile increment within a given section is surveyed via the Distress Survey procedure. Using the distress data, a rut index, raveling index, patching index, fatigue index, and no load index are computed for each tenth-mile increment. For a given pavement management section, the tenth-mile rut indices are then averaged to produce a pavement management section rut index value. Similarly, the other indices for a given pavement management section are calculated by averaging the tenth-mile indices. To determine an overall condition index of a pavement management section, each tenth-mile raveling index, patching index, fatigue index, and no load index is combined into one tenth-mile index value. This tenth-mile index value is compared to the tenth-mile rut index value. The lower of the index values is determined to be the "tenth-mile overall condition" index value. Next, to determine the overall pavement management section condition index, the "tenth-mile overall condition" indices are averaged. For calculation of an index value for a given tenth-mile section, the

distress(es) found in the pavement surface is categorized by type (fatigue cracking, transverse cracking, longitudinal cracking, etc.) and severity (low, moderate, or high) and then quantified. Interestingly, roughness indicators are not used in the pavement score (though the data are collected and stored).

Bridge
The Benchmark report indicates the following measure—Percent of State highway bridges that are not deficient.
Response: Classification of Deficient Bridges is conducted nationally by the Federal Highway Administration. It is reported in the National Bridge Inventory (NBI) as Sufficiency Status. A bridge can be considered deficient if it meets federal criteria which establish it as either structurally deficient or functionally obsolete.

Could you kindly provide us with more information on the elements making up the benchmark, what the targets are for each of the elements, and most importantly, how they were determined and by whom?
Response: Bridge condition is calculated nationally using the NBI data. The inventory applies the same standards across all states, and reports a national average of 78% state-owned bridges rated "not deficient." The Oregon rate of 69% falls significantly below this average. The Oregon performance target was set at 66% because of an anticipated worsening in bridge condition as funding levels decline due to the payback of the OTIA III Bridge Bonding Program. Also, there is a large population of bridges built in the 1950's that are nearing the end of their useful life. The target was recommended by the State Bridge Engineer and approved by ODOT management.

Question 3: *Has this preferred methodology changed since the implementation of GASB 34? If so, list the specific changes.*

Pavements
Response: There have been no changes in methodology since the implementation of GASB 34, although the specific targets have changed.

Bridge
Response: There have been no changes since the implementation of GASB 34.

Question 4: *Please describe any aspects of the approach used to set performance targets you consider to be unique to your agency or instrumental in the success of the approach?*

Pavements
Response: Targets are reevaluated every 2 years as part of the STIP(Statewide Transportation Improvement Program) process.

Bridge
Response: There is nothing unique about bridges that are not classified as being deficient by federal standards. It is a very straightforward way to measure bridges that need to be rehabilitated or replaced. It involves both visual inspection data and load rating/posting status data.

Question 5: *Which group within your agency is responsible for setting condition targets? Do they meet to review results and/or adjust targets? What is the chain for approving condition targets?*

Pavements
Response: The pavement management section is responsible for recommending the performance targets. Once recommended, the targets have to be approved and ratified by the Statewide Pavement Committee.

Bridge
Response: The Bridge Engineer is responsible for recommending the performance targets. He relies on data from the Bridge Program Unit and input from the unit manager. These performance targets are reviewed every 2 years as part of the STIP development process and approved by ODOT management.

Question 6: *How often does your agency set condition targets?*

Pavements
Response: Every two years.

Bridge
Response: Condition targets are set every 2 years as material is prepared for the legislative session.

Question 7: *Which computer-based management systems if any do you use for setting condition targets?*

Pavements
Response: Forecasting work is done using MS Excel or MS Access with internally developed programs. Inventory information is stored in IDIS (the internal mainframe). ODOT also uses a vendor based system—Agile Assets. This is a somewhat antiquated system in need of updating.

Bridge
Response: The data that is used to determine the current condition of the bridge inventory is from the Oregon portion of the National Bridge Inventory. This data is stored in the PONTIS, software developed by AASHTO. As of now, the PONTIS software has only been used to store data, not for predictive purposes. Once the necessary models are developed, scenarios can be run to see the effect of different investment strategies on the bridge inventory.

Question 8: *Describe the extent to which your agencies' budgeting constraints affect condition targets (i.e., are condition targets based on budgets or vice versa)?*

Pavements
Response: Budgets are a key driver of condition targets.

Bridge
Response: Condition targets are based on budgeting constraints. The only way to improve the condition of the population of bridges on a long-term basis is to have the level of investment be greater than the level of deterioration. There are some 1930s bridges that are classified as being deficient (Functionally Obsolete), yet they are on secondary routes and can carry all permit loads. There are other timber bridges that are not classified as being deficient, yet they are posted and are a barrier to freight. Making good decisions as to what bridges to fund may involve keeping some bridges that are deficient while replacing some bridges that are not deficient.

Question 9: *What impact if any has GASB 34 reporting targets had on the setting of your condition targets? For example, did GASB 34 considerations cause your agency to set relatively conservative condition targets?*

Pavements
Response: No GASB 34 reporting targets have been set for pavements.

Bridge
Response: No GASB 34 reporting targets have been set for state bridges.

Section B: Methods of Condition Assessment

Question 1: *With targets established as described in Section A, please now describe your condition assessment procedures, in terms of inspection protocols, etc.*

Pavements
Are all pavements inspected each year or on a sample basis (see question 3 below)? What type of training are the inspectors subject to? Is there any use of technical equipment in the assessments? How are measurements made of each of the elements described in Section A Question 2 above?
Response: Survey procedure—two-person crews trained in distress identification procedures conduct condition surveys. Training includes proper distress identification using 1/0 mile sections of the State Highway System. These standardized sections will include examples of each of the four pavement types. For a given pavement type, the standardized sections will include typical examples of each type of distress. The condition survey will be accomplished via a "side window" survey from a slow-moving vehicle operating on the adjacent shoulder. If conditions do not permit the safe operation of a vehicle along the shoulder, then the crew will either skip the segment or conduct the survey on foot being careful to not endanger themselves or the motoring public. The highway will be rated in 0.1-mi increments. The distresses will be recorded for each segment rated. The distress will be identified according to the descriptions provided in the ODOT manual. The following is a brief summary of the distress survey procedure: (1) Begin at the appropriate milepoint marker; (2) Select the appropriate data entry screen or survey form (AC, JCP, or CRC); (3) Complete the section description information; (4) Survey the 0.1-mi segment; (5) Record information on the computer or survey form; and (6) Return to step one and repeat the process. When recording the survey data, any unusual conditions are noted in the comment section. Also, long bridge decks, which fall within the section, are not rated. Frequently, only partial miles will be rated because of construction activity, a bridge deck, or for safety reasons. In the event one or more 0.1-mi segments are not rated within a given mile, an "N" is placed in the appropriate field to indicate that the segment was not rated. The aforedescribed survey is conducted every 2-years with the help of college interns. These interns are trained via a 2-week training program.

Bridges
Are all bridges inspected each year or on a sample basis (see question 3)?
Response: Bridges are inspected in accordance with the Code of Federal Regulations, 23 Highways—Part 650, Subpart C—National Bridge Inspection Standards. For bridges meeting National Bridge Inventory standards, the inspection interval is not greater than 2 years. All bridges in Oregon, including those owned by local governments, are inspected by ODOT.

What type of training are the inspectors subject to?
Response: The inspector's qualifications for individuals in charge of a bridge inspection team are consistent with the code referenced above. This is a combination of training, experience, and professional registration.

Is there any use of technical equipment in the assessments?
Response: Bridge inspection is primarily based on visual observation. Technical equipment such as timber boring equipment and SCUBA gear for the underwater inspection team is used to complement the visual observations.

How are measurements made of each of the elements described in Section A 2 above?
Response: The inspector does not directly determine if the bridge is deficient. The ratings for the Deck, Superstructure and Substructure, along with other items in the National Bridge

Inventory, are used by FHWA "edit update" program to determine if the bridge is either structurally deficient or functionally obsolete. These other items include load rating data and traffic volume. The commentary in the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nations Bridges notes that the condition ratings are applied correctly if they describe the overall condition of the entire component, not a localized or nominally occurring condition. Oregon inspectors use the Oregon Department of Transportation Bridge Inspection Pocket Coding Guide. This document provides additional guidance on the proper coding of all bridge items, including the ones used directly in the calculation of the performance measures.

Other Infrastructure
Response: None, no statewide process.

Question 2: *Has your condition assessment methodology changed since the implementation of GASB 34?*

Pavements
Response: No; only small refinements. However, by 2008, Oregon DOT plans to include some form of safety measure.

Bridge
Response: The condition assessment methodology has changed since the implementation of GASB 34. However those changes were not influenced by GASB 34. The condition assessment of concrete elements was changed when the problem of shear cracks was first encountered, and again when the results of the Oregon State University tests showed that cracked structural components retained more strength than was originally thought.

Question 3: *What is the approximate sample size for your condition assessments (i.e., proportion of each asset class assessed)? How often do you intend to perform condition assessments? Has the frequency of condition assessments changed since GASB 34? Please mark your answers in the table below.*

	Sample Size	Frequency	Has frequency changed since GASB-34?
Pavements	100%	Every 2 years	N/A
Bridges	100% (i.e. 2680 bridges)	Every 2 years	N/A
Other Infrastructure	N/A	N/A	N/A

Question 4 (a): *Please describe any aspects of the approach used to conduct condition assessments you consider to be unique to your agency or instrumental in the success of the approach.*

Pavements
Response: Nothing unique to note of.

Bridge
Response: Oregon DOT inspects all bridges (i.e., State and local owned bridges). In addition, the Bridge Inspection Pocket Coding Guide mentioned above is an excellent resource for the bridge inspectors. Detailed descriptions and pictures are used to describe condition states. These aid the inspector to properly code the condition of each bridge. Further, the quality assurance process mentioned in (b) below contributes to the success of our condition assessments.

Question 4 (b): *Do you utilize quality control/quality assurance processes to ensure the consistency and the accuracy of the assessment?*

Pavements
Response: Yes, in order to ensure consistency and accuracy ODOT has overlapping assessments (i.e., different teams assess the same location). Furthermore, there are numerous other "red-flags" built within the reporting system.

Bridge
Response: There is a robust quality assurance program. Each year, the bridge inspectors go as a group to all of the regions (i.e., five regions) and review the work of the inspector in that region. These quality assurance trips (which cover 5% of all the inspections) are used both to review the work of the inspector in that region, and as a training opportunity for all the inspectors so that the inspections that are accomplished statewide are consistent.

Question 5: *What group within your agency is responsible for conducting condition assessments?*

Pavements
Response: The Pavement Section (ODOT).

Bridge
Response: The bridge operations group is responsible for conducting bridge inspections. There is a bridge inspector in each region; some regions also have an assistant bridge inspector. The headquarters portion of the bridge operations group includes the senior bridge inspector and the unit manager. These two individuals provide support to the region bridge inspectors and manage the quality assurance program.

Question 6: *Do you outsource any component of your condition assessment? If so, how is it working?*

Pavements
Response: None currently. This may change with the transition to an automated condition assessment system.

Bridge
Response: The local agency bridge inspections are all done through the use of consultants. For state bridges, some of the inspections that involve climbing on major structures are also consulted out. These include routine inspections and also specialty inspections such as fracture critical member inspections.

Question 7: *Which automated data collection systems, if any, do you use for condition assessments?*

Pavements
Response: None currently. However, development of an automated system is under consideration, in part because of safety concerns with the current program of visual inspections.

Bridges
Response: Since the National Bridge Inspection standards are based to a large degree on visual inspection, the actual assessment of the members is not automated. There is some automation in that vertical clearance is now measured with lasers mounted on a vehicle. This provides a permanent electronic record of the vertical clearance. Also, a number of bridges have been instrumented and the data is sent to the headquarters unit. These include data on seismic response, cathodic protection of coastal bridges, crack monitoring, proof load testing, and moveable bridge elements. Oregon State University has instrumented a number of bridges to measure the response to loading. ODOT has also instrumented several bridges but some of which can be monitored remotely at ODOT Headquarters in Salem.

Question 8: *What is your agency's primary motivation in performing condition assessments? Is it a result of GASB 34 or for other reasons such as performance reporting?*

Pavements
Response: GASB 34 was not a primary motivation for performing condition assessments.

Bridges
Response: The agency's primary motivation in performing condition assessments of bridges is to ensure safety for those who use the bridges. Also, ODOT uses the data extensively for planning, maintenance, reconstruction, and appropriations. GASB 34 is not a primary motivation for performing condition assessments; the motivation is to ensure the bridges meet standards that are required by the Code of Federal Regulations.

Question 9: *Are there any improvements that can be made to the current condition assessment process?*

Pavements
Response: ODOT is looking into the potential of automating the process of condition assessments.

Bridges
Response: Our inspectors currently print out the existing inspection to use as a guide for the inspection that is being conducted. Some states use portable electronic devices for data entry and eliminate the paper and the necessity to update the inspection at a later time using a computer. We continue to look at this option, but know that the results are mixed as to which method is best. The inspectors already carry a large amount of equipment as it is.

Question 10: *Is your condition assessment methodology and extrapolated results (samples) consistent and replicable among multiple regions? If not, why not?*

Pavements
Response: Yes.

Bridges
Response: The condition of the inventory varies with the location of the bridges. Timber bridges in the marine environment near the coast will show more deterioration than a similar bridge in a drier part of the state. The same is true for concrete where corrosion of the reinforcement is a concern. Also, a bridge on a route with few heavy vehicles will tend to be in better condition than a similar bridge on a heavily used truck route. Once environmental concerns are removed, the results are replicable among the regions. The reasons for this are the Bridge Inspection Pocket Coding Guide and the active quality assurance program that the inspectors participate in.

Question 11: *What degree of confidence do you have in your condition assessments (for either financial reporting, performance measurement or asset management purposes)?*

Pavements
Response: High degree of confidence.

Bridges
Response: Bridge condition data has been maintained for many years. While the numbers used to measure performance do vary with time, the changes are gradual and reflect the large inventory and the relatively small bridges addressed each year by either repair or replacement. The active quality assurance process helps to ensure consistency between the different regions.

Question 12: *In our experience, the condition assessment process for pavement is more advanced than for other asset classes. Has your agency managed to consistently report condition assessments for other asset classes?*
Response: No, to date condition assessment has focused on pavements and bridges.

Section C: Link Between Condition Targets and Expenditure Requirements, Including Budgetary Requirements

Note: Within ODOT, the linkage between condition targets and expenditure requirements has been primarily developed for bridges and most of the discussion in this section concerns that asset class.

Question 1: *Who in your agency is responsible for estimated and actual expenditure calculations for achieving condition targets for accounting, budgetary or other purposes? Is it the maintenance or financial department or other?*
Response: At the highest level, financial calculations for achieving transportation system conditions are prepared as part of the Oregon Transportation Plan (OTP). The OTP is prepared by the Transportation Development Division and adopted by the Oregon Transportation Commission (OTC). A portion of the OTP is the Highway Needs Study, updated periodically. Biannually, the OTC sets funding targets for transportation improvements, after considering many factors including reports on the effectiveness of previous investment levels in achieving target conditions and other policy goals.

Question 2: *How difficult is it to establish links between condition targets and expenditures?*
Response: It is not difficult to establish a link between condition targets and expenditures for bridges. However, it is only meaningful to do so if there is a strong link between investment policies and condition targets. For example, at the direction of the OTC, the department has changed its bridge investment policy from a "worst first" (a condition based system for project selection) to a more strategic investment policy which currently gives a high priority to support of freight mobility. This has led the bridge program to select more vertical clearance and load capacity projects on freight routes. These improvement types often are needed on bridges that are not classified as deficient, therefore the effect on the condition targets of this investment strategy is nearly random. Other important bridge investments, such as in painting and cathodic protection, also do not influence condition targets directly.

Question 3: *Are expenditure targets based on models/predictions, history, estimated costs of projects, finance and/or other budgetary considerations?*
Response: Expenditure targets are established biannually by the OTC based on recommendations from the Highway Finance Office and Executive staff. A large number of factors including needs, policy, models/predictions, history, estimated cost of projects, finance and/or other budgetary considerations are weighed in the decision making process. Budgets are based on revenues.

Question 4: *How do you approach the calculation of estimated and actual target expenditures incurred during a particular fiscal year?*
Response: The Highway Finance Office maintains a Financial Plan which records estimated and actual target obligations for projects based on a federal fiscal year. Project budget and expenditure information is maintained in the department's accounting system.

Question 5: *When comparing estimated and actual expenditure, is there an allocation of actual expenditure values among fiscal years?*

Response: Project obligations (Financial Plan) are tracked by federal fiscal year. Project expenditures (accounting system—TEAMS) are tracked by state fiscal year or life of the project (inception to date). As such, there are no allocations of expenditure among fiscal years (i.e., this is a strictly cash flow system).

Question 6: *How do your approaches differ when calculating force accounts and other internal expenditures (such as utilities) versus contracted expenditures?*
Response: Practices may vary between or even within Regions.

Question 7: *Is there a correlation between budget requests, expenditure estimates and actual amounts expended? See question 2 above.*
Response: Yes, although as some project's costs increase, lower priority projects (originally included in the Financial Plan) may be postponed or dropped to accommodate higher priority projects.

Question 8: *How do you account for the lag between the time expenditures are incurred (thereby improving conditions) and time of subsequent inspections (see question 2 above)?*
Response: Bridge inspections occur on a regular cycle, usually every two years. There is an inherent lag in data reflecting improved conditions. Bridge condition is a lagging performance indicator. Deficient bridges are cross-referenced against planned or in progress projects when needed to provide a more complete picture of bridge needs. This regularly occurs during the biannual STIP development cycle.

Question 9: *Are there any improvements that can be made to the process of linking condition targets and expenditure requirements?*
Response: See question 2 above. The Bridge Section may consider the development of other performance measures. Condition targets have the advantage of consistent, national reporting, and can be beneficial in establishing and evaluating a long term view.

Section D: The Allocation of Costs Among Capital, Preservation, and Maintenance Categories

Question 1: *Do you allocate costs among capital, preservation, and maintenance categories? If so, what methodology do you use? Is this methodology used for general asset management, budgeting and GASB 34 financial reporting purposes?*
Response: For pavement projects, two inch or greater costs are capitalized; two inch or lower are maintenance costs. Work classification codes are used to distinguish between capital and maintenance within the same project. Preservation costs are not accounted for because we do not apply the modified approach.

Question 2: *Under GASB 34 definitions, maintenance costs are those that allow an asset to continue to be used during its originally estimated useful life. Capital costs increase the capacity or efficiency of the asset. "Preservation" costs generally are considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life, but do not increase the capacity or efficiency of the asset. Are your general asset management, budgeting, and GASB 34 financial reporting definitions of these categories consistent with the aforementioned GASB-34 definitions? Is there a clear definition of preservation costs (for extending lives only) that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized?*
Response: Not applicable in the depreciation approach.

Question 3: *Have there been any changes in how costs are allocated since the introduction of GASB 34?*
Response: Yes, minor refinements to introduce more precision. Now using project management fields rather than financial reporting fields.

Question 4: *How are networks and subsystems defined for cost estimating purposes? Are they the same as for financial reporting (RSI) purposes under the modified approach?*
Response: Two systems—Highway (20-year depreciation schedule) and Bridge/Tunnel (75-year depreciation schedule).

Question 5: *Which group within your agency is responsible for allocating costs among the aforementioned categories (capital, maintenance, and preservation)?*
Response: Financial Services (based on input from various departments).

Question 6: *Do you use automated systems or manual methods to allocate costs? To what extent?*
Response: ODOT uses a MS Access and spreadsheets.

Question 7: *For projects that have capital and preservation elements, do you allocate costs between the two categories? If so, what is your methodology for doing so?*
Response: Yes, by work classification codes.

Question 8: *What degree of confidence do you have in the accuracy of the allocation of costs among the three categories?*
Response: High degree of confidence.

Question 9: *Are there any improvements that can be made to the process of allocating costs among capital, preservation, and maintenance?*
Response: None.

Section E: Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Question 1: *Describe your accounting procedures for purposes of reporting infrastructure additions, retirements and replacements in the CAFR; and, if different, for purposes of general asset management, the Department's Annual Financial Report and budgeting.*

Pavements Additions
Response: Based on work classification codes additions are reported at the end of the year. The reported work orders ought to be fully completed.

Retirements
Response: Based on work classification codes. There are retirements due to jurisdictional transfers. The process for recording these needs improvement.

Replacements of infrastructure assets
Response: See additions above.

Bridge Additions
Response: The Bridge Program Unit provides (annually) a list of new bridges (bridge numbers) to Financial Services. These include both additional bridges and replacement bridges.

Retirements
Response: The Bridge Program Unit provides (annually) a list of retired bridges (bridge numbers) to Financial Services.

Replacements of infrastructure assets
Response: See additions above.

Question 2: *Has your accounting methodology for these items changed since the implementation of GASB 34?*

Pavement
Response: No.

