

**The Interplay Between Technology and Politics: A Case Study Analysis
of Financial Reporting Practices in Winchester, Massachusetts**

by

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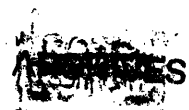
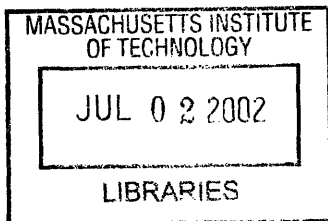
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ABSTRACT

The purpose of this study is to explore the interplay between technology and politics by analyzing how recent revisions in the governmental financial reporting model – promulgated in Governmental Accounting Standards Board, Statement 34 - are translated into practice at the local governmental level. The recent reduction in cost and subsequent proliferation of desktop database and mapping technologies has the potential to provide users of governmental financial statements with new ways of watching over entities entrusted with public resources. Similarly, these same “asset management system” technologies offer local governments an invaluable internal decision-support tool for optimizing future planning decisions. However, as evidenced in the Town of Winchester, Massachusetts, the realization of this enhanced monitoring and planning potential extends beyond the realm of information technology concerns. Indeed, (1) without a long-term governmental accounting focus, (2) without the internal governmental capacity to effectively deploy and maintain information technology-driven asset management tools, and (3) without an understanding of the political logic that drives information technology implementation and public disclosure decisions in the local government context, the types and detail of information included in governmental financial statements may continue to lag behind the demands of financial statement users.

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Introduction

In democratic societies financial reporting plays a pivotal role in providing users of financial statements with the means to monitor and account for the operations of governments. Throughout most of the past century, however, the governmental accounting community in the United States has struggled with the problem of designing a financial reporting model that satisfies the needs of a wide range of financial statement users. As James March has observed, "A system of accounts and reports that is useful for one decision maker is not guaranteed to be useful for another."¹ Further, with the drastic fall in computing costs, the rise of the Internet, and the onslaught on new information technologies, the task of determining the amount and kinds of financial information that governments should report has only grown more complex. In particular, the ease in which of "out-of-the-box" database and Geographical Information Systems (GIS) software applications can be customized to meet the information demands of financial statement users has generated a "sifting" problem in the governmental accounting community.² With more information to choose from, the choice of what governments should include in their financial statement involves new considerations regarding the tradeoffs associated with collecting and disclosing more detailed financial information. Few would disagree that the proliferation of cost-effective database and mapping technologies has

¹ James G. March, "Ambiguity and Accounting: The Elusive Link Between Information and Decision Making." *Accounting Organizations and Society*, 1987, Vol. 12, 162.

² John B. Miller, personal communication.

the potential to provide users of financial statements with new ways of watching over governmental entities entrusted with public resources. Likewise, these same technologies, which form the foundation of any asset management system, offer governments a valuable internal decision-support tool for optimizing future planning decisions. However, the realization of this enhanced monitoring and planning potential depends on much more than merely the availability of inexpensive information technologies. Indeed, (1) without a “push” from the governmental accounting standard-setting community, (2) without the local governmental capacity to effectively deploy and maintain new information technology tools, and (3) without an understanding of the political logic that drives information technology implementation and public disclosure decisions at the local level, the scope of information included in governmental financial statements may continue to lack the detail craved by some groups of financial statement users.

Objectives

The first objective of this paper is to recount the events and dialogues leading up to the establishment of the newly revised financial reporting model officially set forth in the publication of Governmental Accounting Standards Board, Statement 34 [1999] (GASB Statement 34). GASB Statement 34 marks a fundamental shift in the historical financial reporting requirements of state and local governments. For the first time, the annual financial report of all state and

local public entities must include a government-wide financial statement, prepared using the economic resources measurement focus. The government-wide, economic resources measurement focus-based financial reporting model is designed to capture the full cost of providing public services. Consequently, under the new financial reporting rules, governments must calculate the historical cost of infrastructure constructed or rebuilt prior to 1980.

Governments can then either calculate the total loss of serviceability by depreciating those infrastructure assets over their estimated useful life, or they can calculate and publicly disclose the cost of maintaining and preserving those assets each year via an information technology-driven asset management approach (hereafter referred to as the “modified” approach). Similarly, all new infrastructure must either be depreciated or accounted for according to the rules of the “modified” approach.