Bridge
Response: No. However, it is apparent that a total cost of each new or replacement bridge is required for asset valuation purposes. There is not currently a systematic way of determining and providing this information to Financial Services. The best and most cost effective way of obtaining this information is currently under discussion.

Question 3: *Describe the extent to which your financial accounting processes are manual and/or automated?*
Response: The financial accounting system is automated, but is not directly tied to asset inventory and valuation information.

Question 4: *If processes are exclusively manual, do you have plans to implement an automated system?*
Response: Not applicable.

Question 5: *Are there any improvements that can be made to the process of accounting for additions, retirements, and replacements of infrastructure assets?*
Response: Two potential improvements: (1) improve methodology to capture jurisdictional transfer of assets (as noted above), and (2) improve the method for determining the allocation of value between bridges and highways.

Section F: Potential Effects on Bond Rating

Question 1: *Does your agency or Government Issue bonds to finance infrastructure?*
Response: Yes.

If yes, which agency is your rater?
Response: Standard & Poor's; Fitch; and Moody's.

Question 2: *What specific information do you provide to the bond rating agency? Is it the same or how does it differ from what is reported in the CAFR?*
Response: Entire financial report plus additional information as requested.

Question 3: *Has the bond rating agency requested additional/follow up information? If so, what have they requested?*
Response: Yes, various qualitative and quantitative information items related to specific debt issue.

Question 4: *Has there been a change in your bond ratings as a result of new infrastructure accounting practices or implementation of GASB 34 requirements? If so, how has it affected your costs?*
Response: No change in recent years.

Question 5: *What factors are important in the rating process?*
Response: Debt coverage.

Section G: Operational and Financial Impacts of GASB 34 Reporting

Question 1: *Has your organizational approach (i.e., planning, etc.) changed since using the modified approach of GASB 34?*
Response: Not Applicable

Question 2: *Is the information on condition assessments shared, both internally and externally? If so, how is this information shared?*
Response: Internally, it is shared with ODOT committees and the Oregon Transportation Commission. Externally, it is reported biannually to the state legislature as part of the STIP development process.

Question 3: *Are external organizations (e.g., public interest, higher education, etc.) interested in your operational and financial reporting? If so, to what extent?*
Response: The reports are mailed to approximately 25 to 30 people annually. Those in the mailing lists include bond raters, bond counsels, officials from the Treasuries Department, State controllers, etc. Condition assessment information is occasionally requested, but more from internal sources than external.

Question 4: *Since GASB 34, what has been the trend in condition assessments for assets? How does your DOT explicitly or intuitively define good asset management (e.g., balancing cost and results of asset management, is there a point of deterioration where asset management is no longer worth it)?*
Response: The trend has been improving conditions for pavements and declining conditions for bridges due to funding allocations. Oregon DOT is in the early stages of implementing an asset management program and definitions of good asset management are being developed. Discussions have been focused on life cycle costs and effective resource utilization.

TEXAS DOT WORKSHOP

Workshop Date: April 18, 2006
Participants: **Duane Sullivan,** Director, Accounting Management Section, Finance Division, Texas DOT
Keith Ramsey, Director, Field Operations Section, Bridge Division, Texas DOT
Joe Graff, Deputy Director, Maintenance Division, Texas DOT
Bryan Stampley, Senior Pavement Engineer, Pavement Section, Construction Division, Texas DOT
James Bass, Chief Financial Officer, Finance Division, Texas DOT
Steve Simmons, Deputy Director, Texas DOT (via telephone interview).

The following questions in each section were open-ended to encourage an exchange of ideas. During the oral interview we expanded on each of the questions, as appropriate, to address specific issues.

Section A: Process for Setting Condition Targets

Question 1: *What process do you use to determine which condition targets (for example, maximum percent of pavement meeting minimum condition levels) will be used for each asset class? Of these, what is the preferred process? Is this process used for both general asset management purposes and for reporting in the CAFR? If not used for both, why? What are the differences? (You may find that some of your answers to questions A questions 2–9 of this section also apply here. If so, simply cross-reference to those answers and add appropriate commentary here.)*

Pavements
Response: In August 2001, the Texas Transportation Commission set a statewide goal to have 90% of Texas pavements in "Good" or better condition within the next 10 years. "Good or better condition" was defined by the Pavement Management Information System (PMIS) Condition Score greater than or equal to 70 (Only travel lanes are included in the PMIS score, i.e., no ramps, etc.). The PMIS Condition Score combines pavement surface distress (such as rutting, cracking, potholes, punchouts, and patches) and ride quality into a single index that ranges from 1 (worst condition) to 100 (best condition). However, PMIS scores are not used for GASB 34 reporting. Instead, condition assessments conducted pursuant to the Texas Maintenance Assessment Program (see below) provide the basis for the data reported in the RSI.

Bridge
Response: In August 2001, the Texas Transportation Commission established a statewide goal for TxDOT that within 10 years at least 80% of the bridges in Texas would be in good or better condition. Structurally deficient, functionally obsolete, and sub-standard bridges need improvement and, therefore, are not in good or better condition. In September 2001, TxDOT adopted an additional goal to accelerate the upgrade of all structurally deficient on-system bridges, giving highest priority to critically deficient bridges, in an effort to eliminate more quickly all structurally deficient on-system bridges.

TxMAP
Response: The Texas Maintenance Assessment Program (TxMAP) was developed by the Maintenance Division in 1999 to document the condition of the highway system.

Question 2: *What Performance measures are used to express these targets? Are there any measures of customer satisfaction with system performance?*

Pavements:
The CAFR RSI indicates that for each section of highway observed, twenty-one elements separated into three highway components are assessed scores from 0 to 5 (0=NA, 1=Failed, 2=Poor, 3=Fair,

4=Good, 5=Excellent) in order to determine the condition of the highways. Each element within a component is weighted according to importance to determine the overall condition of the highways. The overall score is converted to a percentage measurement for reporting (1=20%, 2=40%, 3=60%, 4=80%, 5=100%). The Texas Highway Commission has adopted a minimum condition level of 80% for the Interstate system and 75% for the Non-Interstate system. Could you kindly tell us more about the detailed characteristics of the scoring and weighting? Illustrations would be appreciated.

Response: TxDOT measures ride quality and rates pavement distress on the entire State-maintained highway network each year. The ride quality measurements and distress ratings are then stored in the PMIS database, which (among other things) calculates a series of three scores: Condition Score, Distress Score, and Ride Score. Condition Score, which combines ride and distress, ranges from 1 (worst condition) to 100 (best condition). Distress Score ranges from 1 (most distress) to 100 (least distress). Ride Score ranges from 0.1 (roughest) to 5.0 (smoothest). PMIS also contains International Roughness Index (IRI) measurements, in units of inches (of roughness) per mile that typically range from 1 (smoothest) to approximately 950 (roughest). IRI is similar to, but is not exactly the same as the PMIS Ride Score, and is used as a roughness specification for pavement construction in Texas. When interpreting PMIS Condition Scores, it should be noted that traffic and speed limit are included in the calculated score values. A road with high traffic (based on Average Daily Traffic) or high speed (based on Speed Limit) must have less distress and smoother ride to give the same PMIS Condition Score as a road with lower traffic or lower speed. Although this tends to give lower Condition Scores in urban areas, it also provides advance warning of pavement problems in high-traffic, high-speed, areas where scheduling treatments might be more difficult.

Bridges

The CAFR RSI indicates that although bridges are an integral part of the highway system, the state has elected to depreciate bridges. Therefore, they are not reported using the modified approach. In our prior research we were informed that this combination approach was used because the bridge management system (developed in house) includes a good inventory from which to make depreciation calculations, but does not have asset management functions. Another factor was that TxDOT views bridges as having a more definable lifecycle than roadways, so bridges are more appropriate to the depreciation calculation. Could you kindly update us on this matter? If asset management techniques that include condition assessments exist today, please provide us with the relevant detailed information.

Response: TxDOT continues to utilize the depreciation approach for reporting bridges. However, it also continues to develop the asset management capabilities of its bridge management system. Current status is as follows. Classifications of structurally deficient and functionally obsolete are based on National Bridge Inspection Standards (NBIS) criteria. A bridge's structural adequacy and safety, serviceability and functional obsolescence, and essentiality for traffic service is estimated via a numerical evaluation called the Sufficiency Rating (the higher the sufficiency rating, the more sufficient the bridge). The rating is used to determine whether a bridge project is eligible for the Highway Bridge Replacement and Rehabilitation Program (HBRRP). A sufficiency rating of 80 or less is required to qualify for rehabilitation, and a sufficiency rating of less than 50 is required to qualify for replacement. A structurally deficient bridge with a sufficiency rating of between 50 and 80 may qualify for rehabilitation or replacement if justified by engineering or economic analysis. In addition, the Texas Eligible Bridge Selection (TEBSS) provides a formula using scores for bridge attributes to help prioritize bridge replacement and rehabilitation projects to ensure that the neediest bridges are addressed throughout the state. A TEBSS score rating is from 0 through 100, with the higher number the higher priority.

TxMAP

Response: Due to the lack of historical data TxMAP established conservative goals, which were based on a pass/fail rating. Now it has moved toward a numerical rating system ranging from

1 to 5, where 5 is "best." For each section of highway observed, 21 elements separated into three highway components are assessed scores. The overall score is calculated via a "priority multiplier" (i.e., cumulative 1 to 5 ratings of 4 categories—safety, protector investment, user comfort, and aesthetics). This cumulative rating is divided by two, which gives an overall condition rating between 1 and 10 (10 = best). Yes, this procedure does incorporate a public rating system (i.e. measures of customer satisfaction are incorporated into the overall condition rating).

Question 3: *Has this preferred methodology changed since the implementation of GASB 34? If so, list the specific changes.*

Pavement
Response: No change to methodology, however there have been some tweaks to instruments (i.e., hardware).

Bridge
Response: No.

TxMAP
Response: Weightings were established in the first year as a result of GASB 34; since then, there have been minor refinements to the standards.

Question 4: *Please describe any aspects of the approach used to set performance targets you consider to be unique to your agency or instrumental in the success of the approach?*
Response: TxDOT has two sets of goals, a Statewide conservative one for GASB reporting purposes and aggressive goals for individual districts. Accordingly, individual district goals are not reported in financial statements prepared under the provisions of GASB 34 (an optional provision).

Question 5: *Which group within your agency is responsible for setting condition targets? Do they meet to review results and/or adjust targets? What is the chain for approving condition targets? Kindly discuss the role of the Highway Commission as discussed in question 2 above.*

Pavement
Response: The targets are set by the Highway Commission and it has not formally revisited the condition targets since they were established in 2001.

Bridge
Response: The targets are set by the Highway Commission and it has not formally revisited the condition targets since they were established in 2001.

TxMAP
Response: The Maintenance Section is responsible for setting targets, but they have to be formally ratified by the Commission.

Question 6: *How often does your agency set condition targets?*
Response: No change since the 2001 targets were set by the Highway Commission.

Question 7: *Which computer-based management systems if any do you use for setting condition targets?*

Pavement
Response: The ride quality measurements and distress ratings are stored in the PMIS database, which among other things calculates the: Condition Score, Distress Score, and Ride Score. PMIS was developed in-house and does have predictive capabilities (thought they are not used) based on historical data. Currently, PMIS is on the main frame (i.e., not web based).

Bridge
Response: TxDOT maintains its inspection information on each publicly owned vehicular bridge in the electronic Bridge Inspection Database. This database is a repository of information on the characteristics of the bridge and their conditions, and it provides the source of data for descriptions of bridges in this annual report. Furthermore, TxDOT uses an automated information system called the Design and Construction Information System (DCIS) for planning, programming and developing projects. Previously the databases were mainframe inventory systems; however, now these have been converted to an Oracle system.

TxMAP
Response: None used.

Question 8: *Describe the extent to which your agencies' budgeting constraints affect condition targets (i.e. are condition targets based on budgets or vice versa)?*

Pavement & Bridge
Response: Targets are not primarily based on budgets, but budget levels do constrain activity levels.

Question 9: *What impact if any has GASB 34 reporting targets had on the setting of your condition targets? For example, did GASB 34 considerations cause your agency to set relatively conservative condition targets?*

Pavement & Bridge
Response: None.

TxMAP
Response: Yes, GASB 34 considerations did cause the department to set relatively conservative targets for financial reporting purposes. However, as noted above, more aggressive targets are established at the district level for internal management purposes. The more conservative targets are not communicated to the Districts.

Section B: Methods of Condition Assessment

Question 1: *With targets established as described in Section A, please now describe your condition assessment procedures, in terms of inspection protocols, etc.*

Pavements
Response: TxDOT owns 17 vans (TxDOT Profilers), each equipped with five ultra sound devices (to measure rut) and 2 lasers (to measure ride). Other distress data based on visual inspections are collected by 24 two-man teams—all of who are private contractors.

Bridges
Response: Every 6 months visual inspections of the bridges are done; however, the results of these inspections are not documented. Every 2 years a comprehensive inspection is done, the results of which are documented in the Bridge Inspection database.

TxMAP
Response: TxMAP system requires a visual inspection of 21 elements of the highway system in three different components—pavement, roadside, and traffic operations. The entire evaluation procedure requires only two fulltime employees who perform the evaluations with assistance from district personnel. This crew of two surveys 5% and 10% of the non-interstate and interstate highway system in 1-mi segments (in one direction).

Question 2: *Has your condition assessment methodology changed since the implementation of GASB 34? In our initial telephone interview last May we were informed that "refinements"*

(not changes) to the methodology are being made "all the time." Kindly discuss and provide specific examples of a few significant refinements.
Response: No response.

Question 3: *What is the approximate sample size for your condition assessments (i.e. proportion of each asset class assessed)? How often do you intend to perform condition assessments? Has the frequency of condition assessments changed since GASB 34? Please mark your answers in the table below.*

	Sample Size	Frequency	Has frequency changed since GASB 34?
Pavements	100%	Annually	No
Bridges, if applicable	95%	Every 2 Years (visual inspection every 6 months, results of which are not documented)	No
TxMAP	5% non-interstate 10% interstate	Annually	No

Question 4: *(a) Please describe any aspects of the approach used to conduct condition assessments you consider to be unique to your agency or instrumental in the success of the approach.*

Pavement
Response: The condition scores are estimated as multiplicative distress values, as opposed to additive ones.

Bridge
Response: A visual inspection every 6 months, in addition to the standard inspections every 2 years. Also, TxDOT inspects all the bridges in the State, not only the state owned ones (i.e., local bridges are also inspected).

TxMAP
Response: TxDOT uses an additional condition assessment method called TxTAB, which captures asset classes that are not captured via TxMAP. TxTAB observes performance related issues while TxMAP observes condition related issues.

(b) Do you utilize quality control/quality assurance processes to ensure the consistency and the accuracy of the assessment?

Pavement
Response: There is some quality control with instrument calibrations. Also, distress raters are independently audited. In terms of final estimates, a certain percentage of miles have to be within a certain range. If they do not fall within these levels, then the system alerts the user of an error.

Bridge
Response: By standardizing the outsourcing process of consultants, the level of quality control has increased. TxDOT also has a quality control/quality assurance program in place conducted by the Texas Transportation Institute.

TxMAP
Response: Spot checks.

Question 5: *What group within your agency is responsible for conducting condition assessments?*

Pavement
Response: Pavements Section, Construction Division

Bridge
Response: Shared responsibility between district (on the ground actual reporting) and Bridge Division (sets policy, guidance, etc.)

TxMAP
Response: Maintenance Section.

Question 6: *Do you outsource any component of your condition assessment? If so how is it working?*

Pavement
Response: Yes, visual inspections (i.e. distress data) are outsourced. Once these are automated, all components will be assessed "in-house."

Bridge
Response: All components of condition assessments are outsourced. The outsourcing of condition assessments has been a great success, especially after standardizing the outsourcing process (i.e., quality of the process and condition assessments have improved due to uniformity).

TxMAP
Response: No component of the condition assessment is outsourced.

Question 7: *Which automated data collection systems, if any, do you use for condition assessments?*

Pavement
Response: TxDOT Profilers (vans that estimate Rut and Ride). Researching the potential of using automated data collection systems (e.g., video logs) for other distress measures.

Bridge
Response: None.

TxMAP
Response: None. However, TxDOT is on the "look-out" for automated data collection systems such as vans equipped with the ability to measure retro-reflectivity of pavement markings.

Question 8: *What is your agency's primary motivation in performing condition assessments? Is it a result of GASB 34 or for other reasons?*
Response: Primary motivation is asset preservation, not GASB 34 reporting.

Question 9: *Are there any improvements that can be made to the current condition assessment process?*

Pavement
Response: The primary improvement is a shift away from a manual (subjective) process towards one that is automated. In addition, TxDOT wants to move towards an assessment of a full lane rut profile; wants to measure pavement texture rather than skid; and move towards automated high speed deflection measurements.

Bridge
Response: Moving towards an electronic (i.e., paperless) data collection/reporting system (i.e., being able to submit photos, logs, etc.).

TxMAP
Response: In the future, TxMAP will only focus on assets other than pavements. Pavement will solely rely on PMIS. They also want to shift towards an automated system. Currently, no night inspections are done; so, TxMAP may try to put into action a night inspection team.

Question 10: *Are your condition assessment methodology and extrapolated results (samples) consistent and replicable among multiple regions? If not, why not?*
Response: TxDOT believes the results are as consistent and replicable as current technology allows, with recent progress for bridge assets.

Question 11: *What degree of confidence do you have in your condition assessments (for either financial reporting or asset management purposes)?*
Response: High degree of confidence for all reported asset classes.

Question 12: *In our experience the condition assessment process for pavement is more advanced than for other asset classes. Has your agency managed to consistently report condition assessments for other asset classes?*
Response: Yes, TxMAP and Bridges.

Section C: Link Between Condition Targets and Expenditure Requirements, Including Budgetary Requirements

Question 1: *Who in your agency is responsible for estimated and actual expenditure calculations for achieving condition targets? Is it the maintenance or financial department or other?*
Response: Maintenance Department

Question 2: *How difficult is it to establish links between condition targets and expenditures?*
Response: Preventive maintenance is pretty straightforward; however, climatic changes (such as drought, fires, hurricanes, etc.) make the process very difficult.

Question 3: *Are expenditure targets based on models/predictions, history, estimated costs of projects, finance and/or other budgetary considerations?*
Response: Yes, all of the above. Ten years ago TxDOT adapted a formula-based budget program based on inventory, condition, and historical costs. This formula yields a needs-based budget, which TxDOT presents to the legislature for budget approval. TxDOT usually gets what it requests. Once funding is secured the same formula is used to allocate funds among jurisdictions.

Question 4: *How do you approach the calculation of estimated and actual target expenditures incurred during a particular fiscal year?*
Response: TxDOT uses a performance based budgeting system (based on performance and output measures) (i.e., low performance increased funding and visa versa). Previously, there were 135 performance measures; now it has reduced to 35 measures.

Question 5: *When comparing budgets and actual expenditure per GASB 34, is there an allocation of actual expenditure values among fiscal years?*
Response: See question 8.

Question 6: *How do your approaches differ when calculating force accounts and other internal expenditures (such as utilities) versus contracted expenditures?*
Response: Same process is used for both.

Question 7: *Is there a correlation between budget requests, expenditure estimates and actual amounts expended?*
Response: See question 2 above.

Question 8: *How do you account for the lag between the time expenditures are incurred (thereby improving conditions) and time of subsequent inspections (see question 2 above)?*
Response: None provided.

Question 9: *Are there any improvements that can be made to the process of linking condition targets and expenditure requirements?*
Response: The TxDOT goal is the establishment of a State Maintenance Report, which is currently under preparation. The report will tie outputs (from the Routine Maintenance Report) to outcomes (as measured by TxMAP).

Section D: The Allocation of Costs among Capital, Preservation, and Maintenance Categories

Question 1: *Do you allocate costs among capital, preservation, and maintenance categories? If so, what methodology do you use? Is this methodology used for general asset management, budgeting and GASB 34 financial reporting purposes? In our May 2005 initial interviews, we were informed that for budgetary purposes, TxDOT is now distinguishing true capital expenditures from maintenance costs rather than reporting entire projects as capital expenditures as in prior years. This change was brought about not because of GASB 34, but rather because of budgetary and legislative pressures. Legislators were looking at the large percentage of TxDOT's budget called "capital expenditures" and were putting pressure on TxDOT to build new roads in their districts. Because of this pressure and other reasons, TxDOT saw the need to more precisely display their budgets between capital and maintenance. As a result of this change, budgetary definitions are more closely aligned with the GASB 34 definitions of capital and maintenance. Could you kindly confirm our understanding and expand on this information by showing us specific examples?*
Response: Major projects that reconstructed or rehabilitated highway segment (preservation expenditures under GASB 34 definitions) previously were reported as capital expenditures in TxDOT's budget request to the legislature. This led to a legislative perception that a large portion of the TxDOT program was discretionary in nature rather than necessary to keep the existing system in a state of good repair. These projects are now categorized as maintenance expenditures, which presents a truer picture to the legislature and also has the effect of more closely aligning with GASB definitions.

Question 2: *Under GASB 34 definitions, maintenance costs are those that allow an asset to continue to be used during its originally estimated useful life. Capital costs increase the capacity or efficiency of the asset. "Preservation" costs generally are considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life, but do not increase the capacity or efficiency of the asset. Are your general asset management, budgeting, and GASB 34 financial reporting definitions of these categories consistent with the aforementioned GASB 34 definitions? Is there a clear definition of preservation costs (for extending lives only) that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized?*
Response: TxDOT now follows GASB definitions.

Question 3: *Have there been any changes in how costs are allocated since the introduction of GASB 34?*
Response: Yes, the definition of maintenance has changed because TxDOT saw the need to more precisely display their budgets between capital and maintenance. Now for budgetary

purposes rehabilitation (preservation) costs are included with other maintenance costs. In fact, in the FY2005 budget $1billion shifted from construction to preservation (i.e., maintenance). This facilitated legislative approval of TxDOT's budget request because the legislature had a better understanding of the true nature of the program.

Question 4: *How are networks and subsystems defined for cost estimating purposes?*

Pavement
Response: No response.

Bridges
Response: No response.

Question 5: *Which group within your agency is responsible for allocating costs among the aforementioned categories (capital, maintenance, and preservation)?*
Response: Finance Division.

Question 6: *Do you use automated systems or manual methods to allocate costs? To what extent?*
Response: An automated system (i.e., MS Access database).

Question 7: *For projects that have both capital and preservation elements, do you allocate costs between the two categories? If so, what is your methodology for doing so?*
Response: No, not currently for a single project.

Question 8: *What degree of confidence do you have in the accuracy of the allocation of costs among the three categories?*
Response: At a macro level, TxDOT has a high degree of confidence.

Question 9: *Are there any improvements that can be made to the process of allocating costs among capital, preservation, and maintenance?*
Response: Start allocating capital/preservation costs within projects.

Section E: Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Question 1: *Describe your accounting procedures for purposes of reporting infrastructure additions, retirements and replacements in the CAFR; and, if different, for purposes of general asset management and budgeting.*

Additions:
Pavement
Response: TxDOT compares budgets for each project with actual expenditures. When 85% is reached they capitalize the project (at the end of the year).

Bridge
Response: Additions are accounted for via district reports, which are inserted into the access database.

Retirements
Response: No response.

Replacements of infrastructure assets
Response: No replacements are accounted for, since they account for retirements and additions.

Question 2: *Has your accounting methodology for these items changed since the implementation of GASB 34?*

Additions
Response: No response.

Retirements
Response: No response.

Question 3: *Describe the extent to which your financial accounting processes are manual and/or automated?*
Response: Partially automated.

Question 4: *If processes are exclusively manual, do you have plans to implement an automated system?*
Response: TxDOT is satisfied with the current system.

Question 5: *Are there any improvements that can be made to the process of accounting for additions, retirements, and replacements of infrastructure assets?*
Response: TxDOT is satisfied with the current system.

Section F: Potential Effects on Bond Rating

Question 1: *Does your agency or government issue bonds to finance infrastructure?*
Response: Yes. First issue was in 2002 (for a turnpike project). So it was issued after GASB.

If yes, which agency is your rater?
Response: All three (although Fitch didn't rate their last bond issue).

Question 2: *What specific information do you provide to the bond rating agency? Is it the same or how does it differ from what is reported in the CAFR?*
Response: No questions specific to GASB were asked. Information requested was not as detailed as the CAFR.

Question 3: *Has there been a change in your bond ratings as a result of new infrastructure accounting practices or implementation of requirements? If so, how has it affected your costs?*
Response: Not applicable, since first bonds were issued after GASB.

Question 4: *What factors are important in the rating process?*
Response: The most important factor is the raters' assessment of how well the system is being managed. The raters already had sufficient information to make that judgment, so the additional reporting in the RSI required by GASB 34 did not appear to have an effect.

Section G: Operational and Financial Impacts of Reporting

Question 1: *Has your organizational approach (i.e. planning, etc.) changed since using the modified approach of GASB 34?*
Response: No accounting changes, but a budgeting change (see section D, question 3).

Question 2: *Is the information on condition assessments shared, both internally and externally? If so, how is this information shared?*
Response: Yes, mostly internally and with the Commission. Information is not shared with the legislature nor is it shared with the public. However, the legislature does have access to

the Strategic Plan, which does state departmental goals, etc. Distribution of specific condition assessment information with the general public raises a legal liability concern in connection with highway accidents.

Question 3: *Are external organizations (e.g. public interest, higher education, etc.) interested in your operational and financial reporting? If so, to what extent?*
Response: Not really, except for specific local issues.

Question 4: *Since GASB 34, what has been the trend in condition assessments for assets? How does your DOT explicitly or intuitively define good asset management (e.g. balancing cost and results of asset management, is there a point of deterioration where asset management is no longer worth it)?*
Response: There has been a positive trend, especially with TxMAP, which is essentially a report card of individual district performance; hence, it has enhanced competition among districts. Yes, after a certain point repairing will not be sufficient, at which time rehabilitation is required.

Question 5: *To what extent has the RSI been subjected to auditor scrutiny? Has auditor scrutiny increased or decreased since adopting GASB 34?*
Response: There was a modest increase in auditor interest during the initial year of GASB 34 implementation; back to traditional levels since then.

WASHINGTON DOT WORKSHOP

Workshop Date: April 14, 2006
Participants: **Marcy Yates,** Accounting Services
Aaron Butters, Systems Analysis and Program Development
Doug Clouse, Budget
Katherine Boyd, Strategic Assessment Office & Gray Notebook
Daren Guyant, Accounting Services (emailed responses to pertinent questions).
Jeff Caldwell, Financial Planning
Rico Baroga, Maintenance Accountability Plan (MAP)
DeWayne Wilson, Bridge Management, WSDOT (emailed responses to pertinent questions).

The following questions in each section were open-ended to encourage an exchange of ideas. During the oral interview we expanded on each of the questions, as appropriate, to address specific issues.

NOTE: Other than through a web site reference, Washington DOT does not specifically report on the MAP activities in its RSI (though they are considering doing so in the future). However, MAP is conducted in accordance with GASB 34 principles (i.e. targets are established, costs to achieve these targets are estimated, and these are compared with the actual results). As such, in this write up we include the maintenance program, as measured by MAP as a third activity to be reported on. In addition, WSDOT reports on the condition of emergency airfields in its Required Supplementary Information.

Section A: Process for Setting Condition Targets

Question 1: *What process do you use to determine which condition targets (for example, percent of highway pavement types in very poor to very good conditions or percent of bridges at structural condition levels of poor to good) will be used for each asset class? Of these, what is the preferred process? Is this process used for both general asset management purposes and for reporting in the CAFR? If not used for both, why? What are the differences?*

Pavements
Response: Condition targets are set through a planning process. The Washington State Pavement Management System (WSPMS) plays a pivotal part in identifying and prioritizing roadway preservation projects. As part of this process, pavement condition data is collected annually, then rated and analyzed for the entire State highway system. The three types of condition measures used for evaluation are: Pavement Structural Condition (PSC); Rutting; and Roughness [as measured by the International Roughness Index (IRI)]. Each of the three measures has a target and in order for a pavement section to "pass" all three must meet the target (i.e., the target is not a combined number). Thus, if one condition measure fails, then the condition targets are not met. The annual condition data is then joined with historical condition data in WSPMS. This data along with roadway geometric, functional, construction and programmed projects data is used to develop the unique performance characteristics of each roadway segment, which predict the best time to rehabilitate each segment using lowest life cycle cost concepts and help prioritize the rehabilitation projects according to the functional class of the highway (most traveled routes versus less traveled routes).

Bridge
Response: Three categories of condition were established based on an FHWA criteria used to rate the condition of a bridges superstructure and substructure. Yes, the same process is used for both general asset management purposes and for reporting in the CAFR.

Maintenance

Response: MAP targets measure and communicate the outcomes of 33 distinct highway maintenance activities. Twice a year randomly selected sections of the highway are measured using field condition surveys. The results compare WSDOT's work to the MAP criteria to determine the level of service (LOS) delivered. LOS targets are defined in terms of the condition of various highway features (for example, the percent of guardrail on a highway system segment that is damaged). LOS targets are also keyed to the level of funding provided by the Legislature.

Question 2: *What Performance measures are used to express these targets? Are there any measures of customer satisfaction with system performance?*

Pavements

The CAFR RSI indicates that pavement condition targets are based on road condition categories of very poor to very good. The CAFR describes PSC, International Roughness Index (IRI), and Rutting PSC, IRI as well as rutting measures and targets that determine category of pavement condition. Could you expand on what factors were considered in establishing these particular measures and targets?

Response: Statewide pavement condition is represented by the pavement structural condition (cracking, faulting, patching, etc.), rutting, and ride (smoothness) measurement on the state highway network. These condition measures are used to characterize each pavement section into one of five categories: very good, good, fair, poor, and very poor. A pavement section is determined to be "due" for rehabilitation when it has reached the "Fair" category based on one or more condition measures. WSDOT's goal is to reach approximately 1,700 lane mi of pavement in the "Fair" category and none in the "Poor" or "Very Poor" category. Although measures of customer satisfaction are not specifically incorporated into system performance measures, the IRI measure does correlate with what the public reports in customer satisfaction surveys.

The RSI also indicates that in 1993 the Legislature required WSDOT to rehabilitate pavements at the Lowest Life Cycle Cost (LLCC), which has been determined to occur at a PSC range between 40 and 60, or when triggers for roughness or rutting are met. Could you expand on the general concept of LLCC described in the RSI and provide examples of how it relates to both asset management targets and information required for the CAFR RSI disclosures of estimated and actual maintenance and preservation costs?

Response: The Department of Transportation manages State Highways targeting the LLCC per the Pavement Management System due date. While the department has a long-term goal of no pavements in poor condition (a pavement condition index less than 40, on a 100 point scale), the current policy is to maintain 90% of all highway pavement types at a pavement condition index of 40 or better with no more than 10% of its highways at a pavement condition index below 40. The most recent assessment found that State Highways were within the prescribed parameters with only 10% of all pavement types with a pavement condition index below 40.

Bridges

Response: It is WSDOT policy that the structural condition of 95% of its bridges rate fair or better, meaning that all primary structural elements are sound. A complete description of each National Bridge Inventory (NBI) code is found on page 38 of the 1995 FHWA coding guide. The three categories used by WSDOT are—Good = NBI code 6, 7, and 8; Fair = NBI code 5; and Poor NBI code 3 and 4. Currently, WSDOT have no measures of customer satisfaction with bridge system performance.

The CAFR RSI indicates that bridge condition targets are based on condition categories of poor to good. The CAFR describes certain FHWA structural sufficiency standards as the basis for

determining these categories of bridge condition. Could you explain what factors were considered in using these particular measures and targets?
Response: The FHWA structural sufficiency standards used to determine bridge condition (as described above) are: N = Not Applicable; 9 = Excellent Condition; 8 = Very Good Condition (no problems noted); 7 = Good Condition (some minor problems); 6 = Satisfactory Condition (structural elements show some minor deterioration); 5 = Fair Condition (all primary structural elements are sound but may have minor section loss, cracking, spalling or scour); 4 = Poor Condition (advanced section loss, deterioration, spalling or scour); 3 = Serious Condition (loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present); 2 = Critical Condition (advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken); 1 = "Imminent" Failure Condition (major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service); 0 = Failed Condition (out of service—beyond corrective action).

The CAFR RSI also discusses the WSDOT seismic retrofit program and mentions retrofit risk factors and priorities. Could you expand on this discussion and explain what factors are considered in establishing the priorities? How is the risk measured? How does it relate to overall condition categories discussed in the preceding paragraph?
Response: A Bridge Seismic Retrofit program in Washington State was developed by the Bridge and Structures Office in 1990 to address the seismic vulnerability of state highway bridges. WSDOT uses a map to identify different seismic zones with peak ground accelerations (PGA) in Washington based on USGS information. "Zone C" is considered "High Risk" and covers the area with PGA greater than 0.20 times the force of gravity. "Zone B" is considered "Moderate Risk" and contains an area of PGA between 0.10 and 0.20 times the force of gravity. "Zone A" is considered "Low Risk" and contains an area of PGA less than 0.10 times the force of gravity. The bridge seismic retrofit program is based on the following objectives following a seismic event: Minimize risks of bridge collapse; Prioritize projects to minimize loss of life and disruption to commerce; Interstate and essential lifeline bridges are to remain in service following an earthquake; Accept moderate damage; Make optimum use of available funding by addressing lower cost/highest benefit superstructure seismic retrofit needs first and follow with substructure retrofit needs. To meet these objectives, bridges within the highest seismic risk area (Zone C) were evaluated in 1990. These bridges are primarily located in the counties adjacent to the Puget Sound region. Bridges located in the moderate seismic risk area (Zone B), were screened and evaluated in 1994. The Bridges located in the lowest seismic risk area (Zone A) have not been evaluated and have been excluded from the program.

The evaluation process included the following: Review of Zone C and B bridge plans; Identification of all seismic structural vulnerabilities; Identification of state and local agency emergency routes, utilities, and volume of traffic; Development of a seismic retrofit prioritization methodology; Evaluation of retrofit techniques; Development of retrofit strategies and cost estimates; Development of a database to manage the program; Bridge retrofit needs have been prioritized by first establishing groupings of bridges by the nature and extent of structural deficiencies. Then the bridges have been ranked according to the importance of the bridge. For superstructure retrofit ranking, Groups 1 and 2 were ranked together. For substructure retrofit ranking, Group 3 was ranked, then Group 4. Bridges are placed in one of the following groups according to their structural deficiencies: (1) Bridges with in-span hinges, (2) Bridges simply supported at piers. Substructure Group: (3) Bridges with single-column piers, (4) Bridges with multi-column piers having substructure

deficiencies. Major/Special Bridges: Bridges that require further structural analysis to assess whether seismic retrofit is warranted. These are essentially large or unusual type structures. In essence, risk is based on the probability of the most damage from an earthquake of the size and magnitude that usually happens in the Puget Sound area. The United States Geologic Survey determines the areas that could experience the most energy from an earthquake. The Bridge Seismic Retrofit Program is a stand-alone program and it does not relate to the condition category.

Question 3: *Has your preferred methodology changed since the implementation of GASB 34? If so, list the specific changes.*

Pavement: No significant changes due to GASB. Some small changes include the possible introduction of RIDE and the change in some language used in reporting.

Bridge
Response: No.

Question 4: *Please describe any aspects of the approach used to set performance targets you consider to be unique to your agency or instrumental in the success of the approach?*

Pavement
Response: Currently, WSDOT applies pavement preservation on a "least life cycle cost" basis, which is considered unique. Other unique features include: application of performance measures to ITS system components; pavement condition data dates back to 1969, which is probably one of the oldest such databases; and the predictive ability of WSDOT performance measures—up to 6 years with "best" reliability up to 3 years. This information enables the application of performance measures in a more effective, replicable manner.

Bridge
Response: None.

Question 5: *Which group within your agency is responsible for setting condition targets? Do they meet to review results and/or adjust targets? What is the chain for approving condition targets?*
Response: The Washington Transportation Commission has traditionally been the entity that established targets, based upon proposals by the Pavement Management Office. WSDOT recently became a Cabinet Agency. Thus, now the Office of Financial Management (OFM) is more directly involved through the executive budget process. The legislature reviews the targets as part of the budget process but does not approve them.

Question 6: *How often does your agency set condition targets?*

Pavement
Response: Biannually.

Bridge
Response: Annually.

Question 7: *Which computer-based management systems if any do you use for setting condition targets?*
Response: WSDOT has had in operation through most of the 1980s a pavement management program referred to as the WSPMS. The WSPMS grew out of an earlier priority programming process mandated by the Washington State legislature. In the 1970s WSPMS was developed within the WSDOT materials laboratory and subsequently implemented during the 1982 programming cycle. As WSPMS was developed in-house, WSDOT personnel have the capability to upgrade and modify the software. Currently, there are plans to shift WSPMS to a web based system. WSPMS is only an inventory system (i.e., it has no predictive capability).

Question 8: *Describe the extent to which your agencies' budgeting constraints affect condition targets (i.e. are condition targets based on budgets or vice versa)?*

Pavement
Response: This is a "chicken and egg" problem. It goes both ways (i.e., budget constraints limit the targets, but desire to achieve targets also influences budget allocations). Under the Commission, neither one drove the other, but rather it was a back and forth process). So far, dealings with OFM have had less of this interactive aspect.

Bridge
Response: Condition targets are set independent of the budgets.

Question 9: *What impact if any has GASB 34 reporting targets had on the setting of your condition targets? For example, did GASB 34 considerations cause your agency to set relatively conservative condition targets?*
Response: The only influence has been on the reporting process. GASB 34 is not a driver in WSDOT's approach to condition targeting. WSDOT has tried to make use of processes already in place to accomplish GASB 34 reporting.

<u>Section B:</u> Methods of Condition Assessment

Question 1: *With targets established as described in Section A, please now describe your condition assessment procedures, in terms of inspection protocols, etc.*

Pavements
Response: Due to the many benefits of using an automated condition assessment procedure, WSDOT in 1989 purchased an automated pavement condition survey vehicle. The "Pathrunner" van is equipped with six high speed, high-resolution cameras (one facing forward for the roadway perspective, one facing right for the shoulder view, and four facing downward for the pavement view). In addition, the van is equipped with three laser profile sensors and two accelerometers for measurement of longitudinal roadway profile in order to calculate pavement roughness (IRI), rut depth and wear, and joint and cracking faulting. The automated pavement condition survey is conducted during the summer of each year and requires a two-person team that surveys the entire State (i.e. 100% sample size for mainline miles). The "Pathrunner" collects pavement images every 5 m and stores profiler data at every 7 cm interval. The profile data is automatically analyzed for rutting/wear, joint and crack faulting, and IRI, through computer processing routines, while the pavement condition video images are analyzed using four digital playback workstations.

The CAFR RSI indicates that since 1999, WSDOT has used an automated pavement distress survey procedure. In the automated survey, high-resolution video images are collected at highway speed and these video images are then rated on special workstations at 3–6 mph speed. This change has also resulted in a more detailed classification and recording of various distresses that are rated. Kindly expand on this description by providing additional detail and examples.
Response: See above.

Bridge
Among other matters, the CAFR RSI suggests procedures are performed to assess seismic risk of a site, structural detail deficiencies and route importance. Could you kindly describe these procedures?
Response: See Section A, question 2.

Question 2: *Have your condition assessment methodologies changed since the implementation of GASB 34? In our initial telephone interview we were informed that "refinements" (not changes) to*

the methodology are being made "all the time." Kindly discuss and provide specific examples of a few significant refinements.

Pavements
Response: Methodologies have remained essentially the same since 1999. Refinements include trying to get access to more accurate data and technological improvement to the "Pathrunner" van (for example, installation of three lasers to obtain a true profile in the measurement for rutting).

Bridge
Response: No.

Question 3: *What is the approximate sample size for your condition assessments (i.e., proportion of each asset class assessed)? How often do you intend to perform condition assessments? Has the frequency of condition assessments changed since GASB 34? Please mark your answers in the table below.*

	Sample Size	Frequency	Has frequency changed since GASB 34?
Pavements	100% of mainline miles	Annually	No
Bridges	2,977 Bridges (100%)	Annually	No
Maintenance	2200 $\frac{1}{10}$ mile segments	Annually	No

Question 4: *(a) Please describe any aspects of the approach used to conduct condition assessments you consider to be unique to your agency or instrumental in the success of the approach.*

Pavement
Response: No answer provided.

Bridge
Response: No answer provided.

(b) Do you utilize quality control/quality assurance processes to ensure the consistency and the accuracy of the assessment?

Pavement
Response: Yes, after the rating crew has finished rating a "set" (approximately 100 miles of roadway), about five random sample sections, each approximately 1 mile long, are selected within this set and are rated again ("sample" rating) by a different rater than the one who performed the "production" rating. The PSC, a combined index of the various distresses on the pavement surface, is then computed using both the 'production' rating and the 'sample' rating are then compared for any statistical differences.

Bridge
Response: There is a process whereby WSDOT double checks the numbers before they are submitted.

Question 5: *What group(s) within your agency is/are responsible for conducting condition assessments?*

Pavement
Response: Pavement Management Office.

Bridge
Response: The Bridge Management Unit provides the information for the Bridges.

Maintenance
Response: Maintenance Accountability section.

Question 6: *Do you outsource any component of your condition assessment? If so, how is it working?*
Response: No. Not even under consideration at this time because of the civil service rules.

Question 7: *Which automated data collection systems, if any, do you use for condition assessments?*

Pavements
Response: The van provided by Pathway Services, as described above.

Bridges
Response: Once a bridge is inspected by the Bridge Preservation Office, then the inspection data is stored in a database with criteria established by the FHWA. This database is called the Washington State Bridge Information System (WSBIS).

Question 8: *What is your agency's primary motivation in performing condition assessments? Is it a result of GASB 34 or for other reasons?*
Response: Condition assessments are required pursuant to the 1993 legislation that established the Lowest Life Cycle Cost approach to pavement management (Washington State Legislature, Revised Code of Washington (RCW), Title 47.05). GASB 34 is not the driver.