The demand for this revamped financial reporting model can be traced back to discussions that surfaced during the late 1970’s. Therefore, Chapter One begins with an analysis of the historical debates surrounding Generally Accepted Accounting Principles (GAAP) in the United States. These debates help define the two competing ideological accounting camps that, still today, continue to shape the practice of governmental accounting and financial reporting in the United States. These ideological conflicts, in turn, form the basis of discussion in Chapter Two, a section that provides an overview of the political and institutional factors that help set the stage for the eventual creation of a Governmental

Accounting Standards Board in 1984, and its subsequent introduction of the “modified” approach in Statement 34. The focus of Chapter Two is on how those who set accounting standards (the GASB) chose to handle the challenge of devising a new financial reporting model in an age when information can be obtained in a more detailed and cost-effective manner than ever before.

The second objective of this paper is to highlight the planning implications of deploying an infrastructure asset management tool in a local government setting, and to summarize the numerous considerations driving this deployment process. The local government in this case is Winchester, Massachusetts. The selection of the Town of Winchester was due, in part, to the previous relationship of Professor John B. Miller (Director of MIT’s Infrastructure Systems Delivery Research [ISDR] group) in testing an already constructed database for the community, and in part, to the Town’s simple institutional and decision-making structure. Chapter Three commences with an overview of Winchester’s current financial position and capital budgeting practices. The later section of the chapter then proceeds to tell a story about a one-year collaboration between the Town of Winchester and the ISDR group at the Massachusetts Institute of Technology. This “story” retraces the sequence of developments leading to the customization of a previously built infrastructure management prototype tool for use in Winchester. While the narrative places emphasis on the necessity of tailoring infrastructure asset management systems both to align with internal management practices and to provide officials with a “user friendly” means of

accessing, collecting, and analyzing information, the consequences of simplifying various functions of the system are also discussed.

The third and final objective of this study is to outline the intuition behind one local government's process of deciding how to report infrastructure assets under the new infrastructure reporting provisions contained in GASB Statement 34. Chapter Four investigates the logic that enters the decision-making processes of Winchester Town officials as they contemplate the political and technological tradeoffs underlying the choice between (1) depreciating infrastructure assets or (2) reporting what it costs to maintain and preserve them each year. The decision factors identified in Chapter Four stem from an analysis of the results of several interviews undertaken with Town elected and appointed officials. Because Winchester has until 2006 to decide how to comply with Statement 34 infrastructure reporting requirements, the interviewing process, in effect, involved asking key decision makers why they might do what they do when they do it.

Methodology

Excerpts from interviews conducted with three GASB research staff members supplement the textual analysis presented in Chapter Two of this paper. In addition, Chapter Three's "story" of Winchester draws heavily from notes collected during informal meetings with Department of Public Works (DPW) officials. And last, the dialogues that form the body of Chapter Four are

the product of seven interviews with Winchester town officials. Those officials interviewed include: a Town Selectmen, the Town Manager, the Assistant Town Manager, the Town Comptroller, the Director of Public Works, the DPW Roads Manager, and the DPW Water/Sewer Manager.

Chapter One:

The Conflicting Objectives of GAAP

More often than not, accounting theorists subscribe to a favored image as if it were the one best way of getting at accounting truth. Yet if one explores how these images are created and developed, one sees that the image usually offers no more than one particular limited mode of insight.³

Problems of fiduciary responsibility in the public sector have been evident from the earliest recorded examples in human history.⁴ History has shown that the incentives of governmental entities entrusted with public resources may not necessarily be aligned with the preferences of society at large. Therefore, those citizens and investors who entrust their resources to public entities typically require governments and institutions to "account for" and disclose their use of public resources. In the United States, this monitoring function is provided by a specialized group of accounting and auditing practitioners that operate in an environment porous to both public and private sector participants. The charge of this intersect of governmental accounting professionals is to formulate a core of well-defined rules and procedures "to ensure that organizations are compared fairly, and that the process of reporting is replicable...[so as] to avoid the appearance of being capricious and arbitrary."⁵ While few may dispute the

³ Davis et al., "The Images That Have Shaped Accounting Theory." *Accounting, Organizations and Society*, 1982, Vol. 7, 308.

⁴ Herman B. Leonard, "Measuring and Reporting the Financial Condition of Public Organizations." In James L. Chang ed., *Research in Governmental and Nonprofit Accounting*. Greenwich, CT: JAI Press, 1985, Vol. 1, 120.