Question 9: *Are there any improvements that can be made to the current condition assessment process?*

Pavement
Response: Yes, improve the accuracy of assessments by refining the models and data collection methodologies, especially for the assessment of rutting and roughness index. More years of data are required to accomplish this.

Question 10: *Is your condition assessment methodology and extrapolated results (samples) consistent and replicable among multiple regions? If not, why not?*
Response: Condition assessments are done on a statewide basis rather than by region so consistency has not been an issue.

Question 11: *What degree of confidence do you have in your condition assessments (for either financial reporting or asset management purposes)?*
Response: High degree of confidence, especially after the implementation of the automated system in 1999.

Question 12: *In our experience the condition assessment process for pavement and bridges is more advanced than for other asset classes. Has your agency managed to consistently report condition assessments for other asset classes?*
Response: Yes, through WSDOT's MAP condition assessments for numerous other asset classes (e.g., roadside, drainage, signs) are conducted on an annual basis. Although these reports are not yet part of the RSI, there are plans to include them at some point. In addition, the condition assessment of airfields is done fairly consistently.

Section C: Link between Condition Targets and Expenditure Requirements, including Budgetary Requirements

Question 1: *Who in your agency is responsible for estimated and actual expenditure calculations for achieving condition targets? Is it the maintenance or financial department or other?*

Response: Accounting Services with input from Systems Analysis and Program Development and the Budget Office.

Question 2: *How difficult is it to establish links between condition targets and expenditures?*

Pavement
Response: Relatively easy, because WSDOT has a large historical database (which dates back to the 1960s) which is used to predict costs by pavement mile. For CAFR reporting, however, this is still a challenge.

Bridge
Response: Due to the lack of historical data, linking condition targets and expenditures is relatively difficult.

Maintenance
Response: Difficult due to variability in weather, with the severity of winter storms a key factor.

The attached summary of information extracted from the 2005 CAFR RSI shows consistency year to year in attained condition levels yet fairly large variations in budgeted and actual preservation and maintenance costs to maintain those consistent condition levels. Can you please comment on this observation recognizing the high level simplicity of the comparisons?
Response: The required GASB comparison between actual and planned preservation and maintenance expenses is artificial in WSDOT's view, due to discrepancies in the timing of expenditures (i.e., budgeted in one year, but spent in another), and different usage of the term "preservation." WSDOT believes that the comparison between targeted and actual conditions is the more important consideration and they focus their attention on that.

Question 3: *Are expenditure targets based on models/predictions, history, estimated costs of projects, finance and/or other budgetary considerations?*
Response: Expenditure targets are derived from historical actual expenditures, and legislative direction through the budget.

Question 4: *How do you approach the calculation of estimated and actual target expenditures incurred during a particular fiscal year?*
Response: See above.

The CAFR RSI states: "In 1996 WSDOT embarked on an initiative to use outcome based performance measures for evaluating the effectiveness of the Maintenance Program. The Maintenance Accountability Process (MAP) is a comprehensive planning, measuring and managing process that provides a means for communicating the impacts of policy and budget decisions on program service delivery. WSDOT uses it to identify investment choices and affects of those choices in communicating with the legislature and other stakeholders." Could you tell us more about this initiative particularly how it relates to estimating costs of preservation and maintenance?
Response: See discussion above. In addition, here is a link to the WSDOT Map Manual: http://www.wsdot.wa.gov/maintenance/pdf/MAP_Manual_0201.pdf. Chapter 1 of that document describes the difficulty of obtaining funding under pre-1997 processes and the improved success since 1997 under MAP.

Question 5: *When comparing budgets and actual expenditure per GASB 34, is there an allocation of actual expenditure values among fiscal years?*
Response: No, reported expenditures are the actuals for that fiscal year. Most WSDOT appropriations are biennial, so the budgetary portion of the GASB 34 reporting for infrastructure assumes half of the sub-program budget for each year of the biennium.

Question 6: *How do your approaches differ when calculating force accounts and other internal expenditures (such as utilities) versus contracted expenditures?*
Response: There is a clear distinction between State and contracted (private) worker costs. They are accounted for separately, but there is no difference in the approach to calculations for cost of infrastructure purposes.

Question 7: *Is there a correlation between budget requests, expenditure estimates and actual amounts expended?*
Response: As noted above, this is viewed as an artificial comparison. While there is some correlation between expenditure estimates and budget requests, the final legislatively approved budget signed by the Governor determines the actual spending limits.

Question 8: *How do you account for the lag between the time expenditures are incurred (thereby improving conditions) and time of subsequent inspections?*
Response: No attempt is made to account for the lag. Since pavement and bridge inspections are conducted annually with a 100% sample size, this is not a significant issue.

Question 9: *Are there any improvements that can be made to the process of linking condition targets and expenditure requirements?*
Response: Not much room for improvement of the accounting documents. For the asset classes other than pavement and bridge that are measured with MAP, more complete inventory information would be an important improvement. Improvements in data collection methods would improve the process.

Section D: The Allocation of Costs among Capital, Preservation, and Maintenance Categories

Question 1: *Do you allocate costs among capital, preservation, and maintenance categories? If so, what methodology do you use? Is this methodology used for general asset management, budgeting and GASB 34 financial reporting purposes?*
Response: Yes, see discussion below.

Question 2: *Under GASB 34 definitions, maintenance costs are those that allow an asset to continue to be used during its originally estimated useful life. Capital costs increase the capacity or efficiency of the asset. "Preservation" costs generally are considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life, but do not increase the capacity or efficiency of the asset. Are your general asset management, budgeting, and GASB 34 financial reporting definitions of these categories consistent with the aforementioned GASB 34 definitions? Is there a clear definition of preservation costs (for extending lives only) that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized?*
Response: While WSDOT's operational use of the term "Preservation" may differ from GASB's we have found ways to use codes in our Capital Program Management System (CPMS) to distinguish preservation costs from capitalizable costs. Using the GASB definition for CAFR reporting we can provide clear delineation of preservation costs that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized. Bridge upgrades are considered as preservation costs while seismic retrofit costs are capitalized.

Question 3: *Have there been any changes in how costs are allocated since the introduction of GASB 34?*
Response: No

Question 4: *How are networks and subsystems defined for cost estimating purposes?*
Response: They are not defined independent of each other; rather WSDOT has a highway system, bridge system, and an aviation system. Rail is depreciated.

Question 5: *Which group within your agency is responsible for allocating costs among the aforementioned categories (capital, maintenance, and preservation)?*
Response: Accounting Office with input from Systems Analysis and Program Development and reports from the Budget Office.

Question 6: *Do you use automated systems or manual methods to allocate costs? To what extent?*
Response: A combination of automated and manual methods (i.e., expenditures are listed in the mainframe General Ledger extracted into an Excel spreadsheet and then costs are allocated manually between capitalizable costs, preservation and maintenance). The process was improved with the introduction of the Accounting DataMart, but this was not done for GASB 34 purposes.

Question 7: *For projects that have capital and preservation elements, do you allocate costs between the two categories? If so, what is your methodology for doing so?*

Pavement
Response: Yes, WSDOT does sub-allocate between categories for GASB reporting purposes.

Bridge
Response: Yes, WSDOT does sub-allocate between categories for GASB reporting purposes.

Question 8: *What degree of confidence do you have in the accuracy of the allocation of costs among the three categories?*
Response: High degree of confidence that it is materially correct.

Question 9: *Are there any improvements that can be made to the process of allocating costs among capital, preservation, and maintenance?*
Response: There could always be improvements or efficiencies gained, but without a budgetary program structure change and/or new investment in computer applications, what we have is at a manageable level of effort.

Section E: Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Question 1: *Describe your accounting procedures for purposes of reporting infrastructure additions, retirements and replacements in the CAFR; and, if different, for purposes of general asset management and budgeting. Please comment here on accounting for infrastructure construction in progress. Specifically, does it appear in the CAFR (Note 6 to the financial statements) as part of infrastructure or as part of the overall state "Construction in Progress" caption? Does the CAFR presentation differ from the asset management presentation of "Construction in Progress"?*
Response: WSDOT and the state government in its CAFR make no distinctions between "infrastructure related Construction in Progress" and "completed infrastructure projects." All the reportable expenditures are included as Infrastructure.

Additions:
Response: Expenditures for additions are tracked by the use of subprograms and improvement type codes. These codes allow WSDOT to capture expenditures for projects that increase capacity or improve efficiency, which expenditures are capitalized.

Retirements:
Response: When notified of roadway transfers to other jurisdictions or abandonments, WSDOT determines if there was any expenditure associated with those sections of roadway since 1980 and reverses them from the infrastructure total. The same process is used for bridges. If costs were prior to 1980, no adjustment is made to capital asset values as we used estimated historical costs from 1980 forward as our beginning infrastructure cost in 2002.

Replacements of infrastructure assets:
Response: The process described above is also used for replacements.

Question 2: *Has your accounting methodology for these items changed since the implementation of GASB 34?*
Response: There have been refinements to the improvement codes, but no material changes.

Question 3: *Describe the extent to which your financial accounting processes are manual and/or automated?*
Response: Expenditure information is captured in the department's accounting system—TRAINS. Data is extracted using Accounting DataMart and exported to Excel. Excel is used to sort, categorize and refine the data, i.e., exclude costs such as expenditures for equipment included in other depreciable asset categories.

Question 4: *If processes are exclusively manual, do you have plans to implement an automated system?*
Response: No changes are planned.

Question 5: *Are there any improvements that can be made to the process of accounting for additions, retirements, and replacements of infrastructure assets?*
Response: If capitalized costs per bridge were more readily available, then the retirement and replacement cost determination process for bridges could be further improved. Also, the process would be improved if WSDOT were able to track costs of structures a bit better

<u>Section F:</u> Potential Effects on Bond Rating

Question 1: *Does your agency or government issue bonds to finance infrastructure?*
Response: The State Finance Committee issues debt for the state of Washington. Most debt is issued for infrastructure projects (some multi-modal funds).

If yes, which agency is your rater?
Response: Moody's, Fitch, and Standard and Poor's.

Question 2: *What specific information do you provide to the bond rating agency? Is it the same or how does it differ from what is reported in the CAFR?*
Response: WSDOT doesn't work directly with Bond agencies, but the State Treasurer's office does. As such, bond raters do not have many questions with regards to infrastructure. So, in addition to the CAFR, WSDOT sends the following information: revenue forecasts, budgets, debt issuance plans, and debt related initiative and referendum, and economic/financial updates.

Question 3: *Has the bond rating agency requested additional/follow up information? If so, what have they requested?*
Response: Yes, but most of it has been non-infrastructure related. Recent questions have been regarding pension and post employment benefits. The State Actuary has addressed those concerns.

Question 4: *Has there been a change in your bond ratings as a result of new infrastructure accounting practices or implementation of GASB 34 requirements? If so, how has it affected your costs?*
Response: No.

Question 5: *What factors are important in the rating process?*
Response: Being forthcoming with information regarding the State's financial and economic status.

Section G: Operational and Financial Impacts of GASB 34 Reporting

Question 1: *Has your organizational approach (i.e., planning, etc.) changed since using the modified approach of GASB 34?*
Response: GASB 34 has initiated increased interactions between the Accounting and Engineering Departments. As a result, there is an improved understanding of activities and issues between the two departments.

Question 2: *Is the information on condition assessments shared, both internally and externally? If so, how is this information shared?*
Response: Internally—Yes. Externally—Yes, but people are not overly interested with WSDOT condition assessment information. However, the Gray Notebook is widely distributed (both in print form and via website). The Gray Notebook contains the same information as the CAFR on pavement and bridge condition.

Question 3: *Are external organizations (e.g., public interest, higher education, etc.) interested in your operational and financial reporting? If so, to what extent?*
Response: Some interest by University research centers.

During our initial interview you mentioned the Representative Jarrett initiative to develop more strategic statewide budgets using techniques similar to the DOT's asset management program. Could you provide details on this initiative (assuming it is still in progress)?
Response: There were three committee workshops, but not much progress since the initial interview. There is some interest in applying condition assessment principles to State buildings and facilities. Most recently, Representative Jarrett has been interested in obtaining replacement cost data to assist with ensuring appropriate funding levels for maintaining newly constructed infrastructure.

Question 4: *Since GASB 34, what has been the trend in condition assessments for assets?*
Response: Stable.

Question 5: *How does your DOT explicitly or intuitively define good asset management, e.g. balancing cost and results of asset management, is there a point of deterioration where asset management is no longer worth it?*
Response: This is where lower life cycle costs come into play. Pavement interventions that are due have first priority, followed by past due interventions. This results in lower costs overall.

Question 6: *To what extent has the RSI been subjected to auditor scrutiny? Has auditor scrutiny increased or decreased since shifting to the modified approach?*
Response: It has remained the same since we began using the modified approach in 2002.

FITCH RATINGS (NEW YORK)

Interview Date: November 28, 2006
Participants: **Rich Raphael,** Executive Managing Director (State Ratings Group), Fitch Ratings
Cherian George, Managing Director (Transportation Group), Fitch Ratings
Scott Trommer, Senior Director (Transportation Group), Fitch Ratings

Fitch Ratings is a credit rating agency providing credit markets with independent credit opinions. As such, the previously used questionnaire (which sought details about condition targets, condition assessments, etc.) was deemed unsuitable for this interview. Instead, PB opted to use a "free-flow" interview approach; whereby after an initial introduction of the NCHRP study and a brief description of the previously used questionnaire, a discussion ensued on the potential links between GASB 34 and the credit rating process. The following is a summary of the most salient points raised by Fitch Ratings during the interview.

(1) *Depreciation versus Modified Approach*—Compared with the depreciation approach, the modified approach provides more pertinent information that could be used in the credit rating process. However, there is some apprehension toward the modified approach; primarily because its methodology enables practitioners to use subjective judgments, which could potentially lead to misleading estimates. Despite this apprehension, if the numbers derived from the modified approach are accurate, then Fitch Ratings believe they are more useful for credit rating than ones derived via the use of the depreciation approach (discussed further below).

(2) *RSI and GASB Reporting*—Information in the RSI is a useful indicator of asset condition for Fitch Ratings to use in its credit rating analysis of transportation bonds. However, the starting place for Fitch's analysis is the economics of the tax base. More pertinent information that Fitch Ratings draw on in their credit rating process primarily centers around the adequacy of the revenue pledge, coverage, legal structure and the additional bonds test. Other pertinent factors for such bonds, as well as for the GO bond rating of the entity, are the allocation of adequate budgets towards the maintenance of infrastructure and financial management. Additionally, the RSI generally is summarized at a level that is too high for rating purposes. The state of disrepair of infrastructure and the ability of the government to generate future revenue to deal with deferred maintenance and related debt reduction typically are the significant infrastructure issues in the rating process. Trend information on these matters is of particular importance to Fitch.

GASB's RSI requirement to relate condition targets with estimated and actual maintenance costs to achieve those targets is of interest to Fitch. While they acknowledge the difficulties governments have in developing this information and its current unreliability, Fitch believes that this information properly prepared could provide insights into deferred maintenance issues of importance to the raters.

(3) *Standardization*—Fitch Ratings would support a standardized approach to condition assessments, because standardization would enable Fitch Ratings to evaluate and compare infrastructure conditions across geographies although they recognize that environmental factors of different areas of the country affect the consistency of infrastructure asset management.

(4) *Revision of GASB Definitions*—Fitch supports the idea of revisiting some of the GASB definitions. For example, if a bridge is replaced perhaps it ought to be accounted as a capital expenditure rather than the GASB defined method of accounting it as preservation expenditure (i.e., a bridge replacement, due to its high costs would incur significant debt that would be accounted as a liability; accordingly, as an off-setting measure bridge replacement costs should be accounted as a capital asset). Said another way, under GASB's current definition of preservation the new bridge will be reported at the cost of the replaced bridge which cost has no relevance to the current amount of related debt. (The research team will discuss this issue in greater detail in our final report.)

(5) *GASB 34 Influence on Bond Ratings*—Fitch Ratings have not upgraded nor downgraded ratings as a result of information contained in the RSI. A change in asset condition, either positive or negative, wouldn't, in itself, generate a bond rating change. If state or local governments have had a change in bond ratings, the change is probably the result of other factors, such as the underlying economic fundamentals of the revenue stream supporting the debt issuance. However, Fitch would view a well-prepared RSI on infrastructure as an indicator of good financial management. Conversely, if an agency failed to comply with GASB 34 infrastructure requirements, or did so in only a perfunctory manner, that would be viewed as a symptom of poor financial management.

(6) *Incorporating GASB 34 Information into Credit Ratings*—Fitch is currently reevaluating the usefulness of GASB 34 toward its credit evaluation process. It hopes to conduct a study to evaluate historical trends using the modified approach.

GOVERNMENTAL ACCOUNTING STANDARDS BOARD (GASB) WORKSHOP

Workshop Date: January 25, 2007
Participants: **David R. Bean,** Director of Research & Technical Activities
Roberta Reese, Project Manager

Our visit with the GASB staff was intended to obtain reaction to the findings from other workshops of this project. We recognized that under GASB's procedures GASB staff would be unable to express reactions or positions without full Board deliberation and due process. Accordingly no specific reactions or opinions of the GASB staff are included in this report. However, GASB staff reviewed and discussed extensively the findings in this report, referring often to the specific requirements of GASB standards for conformity or non-conformity with the findings. Staff reported that currently GASB's project related to accounting for infrastructure is not included in its technical work plan as either a current or research project due to other urgent priorities. It is included as a potential future project, however it likely will not be moved to a current or research project in the plan in the near future. We encouraged staff to add the findings of this report to any future deliberations of accounting for infrastructure and emphasized the importance of integrating asset management and financial reporting.

HILLSBOROUGH COUNTY (FLORIDA) WORKSHOP

Workshop Date: March 17, 2006

Participants:
Thomas Fass, Section Manager Project Management, Hillsborough County Public Works
Scott Cottrell, Director Engineering Division, Hillsborough County Public Works
Frederick Nutt, Director Operations, Hillsborough County Public Works
Roger Cox, Pavement Program Manager, Hillsborough County Public Works
Mike Maltezos, General Manager, Asset Register, Hillsborough County Public Works
Jim Thigpenn, General Manager, Asset Management Team, Hillsborough County Public Works
Ajay Gajjar, Financial Reporting Manager, Finance Department
Michael Campbell, Clerk, County Auditor
John Fitzhenry, Capital Asset Manager, Finance Department

The following questions in each section were open-ended to encourage an exchange of ideas. During the oral interview we expanded on each of the questions, as appropriate, to address specific issues.

Section A: Process for Setting Condition Targets

Question 1: *What process do you use to determine which condition targets (for example, maximum percent of infrastructure structurally deficient or pavement roughness index for a system) will be used for each asset class?*

Paved Roadway Lane miles
Response: Targets were set after GASB 34 via a formal resolution voted by the Board. Any changes to this target must be voted by the Board.

Bridge & Other Infrastructure
Response: Condition Assessments are done on a qualitative index—Failed, Poor, Fair, Good, and Excellent (no numerical index in place at this time). They are in the process of moving towards a numerical index. Currently, Bridges with a "Fair" rating are considered as meeting the County's targets. NOTE: though Bridge conditions are assessed separately, they are reported along with many other infrastructure assets in the category termed "Other Infrastructure." These targets were set after GASB 34 via a formal resolution voted by the Board. Any changes to this target must be voted by the Board.

Of these, what is the preferred process?
Response: The use of a numerical approach such as the one used for pavement roadway lane miles is preferred; and as such, the County is moving toward a numerical index for Bridge and Other Infrastructure.

Is this process used for both general asset management purposes and for reporting in the CAFR?
Response: Yes.

Question 2: *What Performance measures are used to express these targets?*

Paved Roadway Lane miles
Response: Pavement segments within the Hillsborough County were surveyed and rated on a scale of 1 to 10. This overall condition rating index (OCI) includes a surface condition index (SCI—for cracking etc.), a roughness index (RI), and a structural value of road index (SSI). OCI for arterial roads is an average of all three indicators; and for local roads the OCI is an

average of the RI and SCI. Currently, pavement segments with an OCI of at least 6 to 7 are considered as meeting the County's targets. As such, the County is committed to preserve its paved roadway lane miles at a condition of 6 to 7 on a scale from 1 through 10, with 10 as the highest level.

Bridge & Other Infrastructure
Response: The County is committed to preserve Bridge infrastructure at a condition of "fair" on a scale from failed, poor, fair, and good to excellent. A "failed" infrastructure asset is one whose condition is deemed unsafe and should be repaired or replaced immediately. An "excellent" infrastructure asset is one that is newly constructed and functioning as intended.

The first paragraph of the RSI in the County's CAFR lists numerous types of infrastructure maintained by the County. The second paragraph states that the County's asset management system records the quantity, location and condition of EACH infrastructure asset managed by the Public Works Department. However, statistical and financial information is reported for only two classes of infrastructure assets—Paved Roadway Lane Miles and Other Infrastructure. While this classification clearly is permissible under GASB 34, could you kindly comment on your decision not to further classify infrastructure assets (i.e., set additional asset classes)?
Response: The County maintains a comprehensive inventory of infrastructure assets. These assets include: traffic lane miles, miles of curb, miles of road shoulders, miles of markings, pavement legends, miles of dividers, miles of guard railings, railroad crossings, pedestrian crossings, speed humps, intersections, miles of sidewalks, miles of sidewalk handrails, million linear feet of culverts, driveways, "Americans with Disability Act" ramps, signs, culverts, pedestrian poles, box culverts, curb inlets, ditch bottom inlets, grate top inlets, storm water manholes, control structures, junction boxes, sea walls, storm water lift stations, and end treatment. Despite such a comprehensive inventory, only two types of infrastructure (i.e. Paved Roadway Lane miles and Other Infrastructure) are reported in the CAFR. If the County were to report on each of the assets, then it would require considerably higher manpower, and that is deemed to be not cost-effective given the Department's levels of requirements and resources.

With respect to both asset classes below, the fourth paragraph of the RSI indicates that the County conducts periodic physical condition assessments and theoretical deterioration modeling to determine whether infrastructure assets are being maintained at the levels required. Could you kindly provide details of "what" is being measured using these assessments and this modeling?
Response: See responses for Question 1 and 2.

The third paragraph of the RSI discusses the condition measurement scale of 1 to 10 with 10 as the highest condition assessment. Could you kindly describe the specifics of "what" is being measured to determine the scale of 1 to 10?
Response: See responses for Question 1 and 2.

The third paragraph of the RSI discusses the condition measurement scale of failed to excellent. Could you kindly describe the specifics of "what" is being measured to determine the scale of failed to excellent?
Response: See responses for Question 1 and 2.

Are there any measures of customer satisfaction with system performance?
Response: Currently, the County does not have any customer satisfaction information. Customer satisfaction and benchmarking will be adapted as new performance measures—as proposed in Hillsborough County's Strategic Plan's Goal 3, which aims to, "work with citizens and neighborhoods in order to ensure quality services are delivered in a courteous and responsive manner."

Question 3: *Has this preferred methodology changed since the implementation of GASB 34? If so, list the specific changes.*
Response: No. The Hillsborough County Asset Management System, which records the quantity, location, and condition of each infrastructure asset managed by the Public Works Department, was in place by 1997 (i.e., several years prior to GASB 34). However, though GASB 34 was not the impetus, it did help the Public Works Department to obtain additional resources and support for the system.

Question 4: *Please describe any aspects of the approach used to set performance targets you consider to be unique to your agency or instrumental in the success of the approach?*
Response: The County's categorization of the "other infrastructure" asset class, which includes a number of asset classes that are not traditionally reported on.

Question 5: *Which group within your agency is responsible for setting condition targets? Do they meet to review results and/or adjust targets? What is the chain for approving condition targets?*
Response: Condition targets are set by the Public Works Department, which in turn are presented as a formal resolution to the Board for a vote.

Question 6: *How often does your agency set condition targets?*
Response: Condition targets were set in the first year of GASB 34 implementation, which were voted via a formal resolution by the Board. They remain the same unless the Public Works Department determines that they are not meeting the needs of the County or are not accomplishing the Departments strategic plan.

Question 7: *Which computer-based management systems if any do you use for setting condition targets? Is the Hillsborough County Asset Management System discussed above used to SET condition targets in addition to measuring condition?*

Pavement Roadway Lane miles
Response: Roadway Activity Plan (RAP), an internally developed computer program, which is compatible with Hansen.

Bridge
Response: PONTIS and Hansen. The department is in the process of trying to find software that is compatible with PONTIS.

Question 8: *Describe the extent to which your agencies' budgeting constraints affect condition targets (i.e., are condition targets based on budgets or vice versa)?*
Response: Budget constraints drive the process. The Department endeavors to achieve condition targets working within these constraints.

Questions 9: *What impact if any has GASB 34 reporting targets had on the setting of your condition targets? For example, did GASB 34 considerations cause your agency to set relatively conservative condition targets?*
Response: Yes, relatively conservative (i.e., low) condition targets were set so that the County could be assured of achieving the set targets.

Section B: Methods of Condition Assessment

Question 1: *With targets established as described in Section A, please now describe your condition assessment procedures, in terms of inspection protocols, etc.*

Paved Roadway Lane Miles
Response: Ride smoothness and wheel path rutting are measured mechanically using vans equipped with four digital cameras, laser equipment, global positioning system (GPS) receiver, and an inertial navigation system. In collecting data, the surveyors drove all of the Hillsborough County's 3,000 centerline roadway miles in both directions, taking snapshots of roadside attributes every 35 ft to provide 360-degree coverage. The SCI for pavement cracking is measured through visual observation performed by experienced survey crews.

Other Infrastructure
Response: A combination of visual and instrument tools are used to assess infrastructure assets under this category. For example, surveyors carry handheld, GPS enabled computers to project sites; thereby enabling them to directly input data on the condition of the assets—based on protocols that use GPS units and GIS data collectors for field data collection.

Question 2: *Has your condition assessment methodology changed since the implementation of GASB 34? Are "refinements" (not major changes) made to the methodology? Please describe or provide examples.*
Response: Not yet. However, there is some discussion of changing the condition assessment methodology for pavement roadway lane miles (i.e., dropping SSI in the calculation of the OCI).

Question 3: *What is the approximate sample size for your condition assessments (i.e. proportion of each asset class assessed)? How often do you intend to perform condition assessments? Has the frequency of condition assessments changed since GASB 34?*

	Sample Size	Frequency	Has frequency changed since GASB 34?
Paved Roadway Lane Miles	100%	Not done since initial one, in the process of doing in 2006	No
Other Infrastructure	100%	Varies with infrastructure asset class.	No

Question 4: *Please describe any aspects of the approach used to conduct condition assessments you consider to be unique to your agency or instrumental in the success of the approach.*
Response: No response.

Do you utilize quality control/quality assurance processes to ensure the consistency and the accuracy of the assessment?

Paved Roadway Lane miles
Response: Spot checks.

Other Infrastructure
Response: For stormwater, the University of South Florida created protocols for GIS post processing (i.e., data loading into the Departments asset management system; which increased the precision of data and facilitated quality assurance processes).

Question 5: *What group within your agency is responsible for conducting condition assessments?*
Response: Hillsborough County Public Works Department.

Question 6: *Do you outsource any component of your condition assessment? If so how is it working?*

Pavement Roadway Lane miles
Response: The Department selected a local general contractor and two sub contractors with specialized expertise to collect data.

Other Infrastructure
Response: For the stormwater asset elements, the Department contracted with the University of Florida to collect data.

Question 7: *Which automated data collection systems, if any, do you use for condition assessments?*
Response: All of the roadway asset data is integrated into its existing Hansen Infrastructure Management System Roadway Manual and is linked to its GIS base map. For stormwater, the University of South Florida developed a Stormwater Atlas from all existing and newly collected storm-water and drainage asset data using GIS software.

Question 8: *What is your agency's primary motivation in performing condition assessments? Is it a result of GASB 34 or for other reasons?*
Response: The primary motivation for the Public Works Department in performing condition assessments has always been preservation of its transportation system, as defined in its policy objectives.

Question 9: *Are there any improvements that can be made to the current condition assessment process?*
Response: Possible automation of the crack rating assessment.

Question 10: *Is your condition assessment methodology and extrapolated results (samples) consistent and replicable among multiple regions? If not, why not?*
Response: Hillsborough County does not extrapolate since it gathers infrastructure asset data on 100% of the system.

Question 11: *What degree of confidence do you have in your condition assessments (for either financial reporting or asset management purposes)?*
Response: High degree of confidence.

Question 12: *In our experience the condition assessment process for paved roadway lane miles is more advanced than for other infrastructure classes. Has your agency managed to consistently report condition assessments for other asset classes?*
Response: Yes. In addition to pavement roadway lane miles, Hillsborough County has well-developed condition assessment processes for other infrastructure, especially for stormwater asset elements.

Section C: Link between Condition Targets and Expenditure Requirements, including Budgetary Requirements

Question 1: *Who in your agency is responsible for estimated and actual expenditure calculations for achieving condition targets? Is it the maintenance or financial department or other?*
Response: The responsibility lies with the financial department, since expenditure allocations for achieving condition targets are dependent (driven) by the budget and on various assessments from the asset management system.

Question 2: *How difficult is it to establish links between condition targets and expenditures?*
Response: Difficult. Our CAFR shows budgeted infrastructure maintenance costs that we believe would approximate expenditures needed to achieve targets.

Question 3: *Are expenditure targets based on models/predictions, history, estimated costs of projects, finance and/or other budgetary considerations?*
Response: Expenditure targets are primarily based on budgetary considerations.

Question 4: *How do you approach the calculation of estimated and actual target expenditures incurred during a particular fiscal year?*
Response: Estimated expenditures are largely driven by budgetary constraints.

Question 5: *When comparing budgets and actual expenditure per GASB 34, is there an allocation of actual expenditure values among fiscal years?*
Response: No, both budgets and actual expenditure are strictly on a fiscal year basis with no allocation among fiscal years.

Question 6: *How do your approaches differ when calculating force accounts and other internal expenditures (such as utilities) versus contracted expenditures?*
Response: No difference in approach.

Question 7: *Is there a correlation between budget requests, expenditure estimates and actual amounts expended? To help you respond to this question we have summarized information from the CAFR RSI in the attached schedule. Please comment on your interpretation of the trends that may or may not be apparent in the schedule, if any.*
Response: These amounts correlate reasonably well, although there is some variation due to factors such as extreme weather events.

Question 8: *How do you account for the lag between the time expenditures are incurred (thereby improving conditions) and time of subsequent inspections?*
Response: This is not taken into consideration.

Question 9: *Are there any improvements that can be made to the process of linking condition targets and expenditure requirements?*
Response: This is an area of continuing interest to the County, but budgetary constraints have limited the pace of improvement.

Section D: The Allocation of Costs among Capital, Preservation, and Maintenance Categories

Question 1: *Do you allocate costs among capital, preservation, and maintenance categories? If so, what methodology do you use? Is this methodology used for general asset management, budgeting and GASB 34 financial reporting purposes?*
Response: The County follows the GASB 34 methodology.

Question 2: *Under GASB 34 definitions, maintenance costs are those that allow an asset to continue to be used during its originally estimated useful life. Capital costs increase the capacity or efficiency of the asset. "Preservation" costs generally are considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life, but do not increase the capacity or efficiency of the asset. Are your general asset management, budgeting, and GASB 34 financial reporting definitions of these categories consistent with the aforementioned GASB 34 definitions? Is there a clear definition of preservation costs (for extending lives only) that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized? Also see question C2 above. Further, we were told during our initial telephone interviews that the asset management system primarily captures physical data whereas the County's finance department (Clerk of Court) develops the financial data*

from this data for the CAFR. While there are significant differences in definitions of capital/preservation/and maintenance between asset management and GASB 34 accounting requirements, we were told that these differences are coded within the asset management system and used for both GASB 34 reporting purposes. The asset management categories also are used for budgetary purposes, but adjusted by finance for GASB 34 purposes (including GASB 34 budgetary reporting requirements). Please confirm or correct our understanding and kindly walk us through the detail of this reconciling process during our visit.

Response: Replacement bridges are capitalized while the replaced bridge is removed from the financial statements and a preservation approach is used for pavements. The Clerk's office captures infrastructure preservation expenditures by using a separate capital expenditure sub-object code and general ledger account number. For State of Florida financial reporting purpose, the County uses a sub-object code that identifies preservation expenditures as capital outlay on the fund financial statement. On the government-wide statement, the expenditures for the year charged to this sub-object code are moved to operating costs on the statement of activities.

Question 3: *Have there been any changes in how costs are allocated since the introduction of GASB 34?*

Response: No change.

Question 4: *How are networks and subsystems defined for cost estimating purposes? Are they different than for GASB 34 reporting purposes?*

Response: No response.

Question 5: *Which group within your agency is responsible for allocating costs among the aforementioned categories (capital, maintenance, and preservation)?*

Response: The DPW allocates costs between capital and preservation. The Finance Department (Clerk of the Court) is responsible for recording such allocations.

Question 6: *Do you use automated systems or manual methods to allocate costs? To what extent?*

Response: A semi-automated process is used to allocate costs. See above comments regarding coding.

Question 7: *For projects that have capital and preservation elements, do you allocate costs between the two categories? If so, what is your methodology for doing so?*

Response: See comments above regarding coding.

Question 8: *What degree of confidence do you have in the accuracy of the allocation of costs among the three categories?*

Response: No response.

Question 9: *Are there any improvements that can be made to the process of allocating costs among capital, preservation, and maintenance?*

Response: None reported.

Section E: Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Question 1: *Describe your accounting procedures for purposes of reporting infrastructure additions, retirements and replacements in the CAFR—specifically in Note 6; and, if different, for purposes of general asset management and budgeting.*

Additions
Response: Previously additions were reported once a year; now this has been shifted to a quarterly reporting cycle. Based on physical data from the Engineering Group, the Clerk's office capitalizes additions (on a per lane value).

Retirements
Response: Previously retirements were reported once a year; now this has been shifted to a quarterly reporting cycle. Based on physical data from the Engineering Group, the Clerk's off deletes retirements from the accounts.

Replacements of infrastructure assets
Response: Replacement of infrastructure is capitalized in the CAFR while replaced infrastructure is deleted from the accounts.

Question 2: *Has your accounting methodology for these items changed since the implementation of GASB 34?*

Additions
Response: The Clerk's office adds cost data to the physical data that has always been maintained by DPW.

Retirements
Response: The Clerk's office adds cost data to the physical data that has always been maintained by DPW.

Replacements of infrastructure assets
Response: The Clerk's office adds cost data to the physical data that has always been maintained by DPW.

Question 3: *Describe the extent to which your financial accounting processes are manual and/or automated?*
Response: Since the County's accounting process uses a relatively small database; all financial accounting processes are manual.

Question 4: *If processes are exclusively manual, do you have plans to implement an automated system?*
Response: Due to scale issues, the County has no plans to implement an automated system.

Question 5: *Are there any improvements that can be made to the process of accounting for additions, retirements, and replacements of infrastructure assets?*
Response: None reported.

Section F: Potential Effects on Bond Rating

Question 1: *Does your agency or government issue bonds to finance infrastructure?*
Response: Yes.

If yes, which agency is your rater?
Response: Moody's, Standard & Poor's, and Fitch.

Question 2: *What specific information do you provide to the bond rating agency? Is it the same or how does it differ from what is reported in the CAFR?*

Response: The CAFR is the primary source of information provided to the rating agency. In addition, every year the raters visit the County for a 2-day workshop—where, besides the presentations they are taken on a site tour. At the workshop, the County provides additional information, which consists primarily of reports on audited financial results, the County's budget, economic development, and outstanding debt. In addition, marketing material are presented on topics that are prevalent at the time. For example, this year's presentation was on emergency preparedness, last year's was on economic development; and 3 years ago the presentation was on the County's asset management system.

Question 3: *Has the bond rating agency requested additional/follow up information? If so, what have they requested?*
Response: No.

Question 4: *Has there been a change in your bond ratings as a result of new infrastructure accounting practices or implementation of GASB 34 requirements? If so, how has it affected your costs? In our initial telephone interview you informed us that you believed the bond raters were impressed with the Public Works Department's asset management program. Could you expand on that comment with examples of specific aspects of your asset management that seemed to please them?*
Response: The County has had high ratings to begin with, so not much opportunity for upward movement. However, since the County had a good asset management system in place, early implementation of GASB 34 was possible; which greatly impressed the raters. This (among many other factors) led to good ratings (i.e., which was adjusted higher after the 2-day workshop in which the processes of the condition assessment system and their implementation of GASB 34 requirements were presented 2 to 3 years ago). Overall, GASB does not change ratings, but it certainly helps maintain high ratings.

Question 5: *What factors are important in the rating process? What do you observe the raters looking for, what impresses them, what disturbs them, etc?*
Response: Important rating factors include finances, management, debt, economy, and investments. The asset management system that supports the information in the CAFR is an example of something that impresses the rating agencies. An example of something that disturbs the rating agencies is a lack of adequate financial planning and adequate reserves.

Section G: Operational and Financial Impacts of GASB 34 Reporting

Question 1: *Has your organizational approach (i.e., planning, etc.) changed since using the modified approach of GASB 34?*
Response: No. Most of the processes were already in place prior to GASB 34. In terms of general intra-departmental communication, GASB has helped initiate dialogue and camaraderie between the Engineering and Financial departments.

Question 2: *Is the information on condition assessments shared, both internally and externally? If so, how is this information shared?*
Response: Yes, with other governments via presentations and CAFR.

Question 3: *Are external organizations (e.g., public interest, higher education, etc.) interested in your operational and financial reporting? If so, to what extent?*
Response: No external interest in operational and financial reporting processes has been noted.

Question 4: *Since GASB 34, what has been the trend in condition assessments for assets? How does your County explicitly or intuitively define good asset management (e.g., balancing cost and results of asset management, is there a point of deterioration where asset management is no longer worth it)?*

Response: Increased technology, a movement towards a numerical approach, and many people are now performing condition assessments.

Question 5: *To what extent has the RSI been subject to auditor scrutiny? Has auditor scrutiny increased or decreased since adoption of GASB 34?*

Response: Auditor scrutiny of the RSI has not noticeably changed since the adoption of GASB 34. The auditors appear satisfied with the approach utilized.

CITY OF SACO WORKSHOP

Workshop Date: November 7, 2006
Participants: **Lisa Parker,** Finance Director, City of Saco
Michael Bolduc, Public Works Director, City of Saco
Ron Keen, City Engineer, City of Saco
Doug Howard, Utilities, City of Saco

Section A: Process for Setting Condition Targets

Question 1: *What process do you use to determine which condition targets (for example, minimum PCI or Asset Management System Rating) will be used for each asset class? Of these, what is the preferred process? Is this process used for both general asset management purposes and for reporting in the CAFR? If not used for both, why? What are the differences?*
Response: City of Saco has 111 center line road miles of pavement and 40.4 mi of sidewalks. The City's goal is to achieve a minimum satisfactory Pavement Condition Index rating of 70, based on the Road System Management System (RSMS) scale, for 80% of the City's total lane miles. RSMS is a statewide rating system developed by Maine DOT. This goal, once established by the City Public Works Department needs to be ratified by the City Administrator.

Question 2: *What Performance measures are used to express these targets? Are there any measures of customer satisfaction with system performance?*
Response: There were no measures of customer satisfaction until 2004. However, a citizen opinion survey was done in 2005 and 2004 by a professional research firm. Using a randomized selection process, the research team completed 400 phone surveys, each lasting approximately 16 minutes, to Saco adult residents gauging their satisfaction with city performance. This survey, which evaluates all City departments (finance, public works, fire, police, etc.) on criterions of service, is an integral part of the City's performance evaluation. With respect to road maintenance the results of the survey were "good."

Pavements
The CAFR RSI indicates that for streets, it is the City's intention to maintain a minimum PCI of 70 which is a 2 Asset Management rating. This major infrastructure system is further divided into subsystems which we would presume have their own targets. Could you kindly provide us with more information about your methods of calculating the PCI, in particular information on these subsystem elements of the PCI, what the targets are for each of the elements, how they were determined and by whom? The CAFR RSI (middle of page 71) talks about 17 potential defects which are measured in the assessments. Could you kindly provide detail of these defects and related targets? Does the City maintain any bridges and if so are they reported as part of streets or elsewhere in the financial statements?
Response: PCI is measured annually via a visual check of various RSMS components such as cracking, drainage, traffic, etc. Sidewalks are measured as a separate program. All bridges in the City are maintained by the State. There are several culverts that fall under the purview of the City but are not reported in the CAFR, and while they are inventoried, they are not assessed for condition.

Other Infrastructure
The CAFR RSI indicates that for other infrastructure assets, it is the City's intention to maintain a minimum 2 Asset Management rating. This major infrastructure system is further divided into subsystems which we would presume have their own targets. Could you kindly provide us with

more information on these subsystem elements, what the targets are for each of the elements, how they were determined and by whom?
Response: Other infrastructure includes 124 traffic signals; 2660 sign posts; 3566 signs; 135 guardrails (in cooperation with the Maine Department of Transportation); and 18,700 ft of sewer. These are assessed via a visual inspection and are rated on a 1 to 4 scale.

Question 3: *Has this preferred methodology for setting condition targets changed since the implementation of GASB-34? If so, list the specific changes*
Response: The methodology has not changed.

Question 4: *Please describe any aspects of the approach used to set performance targets you consider to be unique to your agency or instrumental in the success of the approach?*
Response: The GIS tool that is used in condition assessment is unique for a jurisdiction the size of Saco. It has an inbuilt GPS locator that is connected to a work order database. In fact, the implementation of GASB 34 provided the impetus for the City to obtain funding to acquire this tool.