⁵ Herman B. Leonard, p. 119.

fundamental need for watching over governmental entities, seldom in United States accounting history has there been agreement in regards to what the make of this core set of accounting objectives should be. The problem, as identified in Davis's opening quotation, is that the accounting objectives underlying the financial reporting practices of governmental entities are more social constructs (accounting "images") than universal truths. In other words, the relevance of any given accounting procedure depends upon ones view of the theoretical basis for governmental accounting and financial reporting, which in turn may be influenced by how financial statements have been used in the past and by whom they have been used. And, as if there was a need for more confusion, history has illustrated that the use and users of financial statement continue to evolve over time – therefore, so must the principles underlying a set of accounts charged with fulfilling those user needs. The challenge facing the governmental accounting community is to collect, measure, and disclose information in a relevant manner with the understanding that "relevance" may vary between accounting "images", among user groups, and across time. The difficulties associated with such an endeavor should become evident below, as we track the formalization of and debates surrounding Generally Accepting Accounting Principles in the United States.

The development of an overarching set of Generally Accepted Accounting Principles (commonly referred to as GAAP) for state and local governments represents the combined efforts of numerous individuals and professional

organizations. The Municipal Finance Officers Association (MFOA) – a group broadly represented of public finance and accounting officials – organized the National Committee on Municipal Accounting in 1943 in an effort “to bring together representatives from various groups concerned with municipal accounting and to put into effect sound principles of accounting, budgeting, and reporting.”⁶ The Committee’s effort was hailed as “the first effort on a national scale to establish principles and standards for municipal accounting and actively promote their use.”⁷ After some years, the MFOA sponsored a second committee, the National Committee on Governmental Accounting, which replaced the National Committee on Municipal Accounting as the authoritative voice on governmental accounting standards. The name change signified that the new Committee’s issued accounting principles were applicable, not only to municipalities, but to all types of state and local governments.⁸ In 1951, The National Committee on Governmental Accounting issued Bulletin No. 14, *Municipal Accounting and Auditing*, which shortly thereafter came to be known as the “bible of municipal accounting” for it supplied the basis of many state laws and guidelines relating to governmental accounting, auditing, and financial reporting.⁹ Later in 1968 the same committee issued its last and most important publication, *Government Accounting, Auditing, and Financial Reporting*

⁶ Edward Lynn and Robert Freeman, *Fund Accounting: Theory and Practice*. New Jersey: Prentice-Hall, 1983, 22.

⁷ Carl H. Chatters, “Municipal Accounting Progresses.” *Certified Public Accountant*, 1934, Vol. 14, 101.

⁸ James S. Remis, “Governmental Accounting Standards – A Historical Perspective.” In Drebin et. al., *Objectives of Accounting and Financial Reporting For Governmental Units: A Research Study*. Chicago: NCGA, Vol. II, 8.

(commonly referred to as the “blue book”). The 1968 version of the “blue book” served as the principle guide for governmental accounting and financial reporting for close to ten years. The National Committee on Governmental Accounting eventually expanded and was renamed the National Council on Governmental Accounting (NCGA).

In 1974 the American Institute of Certified Public Accountants (AICPA) formally codified the accounting rules and procedures promulgated in the National Committee’s “blue book” as GAAP for governmental units.¹⁰ Up until that time, the involvement of the AICPA in governmental auditing affairs had been quite limited. However, by extending its private sector auditing code (Rule 203 of the Rules of Conduct of the Code of Professional Ethics) to include auditors of governmental units, the AICPA took an important step in steering the future direction of governmental accounting and financial reporting in the U.S. In their 1974 industry audit guide titled, *Audits of State and Local Governmental Units*, the AICPA mandated that GAAP be used as the primary criteria for auditing the fairness of governmental financial statements. The AICPA audit guidelines served as one means for influencing state and local governments to comply with accounting guidelines promulgated by the NCGA. The catch was that the guidelines issued by the NCGA needed to be generally acceptable to the AICPA. In this symbiotic relationship, the NCGA and the AICPA jointly oversaw

⁹ Lynn and Freeman, p. 23.

¹⁰ The AICPA modified several provisions of the blue book in their audit guide, *Audits of State and Local Governmental Units*. New York: AICPA, 1974.

the financial reporting practices of state and local public entities until the GASB was established in 1984.