Question 5: *Which group within your City is responsible for setting condition targets? Do they meet to review results and/or adjust targets? What is the chain for approving condition targets?*
Response: The City Public Works Department sets the condition targets; and subsequently the established targets are ratified by the City Administrator.

Question 6: *How often does your City set condition targets?*
Response: The condition targets have not been re-set since the original targets were established. Once more historical data is available and it is possible to assess trends, the City may review the targets.

Question 7: *Which computer-based management systems if any do you use for setting condition targets?*
Response: RSMS for pavements and Cityworks (a GIS-based work management system developed by Azteca) for other asset classes.

Question 8: *Describe the extent to which your City's budgeting constraints affect condition targets (i.e. are condition targets based on budgets or vice versa)?*
Response: Initially there was a significant budgetary effect on targets. However, now achievement of condition targets tends to drive budgets. This shift is a result of: (1) the implementation of the public survey that demonstrated public support for well-maintained infrastructure; and (2) the Council is sufficiently knowledgeable as to the importance of infrastructure being on the "flat side of the S-curve" (i.e. the importance of prevention before the asset has seriously deteriorated). The Council gives road maintenance a high priority and this is due, in part, to the quality of the information from the City's asset management system.

Question 9: *What impact if any has GASB 34 reporting targets had on the setting of your condition targets? For example, did GASB-34 considerations cause your City to set relatively conservative condition targets for either financial reporting or asset management purposes? In our earlier (May 2005) interview you had mentioned that the City's overall objectives in establishing a GIS based asset management system were improved infrastructure management together with better accountability. GASB 34 infrastructure requirements appeared on the scene at the right time, making the selection modified approach—as opposed to the depreciation approach—an easy decision. Without the GASB 34 modified approach requirements would your target selections have been different?*

Response: City of Saco has only one set of targets (i.e., the targets that are reported under GASB requirements). The City is working hard towards achieving these targets because they don't want to be required to revert back to the depreciation method.

Section B: Methods of Condition Assessment

Question 1: *With targets established as described in Section A, please now describe your condition assessment procedures, in terms of inspection protocols, etc.*

Pavement
The RSI indicates that the City manages its pavement system by means of inspections every three years. Please provide more detailed information about this inspection program [e.g., Is all pavement inspected during the three year cycle or on a sample basis (see question 3 below)]? What type of training are the inspectors subject to? Is there any use of technical equipment in the assessments? How are measurements made of each of the elements described in Section A2 above?
Response: Pavements are assessed annually. They are assessed using the latest technology, such as the mapping technologies GIS, GPS, and the Maine Department of Transportation's RSMS. Using these tools the Public Works Department has been able to create and keep up-to-date an inventory and condition rating system of all its roads and sidewalks. These tools help the department prioritize projects and utilize resources more effectively.

With regard to the dramatic improvement in street condition levels from 2001 TO 2003 to 2004 TO 2005 as shown on page 71 of the CAFR RSI; could you speak more to this improvement, particularly whether there has been any change in methodology? In responding to this question please consider that this information appears to contradict that which appears in the notes to the financial statements in the middle of page 32 (it says overall condition was not improved).
Response: Initially the assessments were done by consultants; and now the assessments are done "in-house." Though the methodology of condition assessments has not changed; the assessment approach has changed (i.e., consultant conducted a "desk top" survey, while the "in-house" raters conduct a drive through survey). Furthermore, of late the pavement budget has increased dramatically (in 1999–2000 the budget was $ 100,000; and in 2003–2004 the budget was $350,000-$500,000). These factors may account for the observed dramatic change.

Other Infrastructure
The RSI indicates that the City conducts inspections of other infrastructure assets every three years which is performed by an independent engineering firm. Please provide more detailed information about this inspection program [e.g. Are all assets inspected during the 3 year cycle or on a sample basis (see question 3 below)]? What type of training are the inspectors subject to? Is there any use of technical equipment in the assessments? How are measurements made of each of the elements described in Section A2 above?
Response: Condition assessments of other infrastructure are reported every 3 years. However, inspections are done every year (i.e. rolling inspections), which are averaged at the 3-year window. Visual inspections are conducted for all infrastructure, while TV inspections are done for sewers (the technology is shared with two other communities).

Question 2: *Has your condition assessment methodology changed since the implementation of GASB 34?*
Response: No, the methodology has not changed (since there were no condition assessments prior to GASB 34).

With regard to the street inspections performed internally we were told in our earlier interview that the first condition assessments for GASB 34 purposes were performed by independent contract engineers in 2001. In 2004 the condition assessments were done internally. Two Public Works

engineers took specialized training to enable them to repeat the process used in 2001 in 2004. The City's auditors evaluated the qualifications of these internal engineers and tested their work by consulting with outside engineers on some of their assumptions and conclusions. For example, Public Works engineers assessed an absence of deterioration of certain significant sewer network assets based in large part on the type of material being assessed. The auditors verified the validity of these assumptions with outside engineers. Could you kindly confirm this again? Have you had similar experiences you can share with us?
Response: Not answered.

Question 3: *What is the approximate sample size for your condition assessments (i.e., proportion of each asset class assessed)? Has the frequency of condition assessments changed since GASB 34? Please mark your answers in the table below:*

	Sample Size	Frequency	Has frequency changed since GASB 34?
Streets	100%	Annual	Yes, no condition assessments before the implementation of GASB 34
Other Infrastructure	100%	Every 3 years	

Question 4: *(a) Please describe any aspects of the approach used to conduct condition assessments you consider to be unique to your City or instrumental in the success of the approach.*
Response: GASB encouraged cities to measure their service efforts and accomplishments which is instrumental in the success of our condition assessment approach. Using the GASB suggested criteria; Saco is the only Northeast city of its size to undertake such an effort. The citizen opinion survey was done in 2005 and 2004 by a professional research firm. Using a randomized selection process, the research team completed 400 phone surveys, each lasting approximately 16 minutes, to Saco adult residents gauging their satisfaction with city performance. This means that what is reported as citizen opinions are considered scientifically accurate: the study is statistically valid to the 95% confidence interval level with a margin of error of plus or minus 4.9%. The results of the survey are of importance to our Council members.

(b) Do you utilize quality control/quality assurance processes to ensure the consistency and the accuracy of the assessment?
Response: There are numerous quality control/quality assurance processes. These processes include: (1) public citizen reports (which provide insight to the quality of the infrastructure); (2) random consumer phone surveys conducted by marketing consultants (this is a biannual survey where in the intervening years government employees are surveyed); and (3) comparison of assessments across years (if there is a discrepancy the City makes note of it for next years assessment). In addition, the inspectors are certified by Maine DOT.

Question 5: *What group within the City is responsible for conducting condition assessments?*
Response: City of Saco Public Works Department.

Question 6: *The RSI indicates you outsource some of your condition assessment? How is it working?*
Response: In 2001 pavement condition assessments were out-sourced to consultants. Currently, assessments are done internally and the City believes they are more accurate than previous ones.

Question 7: *Which automated data collection systems, if any, do you use for condition assessments?*
Response: RSMS for pavements and Cityworks for other asset classes.

Question 8: *Are there any improvements that can be made to the current condition assessment process?*
Response: There are two potential improvements to the current condition assessment process: (1) utilization of the work order module in Cityworks; and (2) conducting a biannual survey among government officials in the years that the citizen survey is a not administered, in order to ensure consistency and accuracy of the assessments.

Question 9: *What degree of confidence do you have in your condition assessments (for either financial reporting or asset management purposes)?*
Response: High degree of confidence in condition assessments, especially after the City Public Works Department undertook to conduct condition assessments. Turnover among DPW employees is very low and this enhances the quality of the assessments.

Section C: Link Between Condition Targets and Expenditure Requirements, Including Budgetary Requirements

Question 1: *Who in your City is responsible for estimated and actual maintenance expenditure calculations for achieving condition targets?*
Response: The Department of Public Works develops budget requests derived from and provided to the Finance Department.

Question 2: *How difficult is it to establish links between condition targets and maintenance expenditures?*
Response: The process of establishing links between condition targets and maintenance expenditures has become somewhat easier with the improved condition assessment tool, which was described before. Moreover, now there is historical trend data to refer back to (i.e., provides more accountability). This is a steadily improving area.

Question 3: *Are expenditure targets based on models/predictions, history, estimated costs of projects, finance and/or other budgetary considerations?*
Response: Expenditure targets are based on a combination of factors, which includes history, estimated costs, and budgetary considerations.

Question 4: *How do you approach the calculation of estimated and actual target expenditures incurred during a particular fiscal year?*
Response: Unused funds are carried forward to the next year. Also see Question 8 below.

Question 5: *When comparing estimated and actual expenditure per GASB 34, is there an allocation of actual expenditure values among fiscal years?*
Response: The City of Saco reports only what is actually spent in a particular year.

Question 6: *How do your approaches differ when calculating force accounts and other internal expenditures (such as utilities) versus contracted expenditures?*
Response: Same approach is used when calculating force accounts and other internal expenditures versus contracted expenditures.

Question 7: *Is there a correlation between budget requests, expenditure estimates and actual amounts expended?*
Response: Yes, there is a high correlation. They are very similar.

Question 8: *How do you account for the lag between the time expenditures are incurred (thereby improving conditions) and time of subsequent inspections (see question 2 above)?*
Response: There is no specific accounting for the lag. Since the City of Saco performs its annual inspections, there is no significant effect from the lag (i.e., the inspections are performed shortly after the construction season).

Question 9: *Are there any improvements that can be made to the process of linking condition targets and expenditure requirements?*
Response: Within a 2- to 3-year time frame, the City is attempting to move towards performance-based budgeting which should further strengthen the linkage between performance targets and budget allocations.

Section D: The Allocation of Costs among Capital, Preservation, and Maintenance Categories

Question 1: *Do you allocate costs among capital, preservation, and maintenance categories? If so, what methodology do you use? Is this methodology used for general asset management, budgeting and GASB 34 financial reporting purposes?*
Response: Yes (see question 2 below).

Question 2: *Under GASB 34 definitions, maintenance costs are those that allow an asset to continue to be used during its originally estimated useful life. Capital costs increase the capacity or efficiency of the asset. "Preservation" costs generally are considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life, but do not increase the capacity or efficiency of the asset. Are your general asset management, budgeting, and GASB 34 financial reporting definitions of these categories consistent with the aforementioned GASB 34 definitions? Is there a clear definition of preservation costs (for extending lives only) that distinguishes such costs from those that increase capacity or efficiency and are thus capitalized?*
Response: The City of Saco closely follows GASB definitions (for example, if a bridge is replaced it is accounted as preservation). Internally, the City does not allocate costs during the year. For financial reporting purposes a once a year allocation is made by the Finance Department based on coding done throughout the year by the Public Works Department.

Question 3: *The City's RSI talks about short term maintenance activities and an apparently separate on-going street rehabilitation program. Do either of these activities extend asset service capacity? If so, are those costs separated out and treated as capital? The RSI (page 71) indicates that the overall condition of the streets "was definitely improved" through short term maintenance. Could you speak to the word "improved"? We presume this means that the condition rating has increased but that service capacity has remained the same? We note on the City's web site a listing of street projects, many of which include "widening" which would increase service capacity. How does the City separate these costs out?*
Response: The first part of the question not answered. For financial reporting purposes, the widening of streets are accounted as capital costs because service capacity is added.

Question 4: *Have there been any changes in how costs are allocated since the introduction of GASB 34?*
Response: No

Question 5: *How are networks and subsystems defined for cost estimating purposes? Are they the same as for financial reporting (RSI) purposes?*
Response: Not answered.

Question 6: *Which group within your City is responsible for allocating costs among the aforementioned categories (capital, maintenance, and preservation)?*
Response: Finance Department—once per year.

Question 7: *Do you use automated systems or manual methods to allocate costs? To what extent?*
Response: Not answered.

Question 8: *For projects that have both capital and preservation elements, do you allocate costs between the two categories? If so, what is your methodology for doing so?*
Response: For financial reporting purposes yes the City would divide the costs between preservation and capital.

Question 9: *What degree of confidence do you have in the accuracy of the allocation of costs among the three categories?*
Response: High degree of confidence.

Question 10: *During our initial interview we were told that defining additions versus preservation and maintenance costs is not an issue for a small city like Saco. The Public Works department is very familiar with the GASB definitions and carefully labels their projects for accounting and asset management purposes. For the CAFR this is an annual effort which is enhanced by the fact that finance tracks expenditures throughout the year and is able to identify additions before the annual effort.*
Response: No new information.

Question 11: *Are there any improvements that can be made to the process of allocating costs among capital, preservation, and maintenance?*
Response: Not answered.

Section E: Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Question 1: *Describe your accounting procedures for purposes of reporting infrastructure additions, retirements and replacements in the CAFR; and, if different, for purposes of general asset management and budgeting.*

Additions
Response: See Section D, Question 2. Subdivision roads present an interesting aspect of this issue. These are typically constructed by developers and then dedicated to the City at no cost. Accordingly, there isn't a cost basis for making the addition.

Retirements
Response: See Section D, Question 2.

Replacements of infrastructure assets
Response: See Section D, Question 2.

Question 2: *Has your accounting methodology for these items changed since the implementation of GASB-34?*
Response: No change since the implementation of GASB 34.

Question 3: *Describe the extent to which your financial accounting processes are manual and/or automated?*
Response: The financial accounting processes are automated (i.e., the City uses vendor based financial accounting software that can flag a capital project). However, the accounting for infrastructure is a manual process.

Question 4: *If processes are exclusively manual, do you have plans to implement an automated system?*
Response: Not answered.

Question 5: *Are there any improvements that can be made to the process of accounting for additions, retirements, and replacements of infrastructure assets?*
Response: The accounting methodology should be improved to include sub-division roads and sidewalks as additions.

Section F: Potential Effects on Bond Rating

Question 1: *Does your City issue bonds to finance infrastructure?*
Response: Yes.

If yes, which agency is your rater?
Response: Moody's, and Standard and Poor's.

Question 2: *What specific information do you provide to the bond rating agency? Is it the same or how does it differ from what is reported in the CAFR?*
Response: Bond rating agencies generally review budgets, City policies, performance measurement reports; and ask questions about the City's asset management systems.

Question 3: *Has the bond rating agency requested additional/follow up information? If so, what have they requested?*
Response: The rates had numerous questions regarding the City's approach to asset management in 2002, the initial year of GASB 34 implementation. There has been less discussion since then, although occasionally follow up information is requested via a phone interview.

Question 4: *Has there been a change in your bond ratings as a result of new infrastructure accounting practices or implementation of GASB 34 requirements? If so, how has it affected your costs?*
Response: Yes, there was an increase in the bond rating after the initial implementation of GASB 34 and a second increase in 2004. This resulted in a reduction of 20 basis points ($2.4 million savings) and 10 basis points ($750K savings) in these two bond issues. However, it is difficult to directly attribute the improved bond ratings to the City's implementation of GASB 34's modified approach.

Question 5: *What factors are important in the rating process?*
Response: City management and the presence of reserves are probably the two most important factors in the rating process.

Question 6: *During our earlier interview we were told that the City has had significant discussions with bond raters about the City's infrastructure/GASB 34 program in conjunction with several bond issues. While the raters will not state this program has enhanced the City's bond ratings, their comments indirectly indicate the City's asset management program and the modified approach do positively influence the rating. The raters who talk with the City are always impressed. Could you update us on this matter?*
Response: Of late, the focus of bond raters has shifted away from infrastructure to other indicators such as the city's cash reserves, revenue growth, etc.

Section G: Operational and Financial Impacts of GASB 34 Reporting

Question 1: *Has your organizational approach (i.e., planning, etc.) changed since using the modified approach of GASB 34?*

Response: Since implementing the modified approach of GASB 34, there have some minor refinements in the City's organization approach, but nothing significant.

Question 2: *Is the information on condition assessments shared, both internally and externally? If so, how is this information shared?*
Response: Yes, information is shared both internally and externally via the City of Saco website.

Question 3: *Are external organizations (e.g., public interest, higher education, etc.) interested in your operational and financial reporting? If so, to what extent?*
Response: The information is posted on the City's web-site. However, other than by financial organizations and some Council members, there has been little interest in the operational and financial reporting.

Question 4: *During our initial interview we were told that outside of the raters and the auditors, there is little outside interest in GASB 34. However, the City has an active outreach program with its citizens. Recently the City engaged an independent reviewer to survey citizens about City services. With respect to road maintenance the results of that survey were "good," which is rarely the road condition opinion in northeastern states. This was attributed to the City's infrastructure asset management program. Could you update us on this matter?*
Response: There was remarkably little change in results of the citizen surveys in 2004 and 2005. Other than that, nothing new to report.

Question 5: *Since GASB 34, what has been the trend in condition assessments for assets? How does your DOT explicitly or intuitively define good asset management (e.g., balancing cost and results of asset management, is there a point of deterioration where asset management is no longer worth it)?*
Response: The trend in condition assessments has been good. Yes, there is a point of deterioration where asset management is no longer worth it; at this point the asset would need to be replaced. For example, there is a significantly deteriorated bridge in the City that would cost more to repair than replace. In that circumstance, the choice is clear.

Question 6: *To what extent has the RSI been subjected to auditor scrutiny?*
Response: There was some scrutiny in the beginning, but negligible now.

Has auditor scrutiny increased or decreased since adopting GASB 34?
Response: No change.

WASHINGTON (DC) SUBURBAN SANITARY COMMISSION (WSSC) WORKSHOP

Workshop Date: September 11, 2006
Participants: **Kim Luquette,** Accounting Group Leader
Sheila Cohen
Lucy Betz

In addition to conducting workshops for a cross-section of DOTs, the research methodology also includes reviewing the GASB-34 practices of publicly owned and operated water/wastewater utilities. Like transportation agencies, water and wastewater utilities have large investments in long-lived infrastructure assets that are directly linked to maintaining level of service, safety, customer satisfaction and meeting regulatory requirements.

Recognizing that the Washington Suburban Sanitary Commission (WSSC) was not far along in the process of developing advanced asset management techniques and related financial reporting programs, the PB Team opted to use a "free-flow" interview approach. After an initial introduction of the NCHRP study and a brief description of the previously used questionnaire, a discussion ensued on the potential links between GASB 34, asset management and the credit rating process as they might be applied to WSSC. The following is a summary of the most salient observations made during the interview:

Setting Condition Targets and Conducting Condition Assessments

Since WSSC utilizes the depreciation approach for compliance with GASB 34, it does not set condition targets or conduct condition assessments in the manner required under the modified approach. In general, there are no formalized performance requirements linked to financial statements or to budget requests for infrastructure replacement/preservation. However, different groups are responsible to justify their performance on a recurring basis and there are in house and purchased programs and software to aid in such justification. While there is a formalized inspection program for dams and reservoirs, the program is not set in the context of GASB 34 requirements; rather it is set in the context of safety issues. Consequently, WSSC uses the depreciation approach for its financial statements. However, there is ongoing discussion about developing a formal condition assessment program that could lead to the adoption of the modified approach at some future point.

The Allocation of Costs among Capital, Preservation and Maintenance Expenditure Categories

For asset management and ongoing accounting purposes WSSC accumulates costs primarily on a project basis. There are two major categories used for ongoing asset cost estimating and accounting purposes: growth (all debt financed) and rehabilitation (not debt financed.) No ongoing internal allocations are made for GASB 34 capital and maintenance expenditure categories. Rather, these are determined in separate calculations for financial reporting purposes. Again, there is ongoing discussion about developing a more formal program in this area.

Asset Additions, Retirements and Replacements

WSSC uses a mixture of spread sheet and Access database processes to produce these amounts for financial reporting purposes. A formal system tied to budgetary and capital processes is being considered. With respect to retirement and replacement of assets, different methods are used depending on the type of asset. For example, the costs of sewer lines is removed from the accounts on a "first-in-first out" basis. Most other assets are removed from the accounts on the basis of specific costs identified with the assets.

Potential Effects on Bond Rating

WSSC uses all three rating agencies for its bonds. The information provided to the raters on an ongoing basis consists primarily of periodic engineering, financial and other internal reports. Meetings are usually held with the raters for each bond issue to provide additional bond specific information. Generally, asset condition information as contemplated by GASB 34 is not part of the information requested by the raters. The raters generally are interested in:

- The capability of financial management
- The wealth of the constituents (e.g., to assess the ability of the Commission to raises rates to repay debt)
- Debt structure/burden
- Maintenance program/deferred maintenance.

Competing Priorities

A significant driver of WSSC's is the fulfillment of the terms of a consent decree concerning sanitary sewer overflows in WSSC's wastewater collection system. Complying with these terms is a very high priority for WSSC and this has tended to divert attention from less urgent matters, such as implementing a condition inspection program that would support adoption of the modified approach. This situation is unlikely to change in the absence of a passion for asset management.

CHAPTER 4

Peer Exchange Conference Call (March 9, 2007)

Participating Agencies

Florida DOT
Ohio DOT
Oregon DOT
Texas DOT
Washington DOT
Fitch Ratings
GASB (represented by Roberta Reese, GASB project manager, whose views expressed below are not to be interpreted as official positions of the GASB itself)
Hillsborough County
City of Saco, Maine
Washington Suburban Sanitary Commission
Moderator: Wayne McDaniel, PB
Assisted by Edward Chait, CPA

The purpose of this call was to review the major topics and findings of the study. PB had already reviewed with each agency the specific report for its workshop. PB did not intend to review each agency's report again during the call, unless some egregious error had crept into the document. Rather, PB endeavored to identify common themes and best practices across all of the workshops. The intent was to solicit participant reaction to these findings. The effect of the interplay of discussion among participants stimulated reaction. Following is a summary of the common themes and best practices discussed during the call together with significant participant reaction.

Determination of Condition Targets

How the Targets are Determined

The determination of condition targets is fairly significant for agencies that use the modified approach. There is a range of how formal these targets are and how they are determined. In some areas they are set by a working group or a commission, and at the far end of the range, Florida DOT's targets are set by a state statute.

Some Agencies Use Two Sets of Targets

Some agencies, Ohio DOT (ODOT) and Texas DOT (TxDOT) in particular, reported using two sets of targets; one for GASB reporting purposes and the other for internal management.

There was some disagreement about the use of multiple targets. For those agencies that use two sets of targets, there were two reasons for this practice.

(1) GASB targets call for the documented minimum acceptable standard, but internally agencies want their managers to reach for higher standards.
(2) The two sets of targets provide a "cushion." This is judged desirable, since if agencies consistently don't meet their GASB targets they will no longer be allowed to use the modified approach.

Roberta Reese, the representative from GASB, believed that GASB wasn't expecting different targets to be set for internal and for reporting purposes. However she knew of no reason to object to the practice. Lisa Parker of Saco, Maine felt that two sets of targets defeats the purpose of the asset management system. In her opinion, there should be one set of targets to drive management decisions. Marcy Yates of Washington DOT (WSDOT) felt that as long as the two sets of targets are disclosed, the information is available and should not cause problems.

In response to reason number 2, some felt that this was a negative attribute of the GASB 34 requirements and there may be better alternatives as a solution for when targets are not met.

Are the Targets Driving Budgets or Vice Versa?

In some places, budgets drive targets and in others the targets drive the budgets. A number of approaches were discussed regarding budgeting:

- Washington DOT provides the legislature with a menu of items that they can "buy." The ultimate funding level determines both the maintenance and capital programs. They show the legislature what outcomes can be achieved with various investment levels.
- Hillsborough County receives the budget and then determines what level of service that translates into. They present their needs, but may get much less than they ask for. On one occasion, they were given additional funding so they worked with the Board to determine what projects to add.
- Ohio DOT has a goal-driven process. They place preservation as a priority. Funding is first allocated to preservation projects, and what is left over is available for capital improvements.

Methods of Condition Assessment

Sample Size

Condition assessment is generally done more frequently than GASB 34 requires, sometimes with a 100% sample size for smaller agencies. Ohio DOT collects a lot of data that is not required to be reported on the CAFR. In addition, since condition assessments there are tied directly to individual managers' performance reviews, great care is taken to ensure that they are accurate.

Ancillary Assets

Frequency of condition assessment may depend on the asset category, as ancillary assets often do not have as comprehensive an assessment program as pavements and bridges. Most agencies are moving to greater automation in condition assessment for increased safety and efficiency. Some agencies are adding more ancillary assets to their assessment programs, like rest areas, culverts, striping, drainage, etc.

Estimated Cost to Achieve Targets

Most agencies felt that they didn't have sufficient data to estimate the costs to achieve targeted conditions. This is due in part to the "apples and oranges" problem, since it requires comparing

management-system generated project-oriented forecasts unconstrained by fiscal year to actual fiscal year expenditures. This becomes a difficult calculation to make. Therefore, many agencies just report the budget. The following issues complicate this calculation:

- Expenditures are often not in the same period as results.
- Weather conditions such as droughts, flooding and hurricanes can drastically impact the budget.
- In Ohio, budgets are tied to performance goals so they fluctuate monthly.
- GASB definitions of preservation are different than definitions used by state and local governments and specified by the Federal Highway Administration (FHWA).
- Under a pure preservation concept (rather than the "modified approach"), changes in condition levels would be reflected as a preservation charge to be used in financial statements in lieu of depreciation. Asset management systems haven't progressed to the point where a preservation charge can be applied.
- There needs to be a stronger link between a condition assessment and spending. Currently, there is little consistency in the way that this is applied across entities.

Categorization of Costs

Two main issues arose regarding allocation of costs. First, some projects include both preservation and capital. For example, a highway may be reconstructed while adding extra lanes. The second major issue is that, if using the modified approach, GASB classifies the replacement cost of an asset as preservation and not capital.

Allocation of Costs Within a Single Project

A number of issues make this cost allocation difficult:

- Some budget programs are structured to meet FHWA guidelines which, unlike GASB, see preservation as capital. This conflict between GASB and FHWA definitions creates complications.
- On a project basis it is difficult to capture how much money was spent for capital and preservation purposes. Agencies ask engineers to go through the project and categorize costs as either preservation or capital. WSDOT reported that there has been some resistance from engineers when they are asked to do this.
- Tracking two funding sources for one project is cumbersome and in some agencies has met resistance.

On the other hand, the Texas DOT actually found a benefit in the increased categorization of costs as preservation. When presented in this manner, the legislature was more willing to fund the projects since they were not viewed as discretionary.

A common solution to this challenge was "after-the-fact" allocations. For example, Florida does the allocation at the end of the year based on how many lanes were resurfaced versus replaced. Saco, Maine and Hillsborough County also find this approach easiest.

Replacement as Preservation

GASB's definition of replacement of an asset as preservation was somewhat contentious. Agencies opposed the definition for the following reasons:

- Fitch ratings noted that agencies often borrow for large preservation projects. This debt appears on the liability side of the balance sheet with no corresponding asset.
- It is too "lumpy" to expense the entire cost of a bridge replacement in one year.
- It is counterintuitive to call the building of new structure preservation.

Some agencies, such as Florida DOT, view replacements as improving safety or increasing the speed limit. However, most did follow the GASB guidelines even if they disagreed with it, primarily because they were required to by their commitment to GASB standards.

When using the depreciation method, as in states like Oregon, replacement costs are capitalized and this is not an issue. Similarly, Texas uses the depreciation method for its bridge assets since it had good inventory upon which to base the depreciation calculation. This has the side benefit of allowing it to capitalize bridge replacement costs.

Roberta Reese explained that the Board's reasoning for this position was that in the modified approach, it is appropriate to capitalize the parts of the project that are improvements. If you remove the whole old bridge and then replace it, capitalizing that cost is inconsistent with the modified approach which implies that assets have infinite lives if properly preserved. If this is not the case, then the asset needs to be depreciated. She added that there is no wiggle room in the standard.

However, the agencies felt that this was too rigid, as preservation techniques are not always sufficient, and sometimes there is a need to add capital. Even with preservation, bridge life spans are indefinite, not infinite. Agencies prefer using the modified approach since it shows the value of preservation and they would like to see a solution that would allow them to retire an asset within the modified system. This dialogue led to a discussion of the benefits of using the modified and/or depreciation approaches. Roberta Reese encouraged participants to choose the best method for their needs while considering the tradeoffs. One of the main benefits of the modified approach according to participants is that it is more consistent with their approach to managing assets, as depreciation does not accurately reflect the efforts to preserve assets. However, some commented that there is no reason why the preservation information cannot also be reported for assets that agencies choose to depreciate.

Washington DOT asked about the proper treatment in a situation where they are replacing timber bridges with steel bridges that do not have the historical costs of timber bridges. Roberta Reese believed that since the old bridges were built before costs were recorded, these assets are going on the books for the first time and therefore can be capitalized.

Fitch Ratings noted that with the modified approach, preservation is not capitalized even though it is often associated with debt. This leads to a skewed balance sheet. However, Roberta Reese noted that over time the agencies pay down the debt and this is resolved. Another issue noted by Fitch Ratings was that assets are placed on the books at original cost, but when assets are replaced this is done at a much higher cost. Participants recognized that the modified approach is "lumpier," with spikes in expenses when large preservation/replacement activities take place. Depreciation creates a "smoother" effect over time. However, in large agencies with significant networks and preservation expenses each year, the number of assets creates a smoothing effect since it is likely that each year some will incur large costs.

Additions and Retirements

Some agencies had a difficult time reporting additions and retirements of assets. They are used to doing this for asset management on a project basis, but not financial reporting on a functional basis. After the initial years of implementation, everyone has figured out how to do this. However, most agencies have not mechanized linkages between asset management and financial reporting of additions and retirements, so the linkages are handled manually, typically once a year.

Bond Raters Interest

The modified approach is significantly more labor-intensive than the depreciation approach. During earlier research some agencies believed that the use of the modified approach had a pos-

itive impact on bond ratings. While those agencies reported an increase in bond ratings after using the modified approach, there is no clear evidence that the increase was due to this reason.

Fitch Ratings explained that many factors go into a credit analysis including the supporting revenue stream, economic strength, security to bondholders, operations, how assets are being improved, etc. Since there are a variety of factors, no one factor is likely to be solely responsible for a change in rating. Fitch Ratings would like to analyze how the data from modified approach statements impacts their analysis. They have not yet done this, but sufficient data should now be available to develop a trend line. Additionally, they hope to use the data to analyze how well infrastructure is being kept up. While doing such analysis, they will need to recognize imbalances like debt appearing on states' balance sheets while the related assets appear on that of a local government. Another interesting analysis could be done using the FHWA condition assessment by comparing it with what is reported in the CAFRs.

Given that the data has not yet been analyzed, Fitch Ratings could not say if they prefer the modified approach over the depreciation approach. Over time, they may see that the modified approach provides additional useful information, but they could not make that determination yet. Hillsborough County used the opportunity of having Fitch Ratings on the call to ask if converting back from the modified approach to the depreciation approach could have a negative effect on ratings. Amy Laskey of Fitch Ratings responded that it would be a discussion item and is something that they would look at and want more information about. However, she generally believed that this alone would not drive ratings.

Usefulness of Information

It seems clears that the modified approach better aligns asset management with financial reporting, one of the original goals of adopting the modified approach. There is an improved relationship between agencies' financial offices and asset managers. This relationship is much weaker for those who use depreciation. While this was not the principal objective of the modified approach, it may be one of its more important consequences.

Agencies reported the following additional benefits of using the modified approach:

- Improved asset management (WSDOT)
  - Accelerated the creation of inventories and condition assessments for assets
  - Found more cost effective ways to preserve assets
- Interactions with the state auditor are more meaningful (ODOT)
- Get "credit" for preservation (though they lose "credit" for preservation through replacement.)
- Improves communication with legislature (WSDOT)
  - Lawmakers can better understand trade-offs in funding

While these ancillary benefits have been reported, there have been no real measurable benefits. GASB itself has not done an assessment to measure Statement 34's usefulness. However, it may conduct such an assessment in the coming years to see if the Statement 34 infrastructure requirements require updating.

CHAPTER 5

Recommended Practices Guide

Process for Setting Condition Targets

Who Should Set Condition Targets

For modified approach agencies the calculation of meaningful condition targets was a key step in the process of implementing GASB 34 and these agencies have used a variety of approaches to set condition targets. In Ohio, condition targets are established internally by the Department's executive management (under recommendations from the Department's Funds Management Committee). On the other hand, a majority of agencies (City of Saco, Hillsborough County, Texas DOT, and Washington DOT) set condition targets through a planning process, whereby the Department proposes a set of targets, which are then ratified by an entity outside the agency—an independent Transportation Commission and/or County Board and/or a City Administrator. At the far end of the spectrum lies Florida DOT, where the specific condition targets are first established by the Transportation Commission (in 1989) and subsequently adopted by the State statute (in 2000).

Recommended Practice:

All participants believe that condition targets are best set through a comprehensive planning process. Accordingly, a Condition Performance Measures Task Team comprised of relevant agency employees should be formed to establish overall condition targets for the respective asset classes (such as pavement, bridge, etc.). Once the potential targets are established, the Task Team would propose them to the Agency's executive management, who in turn would formally present it to the State Transportation Commission (or County Board) for ratification. It is important for this process to be sufficiently streamlined, so that the targets once established are revisited and revised (as appropriate) on an annual or bi-annual basis.

What Targets to Use for Each Asset Class

The great majority of the attention to condition targets, both in managing the agency and in the RSI is focused on two asset classes: pavements and bridges. This is logical since these classes represent the great majority of asset value for the typical transportation agency. In addition, the nature of these two asset classes lends itself to the calculation of numerical indexes that can be calculated and reported relatively easily.

Pavements

Pavement targets are typically expressed as a percentage of miles achieving a minimum value in composite rating index (for example: at least 90% of pavements have a PMIS score greater than or equal to 70). The index is typically a composite score of factors that measure surface distress (rutting, cracking, potholes) and ride quality (smoothness). Generally, the index is a scale that runs

from 0–10 or 0–100. Often, the numeric rating is given a subjective description (for example, a PMIS score of 70 or greater is termed "Good").

While the agencies typically measure the same features, the specific formula for calculation varies significantly reflecting local conditions and local priorities. Thus, there is little comparability among the results and a score of, say, 6 for one agency's pavement section might have a considerably different meaning than a 6 for another agency.

Bridges

Similarly, bridge targets are typically expressed as a percent of bridges or a percent of square feet of bridge deck achieving a minimum value (for example, at least 95% of bridges have a NBI deck, superstructure and/or substructure condition rating of 5 or higher). Due to the Federal Highway Administration's influence, the use of NBI condition ratings is widespread and this provides a greater degree of comparability among the ratings. Agencies still can, and do, adopt different goals by varying either the targeted percentage or the targeted condition rating but a score of, say, 5 tends to have the same meaning across the country. Some agencies also have ancillary targets such as no more than X% of bridges have posted weight restrictions.

Maintenance

In addition to the quantitative goals for pavements and bridges, several agencies also have a more generalized maintenance category that reflects the overall condition of the roadway and its appurtenances. These tend to be a more subjective ranking on a scale of perhaps 1 to 5 derived from windshield surveys that assess a number of factors for a particular roadway segment.

Other Asset Classes

Although pavements and bridges receive most of the attention, a number of agencies also have programs either in operation or being developed to establish condition targets for other high value assets such as drainage structures and traffic control devices. To date, however, these targets are being used for internal management purposes and are not included in RSI reporting.

Recommended Practice:

All participants believe that a continuation of the focus on pavements and bridges is appropriate given the relative value of these two asset classes. In the case of pavements, movement toward a more uniform method of calculating the index would improve comparability and make the information reported in the RSI of greater value to entities that review the reports. That more uniform method should have measures that quantify pavement smoothness, pavement structural condition (rutting, cracking and patching) and skid resistance.

As the process for setting condition targets for pavements and bridges matures and becomes well established at an agency, attention could then turn to setting targets for other asset classes. Taking into account asset value and safety considerations, traffic control devices and drainage structures would be strong candidates for this attention in the view of most of the participants.

The Use of Two Sets of Targets

Ohio DOT and Texas DOT have two sets of targets; one for reporting in the notes to RSI and the other for internal management. The rationale for this is twofold:

- The targets that are reported in the notes to RSI are viewed as "documented" minimum acceptable targets, while these agencies strive internally for excellence in their performance, not merely minimum acceptable. This view of the targets as minimums is derived from GASB's

Q&A 7.20.1 discussion of Statement 34 that states: "Statement 34 does not establish a minimum condition level. However, this level should be established in a formal, documented manner through appropriate administrative or executive policy or by legislative action. This level and any subsequent changes to the established level should be disclosed annually in the notes to RSI."

- Statement 34 provides that if condition targets are not achieved, the agency is required to shift to the depreciation approach. This shift would be disruptive to agency accounting practices so a buffer zone was established between management's internal targets and the RSI targets to ensure that it would not occur except under extraordinary circumstances.

While this rationale for two sets of targets is persuasive, there is another perspective. Regarding the point that targets are minimally acceptable, the actual language in Statement 34 is "the condition level established and disclosed by the government." There is no mention of this as a minimally acceptable target. This is discussed only in the Comprehensive Implementation Guide Q&A issued by GASB staff.

Regarding the potential for a required shift to the depreciation approach, as noted in *NCHRP Report 522: A Review of DOT Compliance with GASB 34 Requirements,* this requirement appears to be counter-productive. In effect, the remedy for not meeting the target is to stop disclosing that information and instead report what most DOT officials consider to be meaningless depreciation amounts, which is contrary to the intent of the Statement. In the participants' view, it would be preferable to disclose the failure to meet the target and let the readers of the financial statements be informed of that and draw their conclusions from it. Also, as a practical matter, GASB requirements are lenient on this matter. There have been numerous instances where an agency has not met a target in a particular year and this has not triggered a requirement to shift to the depreciation approach. As currently interpreted, the shift would be required only if there was a sustained and significant failure to meet targets.

Recommended Practice:

With all of this in mind, most participants recommend the use of only one set of condition targets. That approach offers simplicity to and consistency with internal management and provides transparency to the readers of financial statements and other members of the general public.

The Link between Budgets and Condition Targets

One approach to Statement 34 condition targets is to presume that condition targets drive budgets: a condition level is established, the funding level necessary to achieve that target is estimated, and subsequently the amount actually spent is compared against that estimate. In actual practice, the process in most agencies is more complex and iterative than that. There is a "back and forth" process in which condition targets help justify budget requests and available funds constrain condition targets. The key to making this a meaningful iteration is to have the analytic tools in place that permit an agency to translate a desired condition level into a required funding amount and vice versa. In some of the workshop agencies budget levels tend to drive condition targets (Hillsborough County), while in others targets tend to drive budgets (Ohio, City of Saco, and Florida).

Recommended Practice:

For the modified approach to be successfully put into practice most participants believe it is imperative that the achievement of condition targets be an important agency priority. At the same time, budget realities have to be acknowledged. The key to best practice here is to have the necessary analytic tools in place to inform the process. This subject is discussed further in the Estimated Cost to Achieve Targets (page 107).

Incorporating Measures of Customer Satisfaction with System Performance

Agencies such as City of Saco, Washington, and Florida have begun to incorporate measures of customer satisfaction with system performance; while others such as Hillsborough County have plans to incorporate such measures in the near future. Phone surveys, face-to-face questionnaires at rest areas, and interactive websites are among the techniques utilized to obtain customer satisfaction information.

Recommended Practice:

As public agencies have become more business orientated, most have felt the need to be more in tune with and responsive to their customers, the traveling public. These customers have become much more demanding in the level of service they expect from the agencies and in having their views meaningfully taken into account in decisions ranging from program priorities to project design to maintenance standards. Regarding maintenance standards, the traveling public is interested in ride quality, both for comfort and for the surprisingly significant effect smooth pavements have on fuel consumption. Accordingly, customer/client satisfaction is an important element in setting condition targets and it is recommended that measures of customer satisfaction, as measured by surveys, be taken into account in the process.

Methods of Condition Assessments

Condition Assessment Procedures

As described in the preceding section, agencies primarily focus on two asset classes—pavements and bridges. As such, condition assessment procedures are most developed for these two asset classes.

Pavements

Ohio DOT and Oregon DOT (a depreciation state) use a manual approach to assess pavements. The manual approach consists of a two-person crew trained in distress identification procedures conducting a "side window" survey from a slow-moving vehicle, which generally operates on the adjacent shoulder. Some agencies such as the City of Saco assess pavements using the latest mapping technologies such as Geographic Information Systems (GIS), Global Positioning Satellites (GPS), and the Maine DOT's Road Surface Management System (RSMS). Florida DOT, Texas DOT, Washington DOT, and Hillsborough County use automated condition assessment vehicles for pavement condition assessments. For example, in Washington the automated vehicle, called the "Path Runner" is equipped with six high speed/high-resolution cameras (one facing forward for the roadway perspective, one facing right for the shoulder view, and four facing downward for the pavement view). The "Path Runner" is also equipped with three laser profile sensors and two accelerometers for measurement of longitudinal roadway profile in order to calculate pavement roughness (IRI), rut depth and wear, and joint and cracking faulting. The "Path Runner" collects pavement images every 5 m and stores profiler data at every 7-cm interval. The profile data is automatically analyzed for rutting/wear, joint and crack faulting, and IRI, through computer processing routines, while the pavement condition video images are analyzed using four digital playback workstations.

Recommended Practice:

All participants concur that an automated procedure for condition assessment provides an efficient, consistent and replicable approach, and as such, is the recommended procedure for pave-

ment condition assessments. In fact, Ohio DOT, which currently has a manual approach, is in the process of automating their pavement condition assessment procedures.

Bridges

Agencies inspect bridges in accordance with the Code of Federal Regulations, 23 Highways—Part 650, Subpart C—NBI. Based on the NBI standards, bridge decks, superstructures and substructures are rated on the following scale:

- N = Not Applicable.
- 9 = Excellent Condition.
- 8 = Very Good Condition (No problems noted).
- 7 = Good Condition (Some minor problems).
- 6 = Satisfactory Condition (Structural elements show some minor deterioration).
- 5 = Fair Condition (All primary structural elements are sound but may have minor section loss, cracking, spalling or scour).
- 4 = Poor Condition (Advanced section loss, deterioration, spalling or scour).
- 3 = Serious Condition (Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present).
- 2 = Critical Condition (Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken).
- 1 = "Imminent" Failure Condition (Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service).
- 0 = Failed Condition (Out of service—beyond corrective action).