The Debates of the late 1970's

The Generally Accepted Accounting Principles originally set forth by the National Committee on Governmental Accounting and later endorsed by the AICPA, came under heated debate in the face of several financial crises during the late 1970's. New York, Chicago, Detroit, and several other large cities almost went bankrupt, however their financial report did not indicate the true state of affairs.¹¹ Largely in reaction to these municipal financial difficulties, numerous accountants and auditors of financial statements – many of whom operated in the private sector – began depicting the state of municipal governmental accounting as confusing and outdated. While advocating for the adoption of commercial-type accounting and financial reporting principles, these critics challenged many of the theoretical underpinnings that had long distinguished governmental accounting from the commercial approach. In particular, the rationale underlying such governmental accounting principles as the reporting format, the measurement focus, and the treatment of infrastructure assets, came under increased scrutiny. The purpose here is not to recount the specific reforms that transpired in some of these areas following the financial collapse of the noted municipalities. Rather, the intention is to delve into each of the

¹¹ Patricia P. Douglas, *Governmental and Nonprofit Accounting: Theory and Practice*. San Diego: Harcourt Brace Jovanovich, 1991, 467.

disagreements, in the hope that the objectives underlying the two dominant theoretical camps of governmental accounting will begin to emerge: (1) the short-term, financial resources measurement focus school, and (2) the long-term, economic resources measurement focus school.

Reporting Format

The reporting format discussions centered on whether financial statements for state and local governments would be more understandable to users, particularly citizen groups, if they were more like the financial statements of commercial enterprises.¹² The conventional approach adopted by governments required the inclusion of a balance sheet, a statement of operations, and a statement of changes in equity for each governmental fund. Critics, while recognizing the importance of fund accounting as a bookkeeping practice, questioned why financial statements should be prepared for each fund rather than for the governmental entity as a whole.

Those familiar with the financial reporting practices of commercial firms are in for a bewildering experience when they attempt to understand publicly distributed financial reports of the American cities. This is due to the fact that the rules presently governing municipal disclosure call for a type of reporting that fails to present a clear picture of overall financial operations and position.¹³

The prevalence of fund-type, disaggregated financial reporting is typically attributed to "the additional legal constraints operating in the public sector that serve to constrain the public official to behave in accordance with legal mandates

¹² Terry K. Patton, PhD Thesis, p. 31.

sanctioned by the legislative process."¹⁴ Defenders of this status quo believed, and continue to express that government entities function in a context wholly unlike their private sector counterparts. In their eyes, it is unfounded to assert that public sector financial statements should mirror those prepared by commercial enterprises. Harold Steinberg explains:

The reason the statements are prepared for each fund is that the governments themselves and those who use the financial report the most (namely, the investment analysts) view each government as a collection of discrete entities and the financial position and results of operation of each need to be known.¹⁵

Steinberg comments further indicate that the governmental system of accounts was originally designed for a specific group of users— mainly, large rating agencies and investment analysts. While a system of accounts designed for one group of users should not inherently conflict with the needs of a second group of users, certain tradeoffs are often unavoidable. For instance, an information system designed to meet the detailed needs of municipal securities rating agencies will not necessarily be of any use to taxpayers who are presumably more interested in aggregated, commercial-type accounting summaries for the government at large. The appropriate format type and level of aggregation is therefore subordinate to the needs of those anticipated to utilize the financial reports. Balancing the preferences of multiple user groups with inconsistent and

¹³ Coopers & Lybrand and the University of Michigan, *Financial Disclosure Practices of the American Cities: A Public Report*. New York: Coopers & Lybrand, 1976, 9.

¹⁴ Jerold L. Zimmerman, "The Municipal Accounting Maze: An Analysis of Political Incentives." *Journal of Accounting Research*. 1977, Vol. 15, 107-144.

¹⁵ Harold I. Steinberg, "A New Look at Governmental Accounting." *Journal of Accountancy*. March 1979, 54.

changing informational needs was, and continues to lie at, the root of the controversy surrounding the governmental financial reporting format.

Measurement Focus

The debates surrounding the measurement focus of governmental accounting also focused upon distinctions between financial reporting in the public and private sectors. Accountants use the term “measurement focus” to refer to the types of resources that are measured and presented in financial statements. Within financial reports, one of two measurement focuses is typically applied – the financial resources measurement focus and the economic resources measurement focus. GAAP as originally promulgated in the NCGA “blue book,” employed the financial resources measurement focus, except for within proprietary fund statements.¹⁶ The financial resources measurement focus reports expenditures - outflows of financial resources for operations, capital outlays, or long-term debt repayment. Therefore, even disbursements to acquire capital assets are recorded as expenditures. Alternatively, the economic resources measurement focus reports expenses – costs expired or the costs of goods or services used during a period. Under this approach, an expenditure to acquire a capital asset is recorded on the balance sheet as an asset. The asset is

¹⁶ Proprietary Funds include enterprise and internal service funds. Examples of enterprise funds include electrical and water utilities. Internal service funds report on departments that provide services to other governmental activities. U.S. Department of Transportation: Office of Asset Management, *Primer: GASB 34*. Washington, D.C.: U.S. DOT, 2000.

then depreciated over its useful life with its cost being allocated to the years for which it is used.¹⁷

At the heart of the measurement focus debate was the issue of defining the function of government. Patton summarizes:

Those who believed the measurement focus should be the flow of financial resources argued that governments were different from commercial enterprises. The main concern of readers of governmental financial statements was whether the government had enough resources to maintain its current level of services. Those who believed the measurement focus should be the flow of economic resources argued that governments were essentially the same as commercial enterprises. They argued that readers, particularly citizens, desired to judge the efficiency of government and that operating statements that reported expenses would provide information about the cost of services that could be used to measure efficiency.¹⁸

In other words, the choice between recording expenses or expenditures is a reflection of how one defines the objectives of governmental accounting. If the function of government is perceived as “to provide services with the resources made available while adhering to legal and similar requirements,” then the financial measurement focus seems most logical.¹⁹ In contrast, if the function of government is envisioned as to preserve the public facilities through which government services are produced in an efficient, business-like manner, then the economic measurement focus appears most rationale. The decision of measurement focus also depends, in part, on whether the system of accounts is

¹⁷ U.S Department of Transportation: Office of Asset Management. *Primer: GASB 34*. Washington, D.C.: U.S. DOT, 2000.

¹⁸ Terry K. Patton, p. 38.

¹⁹ Harold I. Steinberg, p. 48.

intended to measure short or long-term financial performance. Herman Leonard sheds light on why the financial measurement focus was originally employed:

Direct current theft is much easier and more profitable than long-term fraud. The systems designed to prevent fraudulent disbursement of public funds tend, therefore, to have a very short-term focus. The long-term fraud issue was not regarded as a necessary and appropriate province for accountants.²⁰

Thus, like the reporting format, the choice of measurement focus appears to be largely a function of user needs and preferences. In the early nineteenth century, accountants sought to control against the illegal diversion of funds. Providing a mechanism to track future financial obligations does not appear to have been at the top of their agenda, hence the historical dominance of the financial measurement focus in governmental financial reports.

Infrastructure Assets and Depreciation

Perhaps the most contentious issue raised during the debates of the 1970's was whether or not to include all fixed assets, including infrastructure, in governmental financial statements. In actual practice few government entities recognize fixed assets in the financial report.²¹ These preparers of financial statements argue that as long as there is a record of infrastructure and other fixed assets, public entities can maintain control over them – verify that the asset

²⁰ Herman B. Leonard, "Measuring and Reporting the Financial Condition of Public Organizations." In James L. Chang ed., *Research in Governmental and Nonprofit Accounting*. Greenwich, CT: JAI Press, 1985, Vol. 1, 121.

²¹ Robert W. Ingram and Walter A. Robbins, *Financial Reporting Practices of Local Governments*. Stamford, CT: Governmental Accounting Standards Board, 1987, 30.

has not been stolen, destroyed, or misappropriated.²² Meanwhile, proponents of recording infrastructure and other fixed assets assert that users of financial statements should be able to assess the full cost of providing governmental services. The thrust of their argument is that the benefits of reporting fixed assets – mainly, the ability to determine service costs and remaining service potential of those assets – outweigh the associated costs of gathering inventory, acquisition date, and historical cost data for these assets. Of note is that this later view of infrastructure would not only necessitate a calculation of the original construction cost of infrastructure assets, it additionally would require municipalities to report an annual depreciation expense as a measure of the loss of serviceability that slips away each year. Again, the idea is to capture the full cost of providing public services. The justification put forth by these critics of the status quo is that governments “may wish to spread the burden of the cost of long-lived assets on some equitable basis among those who benefit from their use.”²³

Depreciation is one tool for estimating the cost of using fixed assets. It is a method of allocating a portion of the original cost of the fixed asset over each year the asset is expected to be used. Ironically, as early as 1905, Herman Metz, the elected Comptroller of New York City, called for the establishment of a reserve for depreciation, with the cost of repairs charged against the reserve so

²² Patricia P. Douglas, p. 474.

²³ Allan R. Drebin, “Governmental vs. Commercial Accounting: The Issues.” In Drebin et. al., *Objectives of Accounting and Financial Reporting for Governmental Units: A Research Study*, Chicago: National Council on Governmental Accounting, 1981, Vol. II, 11.

that "the property either will be protected from depreciation, or the accounts will clearly show the amount by which the administrative officers fail to maintain the property."²⁴ Metz intended for governments to be able to measure and disclose the cost of using fixed assets over their entire lifespan. Yet, as indicated above, despite these early suggestions governments have not typically been required to record fixed assets, outside of certain exceptions.²⁵ Even if state and local public entities were to keep more detailed records of their infrastructure holdings Steinberg explains why many believe that reporting an annual depreciation expense would still not be relevant for governmental entities:

Clearly, it [depreciation] is not to enable a government to determine the equity that inures to its owners. It is not to enable governments to establish prices for their services since services are provided by governments without regard to cost...Depreciation is not required to support a claim for an income tax deduction for governments do not pay income taxes. It is not information that is in any manner relevant to the management process.²⁶

The ideological disparities here are not unrelated to the discussions outlined above. In the absence of clear-cut accounting truths, accounting practitioners must evaluate the diverse and evolving needs of financial statement users and at the same time attempt to make sense of these demands within their respective philosophical camps. How to treat infrastructure and other fixed assets in governmental reports, depends upon one's theory of governance, one's

²⁴ Bureau of Municipal Research, *Handbook of Municipal Accounting*. New York: E. Appleton, 1914. As quoted in Martin Ives, "The GASB: A Fresh Look at Governmental Accounting and Financial Reporting." *Journal of Accounting, Auditing & Finance*. 1985, Vol. 8, 253-68.

²⁵ Government entities are required to depreciate fixed assets used in enterprise funds.

²⁶ Harold I. Steinberg, p. 53.

understanding of user demands, and in some instances practice itself, for the proof of “relevance” lies with those seeking change.

Although it is important to recognize the subtle variations surrounding each of the accounting component debates, generally speaking, disagreement exists due to the conflicting “images” of two prevalent theoretical camps. On the one hand, there exist those individuals who advocate for the adoption of long-term, private sector accounting principles in the governmental sector. This camp favors aggregated financial statements, the economic resources measurement focus, and consequently the recording and depreciation of infrastructure asset data. Meanwhile, there exists a second camp - comprised primarily of public sector accounting and finance practitioners -who have no qualms in pointing out the unique operating environment in which public entities must function. This later group supports the fund-type reporting format, the short-term financial resources measurement focus, and opposes the recording of infrastructure costs and annual depreciation costs in governmental financial reports. While it should be noted that the position of each camp has been somewhat oversimplified here, the characterization supplied above provides, at least, a rudimentary framework for comprehending the birth of the GASB and its eventual publication of Statement 34.

Chapter Two:

Introduction of the “Modified” Approach

The GASB

Paralleling the debates of the late 1970's, a series of academic studies sought to investigate the state of governmental accounting and financial reporting. In a 1976 survey of 46 U.S. cities, Coopers & Lybrand concluded that financial reporting practices followed by cities in the sample were not being applied uniformly, and in many instances compliance with GAAP did not exist.²⁷ Indeed, Coopers & Lybrand found that as many as 93 percent of the cities failed to comply with selected provisions of GAAP pronouncements. Similar findings concerning the lack of uniformity in local governmental accounting are also evident in subsequent studies.²⁸ And analogous results have been observed at the state level.²⁹ Collectively, these investigations of governmental accounting and financial practices have highlighted the considerable flexibility in accounting and financial reporting practices traditionally enjoyed by state and local government entities. Lowensohn explains:

The federal government can direct financial reporting practices for publicly traded firms through the Securities and Exchange Commission, but there are substantial constitutional questions about the power of the federal

²⁷ Coopers & Lybrand and the University of Michigan, *Financial Disclosure Practices of the American Cities: A Public Report*. New York: Coopers & Lybrand, 1976.

²⁸ Ernst & Whinney, *How Cities Can Improve Their Financial Reporting* (E&W, 1979). Quoted in Ingram and Robbins, *Financial Reporting Practices of Local Governments*. Stamford, CT: Governmental Accounting Standards Board, 1987.

²⁹ Council of State Governments, *Inventory of Current State Government Accounting and Reporting Practices*. Lexington, KY: CSG, 1980.

government to prescribe financial reporting practices for the states and their creations, the various cities, counties, and special districts.³⁰

State elected officials have long maintained that primary jurisdiction over GAAP resides under the state constitution and law. Their argument is captured in the following:

No one seriously challenges the power of the GAO [General Accounting Office] and ultimately the Congress to set accounting and reporting standards of the U.S. Government. Why are state and local governments not entitled to at least as much self-regulation as the Federal Government, or as the private sector itself wants?³¹

As a result, municipalities continue to be exempt from all but the Federal antifraud provisions promulgated under the Securities Act of 1933 and the Securities and Exchange Act of 1934. These provisions make it unlawful to make untrue statements about material facts that are necessary to ensure that statements issued in connection with offerings are "not misleading". The 1975 securities act amendments extended federal oversight to the municipal securities activities of brokers, dealers, and banks, but not to the municipalities themselves. Special provisions in the act specifically prohibit federal prescription of municipal disclosure and reporting requirements.³²

³⁰ Lowensohn et. al., "GASB Rhetoric: A Content Analysis of GASB Statements." *Research in Accounting Regulation*. 1996, Vol. 10, 42.

³¹ Representative James Ritter's testimony at the GASOC hearings, May 5, 1981. Quoted in James L. Chan, "The Birth of the Governmental Accounting Standards Board: How? Why? What Next?" *Research in Governmental and Nonprofit Accounting*. Greenwich, CT: JAI Press, 1985, Vol. 1, 10.

³² Paragraph is par phrasal of Michael H. Ganof, "Governmental Standard Setting in Perspective," *Journal of Accountancy*, New York: March 1979, 56.

In an attempt to standardize the mystifying state of municipal accounting and financial disclosure, Senators Harrison A. Williams (D-NJ), Jacob K. Javits (R-NY), and William Proxmire (D-WI) sponsored the Municipal Securities Full Disclosure Act of 1977. This federal bill sought to remove the exemption of municipal securities from the Securities Exchange Act of 1934 and proposed to assign the Securities Exchange Commission full authority to set both the detail and form of the municipal financial report.³³ In short, the bill intended to remedy the inconsistencies prevalent in state and local government financial reporting practices by restricting the traditional autonomy enjoyed by state and local organizations. Although the Williams bill failed in Congress, it sent a strong signal to the state and local governmental accounting profession, warning them of the imminent need to address inconsistencies in financial reporting. Shortly thereafter, there emerged a consensus among professional accounting groups of the need to cooperate so as to head off future federal intervention.

Largely in reaction to the threat of future federal oversight and to the increased demands of municipal analysts for more uniform and comparable governmental financial statements, preparers, attestors, and a few groups broadly representative of users of governmental financial reports, convened to deliberate over the future direction of governmental accounting. The central issue discussed involved identifying which institution or institutions should ultimately be assigned the responsibility of setting governmental accounting

³³ Robert W. Doty, "The Municipal Securities Full Disclosure Act of 1977 – Analysis of Provisions and Arguments." *Analysis*. February 1978.

concepts and standards. At that time, it was evident that “the NCGA [National Council on Governmental Accounting] did not provide a satisfactory answer to the critics who believed governmental reporting would be more understandable and useful if it followed commercial accounting principles and reporting guidelines.”³⁴ In fact, members of the NCGA themselves believed their 21-member part-time board (which only met two to three times a year) to be inadequate for meeting research demands and resolving critical issues surrounding GAAP.³⁵ In addition, critics perceived the NCGA as an arm of the Municipal Finance Officers Association, and thus as dominated by preparers of financial statements.³⁶ They pointed to the MFOA’s exclusive role in selecting the original NCGA board members and their sustained financial support of the NCGA’s operations as indicative evidence.

On the other hand, it was also apparent that the Financial Accounting Standards Board’