Agencies train inspectors via basic bridge inspection and in-depth training courses, which are approved by the FHWA. Florida DOT, Oregon DOT, and Texas DOT perform condition surveys every 2 years (biennially); while Ohio DOT and Washington DOT assess bridges every year (i.e., annually). With the exception of Texas DOT, which inspects 95% of all bridges; all other interviewed State DOT's assess all of the bridges (i.e., 100%) within their respective states.

Recommended Practice:

The consensus among those interviewed was that using the NBI standards as a guide, a 100% assessment of bridges every 2 years should be the recommended procedure for bridge condition assessment. Also it is recommended to implement a policy, which mandates the structural condition of 95% of a state's bridges be rated fair or better, meaning that all primary structural elements are in working order. While bridge inspections are primarily a visual based process, it is recommended that technical equipment such as timber boring equipment, hammer, drag chain, ultrasound, penetrating dye, laser (to measure vertical clearance) and scuba gear for underwater inspections be used as accompaniment for visual inspections.

Who Should be Responsible for Condition Assessments?

For the two local governments (Hillsborough County and City of Saco), condition assessments were conducted by the Public Works Department. Pavement condition assessments for state DOTs were conducted by the pavement divisions/sections and districts within the individual DOTs. Bridge condition assessments, for the most part, were a shared responsibility between individual districts (on the ground actual reporting) and bridge divisions that set policy, guidance, etc.

Recommended Practice:

For local governments, the consensus among participants was for the Public Works Department to conduct condition assessments. At the state level, it is recommended that pavement condition assessments be carried out by the respective DOTs "pavement divisions/sections/districts" and bridge condition assessments be conducted as a collaborative effort between individual districts and state DOT "bridge divisions/sections." Though bridge inspections are a collaborative effort, the state DOT 'bridge division/section/district' is ultimately responsible for condition assessments; and as such, it is recommended that DOTs appoint bridge inspectors (and if necessary assistant bridge inspectors) to provide support for the district level bridge inspectors and to provide quality control/assurance function. Inclusion of district personnel provides not only for efficiency because of their knowledge of the subject but also the combination headquarters/district team provides for internal control of the assessment process as well as a source of personnel to conduct the assessments.

Outsourcing Components of Condition Assessment Processes

Most agencies have outsourced part of or all components of their condition assessments (especially for bridge assessments). For example, in Ohio, Oregon, and Texas in-depth inspections of large and complex bridges (such as ones that involve climbing on major structures) were contracted out to private consultants. In fact in Texas, all components of bridge condition assessments were outsourced. On the other hand, in Washington outsourcing was not under consideration because of civil service rules.

Recommended Practice:

As evidenced by Texas (where bridge inspections were 100% outsourced) and Washington (where regulations prohibit any outsourcing), outsourcing is an agency specific phenomenon that is based on need as well as regulatory constraints. If agencies were to outsource part or all components of its condition assessments, then it is recommended to use a standardized outsourcing process that is replicable in both inter and intra years of assessment. Also, a "monitoring committee" comprised of internal agency staff should be formed to ensure methodological consistency (between years of assessment) and quality control/assurance for the work done by private consultants.

The Use of Automated Data Collection Systems

For pavements, the RSMS software (used by City of Saco) and the Hansen Infrastructure Management System (used by Hillsborough County) were the two most often cited "off-the-shelf" automated data collection systems. For Bridges, some agencies such as Florida DOT used the PONTIS system while others developed their own systems. For example, Ohio DOT internally developed a laptop based program called the BMRI; and Washington DOT developed a database called the Washington State Bridge Information System (WSBIS).

Recommended Practice:

All participants agreed that automated data collection systems are an essential tool for conducting efficient condition assessments. As such, it is recommended to use either an "off-the-shelf" software package or an internally developed system to assess the condition of infrastructure assets. "Off-the-shelf" systems include RSMS and Hansen for pavements and PONTIS for bridges. Emerging best practices include the direct feed of information from field computers to the mainframe and field computer checklists that won't permit the assessor to leave the site until all questions are reasonably answered.

Link Between Condition Targets and Expenditure Requirements, Including Budgetary Requirements

What is the Driving Factor in the Linkage Between Condition Targets and Expenditure Requirements?

The responsibility of calculating estimated and actual expenditures for achieving condition targets vary from agency to agency. For agencies such as Hillsborough County whose budgets drive condition targets, their respective finance sections are responsible for estimated and actual expenditure calculations. On the other hand, Florida DOT, Ohio DOT, and City of Saco whose targets tend to drive budgets, the responsibility lies with either the public works department or a special office within the finance department. For example in Florida, the responsibility for calculating estimated and actual expenditure for achieving condition targets lies with the Program and Resource Allocation Office. It is a function of the financial side of the DOT which effectively coordinates with the pavement/bride departments.

Recommended Practice:

One approach to condition targets is to have the targets drive budgets: a condition level is established, the funding level necessary to achieve that target is estimated, and subsequently the amount actually spent is compared against that estimate. However, in practice the process is more complex and invariably becomes a "back and forth" process where condition targets help define budgets and available funds constrain condition targets. As such, the Florida DOT/Ohio DOT/Saco approach towards calculating estimated expenditures is recommended as a prototype for use in other agencies. In Florida, the Program and Resource Allocation Office, a function of the financial side of the DOT, prepares a Program and Resource Plan based on projects with quantities. The plan provides program levels that form the basis for the calculation of cost estimates that form the Department's Finance Plan (which is broken down to program areas such as resurfacing, bridge repair, and routine maintenance; and complied at the beginning of the year), tentative 5-year work program, and legislative budget request. The amounts provided in the plan are used for the estimated expenditures. After the completion of the fiscal year, the Program and Resource Allocation Office adds the actual expenditures.

Should Expenditure Targets be Based on Models/Predictions, History, Estimated Costs of Projects, Finance and/or Other Budgetary Considerations?

In agencies such as Hillsborough County where budgets tend to drive targets, the estimated expenditures are primarily a function of budgetary considerations. Other agencies, where it is a 'back and forth' process (between planners, engineers, and financial departments), the estimated expenditures are based on a combination of factors, which includes forecasts based on historical data, estimated costs, and budgetary considerations (e.g., Florida DOT, Ohio DOT, Texas DOT, Washington DOT, and City of Saco).

Recommended Approach:

The workshop participants generally recommend that expenditure targets be based on models/predictions, history, and estimated costs of projects rather than solely on budgetary constraints. For example, 10 years ago Texas DOT adapted a formula based budget program based on inventory, condition, and historical costs. This formula yields a needs-based budget, which Texas DOT presents to the legislature for budgetary approval. Generally, Texas DOT has been successful in getting approval for what it requests.

Should Actual Expenditure Values be Allocated Among Fiscal Years?

For GASB 34 reporting purposes, all of the agencies interviewed allocate actual expenditures to the year in which they actually occur regardless of the fund year of encumbrance in making this comparison.

Recommended Approach:

As per the consensus among all those interviewed, it is recommended that when comparing estimated and actual expenditure per Statement 34, only the actual expenditure incurred in a particular year be reported (i.e., no allocation among fiscal years).

Should Approaches Differ When Calculating Force Accounts and Other Internal Expenditure (Such as Utilities) Versus Contracted Expenditures?

In some agencies there is a clear distinction between State and contracted (private) worker costs (e.g., Washington). Though these costs are accounted for separately, the same approach is used when calculating force accounts and other internal expenditures versus contracted expenditures.

Recommended Approach:

Based on a consensus opinion of those interviewed, it is recommended that there should be no difference in approach when calculating force accounts (and other internal expenditures) and contracted expenditures.

Should Agencies Account for a Lag Between the Time Expenditures Occur and Time of Subsequent Inspections?

None of the agencies interviewed account for the lag between the time expenditures are incurred (thereby improving conditions) and the time of subsequent inspections.

Recommended Approach:

Based on workshop respondents, it is recommended that agencies need not account for the lag between the time expenditures occur and time of subsequent inspections. This is so because pavement and bridge inspections are conducted frequently with large sample sizes, thus minimizing any discrepancy between reported and actual conditions.

Allocation of Costs Among Capital, Preservation, and Maintenance Categories

Process for Allocating Costs Among Capital, Preservation, and Maintenance

All agencies interviewed allocate costs among capital, preservation, and maintenance; however, the allocation methodology differs. For example, Washington DOT uses codes in their CPMS to distinguish preservation costs from capital costs; and in the City of Saco the allocation is made by the Finance Department based on coding done throughout the year by the Public Works Department.

Recommended Approach:

Though the establishment of a coding system requires a major effort (both in the design and its implementation), the consensus among workshop participants was that such a system is

essential for distinguishing between capital, preservation, and maintenance costs. A coding system, at a minimum, would require engineers to categorize costs between capital and preservation at the time when costs are incurred. Accordingly, the development of such a tool (which would enable the Finance Department to allocate costs during or at the end of each fiscal year) is recommended.

Should Replacements be Accounted as Preservation Costs?

Agencies interviewed, with the exception of the City of Saco, opposed GASB's approach to defining an asset replacement as preservation. The concerns raised by workshop participants include:

(1) Replacement of infrastructure assets with entirely new infrastructure assets is often funded by debt. To present the cost of such replacement as preservation expense could be misleading.
(2) Capitalizing replacement costs need not result in double-counting of the asset value. As a practical matter, in almost all cases the replacement cost will dwarf the original construction cost incurred many decades previously.
(3) Capitalizing replacement costs is consistent with asset management principles.
(4) Replacing an infrastructure asset with an entirely new infrastructure asset "substantively" qualifies the replaced asset as "impaired," as discussed in GASB Statement 42.

Please refer to the "overview" section for a more detailed discussion of these concerns. GASB's rationale for defining asset replacement as preservation is that if an entire asset (e.g., a bridge) is removed and replaced with a new asset (e.g., bridge), that is inconsistent with the modified approach, which implies that assets have indefinite and very long life if preserved. If this is not the case, then the asset needs to be depreciated (a solution used by Texas DOT, which depreciates bridges while using the preservation approach for highways). Though the agency operational use of the term "preservation" may differ from GASB's, most agencies have found ways in their coding systems to distinguish preservation costs from capital costs. For example in Washington, bridge upgrades are considered as preservation costs while seismic retrofit costs are capitalized.

Recommended Practice:

While there were many concerns raised by participants with regard to accounting for asset replacements as preservation costs, the GASB standard is "clear-cut"; and as described by the GASB representative, "there is no wiggle room in the standard." As such, agencies are recommended to adhere to the GASB definition (i.e., replacement of an asset should be accounted as a preservation cost). However, most of the agencies interviewed strongly encouraged GASB to change its interpretation or modify the standard to reflect what they deemed to be the realism of major asset replacement.

Which Group Should be Responsible for Allocating Costs Among Capital, Preservation, and Maintenance?

In all of the agencies interviewed, the Finance/Accounting Departments, with input from the departments that manage the assets, were responsible for allocating costs among the categories.

Recommended Practice:

The consensus among participants was for the Finance/Accounting departments to allocate costs with input from asset management departments. Such a collaborative effort helps minimize inaccuracies in reporting, especially since the codes (which the finance department sorts through) are developed by engineers.

The Use of Automated Versus Manual Methods to Allocate Costs

Most agencies use semi-automated systems to allocate costs. For example, Ohio DOT uses a data warehousing tool (BI Query) to extract data from CIP, Ellis, and TMS, which is then transferred to an excel sheet to complete the allocations; in Washington, the expenditures are listed in the mainframe General Ledger, extracted into an Excel spreadsheet, and then costs are allocated manually between the respective costs; and Texas DOT uses an MS Access based tool to allocate costs.

Recommended Practice:

Smaller agencies, since they have fewer projects, typically prefer the manual approach as opposed to an automated one. However, for larger agencies participants recommended that an automated process be put into place. By automating the process, larger agencies with higher volume of projects will be able to better track costs as well as efficiently allocate costs among the respective categories. At present, Ohio DOT, Florida DOT, and Washington DOT have semi-automated processes in place.

Allocating Capital and Preservation Costs within the Same Project

With the exception of Texas DOT and Hillsborough County, the participating agencies do sub-allocate costs within individual projects. In Florida, all projects are assigned a work mix code from which the costs for the two relevant work mix codes are manually prorated (these two work mix codes are "add lanes and reconstruct" and "add lanes and rehabilitate") based on the number of lanes being added vs. maintained. All other codes are considered 100% capital or 100% preservation.

Recommended Approach:

A sub-allocation of capital and preservation costs is recommended. As with the case in Florida and others, having an automated (or semi-automated) coding system in place is necessary to efficiently sub-allocate costs.

Accounting for Additions, Retirements, and Replacements of Infrastructure Assets

Financial Accounting for Infrastructure Additions

At the end of each fiscal year, State DOTs account for infrastructure additions based on project cost information (from their coding systems). For example, in Washington expenditures for additions are tracked by the use of subprograms and improvement type codes. These codes allow Washington DOT to capture expenditures for projects that increase capacity or improve efficiency. In Texas, the DOT compares budgets for each project with actual expenditures; and when 85% of the project is complete it is reported as an addition. On the other hand, the two local governments (City of Saco and Hillsborough County) have a different approach for reporting infrastructure additions. City of Saco does not report additions because typically subdivision roads are constructed by developers and then are dedicated to the City at no cost. In Hillsborough County additions are reported quarterly, based on physical data from the Engineering Group.

Recommended Approach:

Accounting for infrastructure additions in local governments is highly contextual; and as such it will vary from agency to agency. The important consideration is that agencies use a standardized approach in accounting for additions. An example would be that accounting for additions is done at the end of each fiscal year, where additions are tracked by using a financial management system

(i.e., a coding system) and when a particular capital project reaches 85% completion (i.e., when comparing budgets of each project with actual expenditures) it is included as an addition.

Financial Accounting for Infrastructure Retirements and Replacements

Based on the year built, most agencies manually remove infrastructure at the costs the asset was put on the books.

Recommended Approach:

Participants believe that accounting for retirements and replacements is an area that needs to be improved on. For example in Ohio, in the FY 2006 audit (based on FY 2005 data) the state auditors noted that Ohio DOT did not record pavement and bridge deletions. Accordingly, agencies are recommended to develop suitable methodologies for accurately accounting for infrastructure retirements and replacements.

The Use of Automated Versus Manual Methods to Account for Additions, Retirements, and Replacement of Infrastructure

Most agencies have not fully mechanized linkages, between asset management and financial reporting of additions and retirements and replacements, so linkages are handled manually.

Recommended Approach:

For smaller agencies, since the accounting process uses a relatively small database, using a manual approach is efficient, and thus is recommended. However, for larger agencies it is recommended that an automated process be put into place. By automating the process, larger agencies with higher volume of projects will be able to track as well as efficiently account for additions, retirements, and replacements of infrastructure. At present, Ohio DOT, Florida DOT, Texas DOT, and Washington DOT have semi-automated processes in place.

Potential Effect on Bond Rating

Information that is Provided to the Bond Agency

The level of information requested by bond agencies varies from government to government. For example, in smaller governments such as Hillsborough County, in addition to the CAFR every year the raters visit the County for a 2-day workshop where presentations are made and a site tour is conducted. At the workshop, the County provides additional information, which consists primarily of reports on audited financial results, the County's budget, economic development, and outstanding debt. On the other hand, in Texas the information requested from the DOT is not as detailed as what is reported in the CAFR.

Recommended Approach:

Though the degree of information requested by bond agencies is highly contextual, the consensus among all participants was to provide an abundance of information to the rating agencies. In addition to the CAFR, other information that could be submitted to bond raters includes: work program plans; economic and financial plans; potential changes in organizational structure, such as the appointment/resignation of key management staff; revenue forecasts; budgets; outstanding debt; debt issuance plans; information on debt related initiatives and referendums; federal reimbursement projections; coverage ratios; performance measurement reports; and information about agencies asset management system.

Operational and Financial Impacts of GASB 34 Reporting

Sharing of Information on Condition Assessments Both Internally and Externally

Most agencies share condition assessment information internally. However, many agencies are less advanced in sharing condition assessment information externally. One agency with a particularly strong external program is Washington DOT (in which the *Gray Notebook,* which contains the same information as the CAFR is widely distributed both in print and via the website).

Recommended Approach:

All agencies that were interviewed have an adequate process for sharing condition assessment information internally. For example in Ohio, condition information is reported annually as part of the District Multi-Year Work Plans; and biennially, the 2-year business plan reports a summary of bridge, pavement and maintenance conditions. Also, condition assessments are available internally from the Pavement and Bridge management systems; and a corporate data warehouse is accessible to agency employees. Though there is an efficient process to share information internally, for most agencies a similar process is not in place for sharing of information externally. As such, implementing an efficient process of sharing information externally, as done by Washington DOT, is recommended.

Glossary

Capital Asset: A long-term, productive asset, such as a road or a bridge.

Comprehensive Annual Financial Report (CAFR): A CAFR is a government book keeping practice; governmental institutions (e.g., federal, state, and local) began producing a CAFR in the late 1940s to early 1950s to catalog an accurate picture of institutional funds, or financial holdings, assets and total investment incomes for those government and nongovernmental entities using the report, which is above and beyond the budget process.

Depreciation: In accounting, depreciation is a term used to describe any method of attributing the historical or purchase cost of an asset across its useful life, roughly corresponding to normal wear and tear.

Geographic Information System (GIS): GIS is a computer system capable of integrating, storing, editing, analyzing, sharing, and displaying geographically referenced information.

Governmental Accounting Standards Board (GASB): An organization established in 1984, GASB is currently the source of generally accepted accounting principles (GAAP) used by State and Local governments in the US. GASB operates with oversight from the Financial Accounting Foundation, which selects the members of the GASB and the Financial Accounting Standards Board, and funds both organizations.

Infrastructure Assets (GASB Statement 34 Context): Infrastructure assets are long-lived capital assets that normally can be preserved for a significantly greater number of years than most capital assets and that normally are stationary in nature. Examples of infrastructure assets include roads, bridges, tunnels, drainage systems, water and sewer systems, dams, and lighting systems. Buildings, except those that are an ancillary part of a network of infrastructure assets, are not considered infrastructure assets.

Modified Approach (GASB Statement 34 Context): An alternative to depreciating infrastructure assets. The modified approach recognizes that such assets are routinely preserved (or renewed) so as to indefinitely extend useful life. Under this approach, preservation (or renewal) expenditures are expensed rather than being capitalized and the original cost and improvements and additions to the asset are not depreciated.

National Bridge Inventory (NBI): NBI is a database, compiled by the FHWA, with information on all bridges and tunnels in the US that have roads passing above or below. The bridge inventory is developed for the purpose of having a unified database for bridges including identification information, bridge types and specifications, operational conditions, bridge data including geometric data, and functional description, inspection data, etc.

Pavement Management Information System (PMIS): PMIS tracks the condition of the state highway system in order to optimally allocate annual rehabilitation funds.

PONTIS: PONTIS is a software program developed to assist in managing bridges, and other structures. PONTIS stores bridge inspection and inventory data based on the FHWA NBI coding guidelines. In addition, the system stores condition data for each of a bridge's structural elements. It also includes a predictive model.

Required Supplementary Information (RSI): Generally, the CAFR is accompanied by the RSI, which is a comparison of the actual expenses compared to the original budget created at the beginning of the fiscal year for the Government's General Fund and all major Special Revenue Funds. If a government uses the modified approach to report on its infrastructure, GASB requires it to disclose some information in RSI, including the assessed physical condition of infrastructure assets; descriptions of the criteria the government used to measure and report the asset condition; the condition in which the government intends to maintain and preserve the assets; and a comparison of the estimated annual amount required to maintain and preserve the assets, with actual expenses for at least the last 5 years.

Road Surface Management System (RSMS): RSMS is a methodology intended to provide an overview and rough estimate of a roadway system's condition and the approximate costs for future improvements. Developed at the University of New Hampshire, RSMS provides a systematic way for local officials to answer basic questions about their road system to guide future improvement and investment.

Statement 34: Statement 34 "Basic Financial Statements—and Management's Discussion and Analysis—for State and Local Governments" calls for state, local, and municipal governments to calculate the original cost of infrastructure constructed or improved during the 20-year period prior to the Statement's issuance date in their annual financial reports. Governments may choose to report how much of the estimated original cost has been "used up" (i.e., depreciated) in the intervening years, or they can, if they meet certain requirements, report as expense the cost to maintain and renew that infrastructure on an annual basis. All new infrastructure must also either be depreciated or have its maintenance requirements accounted for.

Useful Life: An estimate of the life of an asset, assuming a regular maintenance and repair schedule.

APPENDIX A

Final Interim Report (July 1, 2005; Revised October 25, 2005)

Appendix A is available on the TRB website at http://trb.org/news/blurb_details.asp?id=8716.

Abbreviations and acronyms used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation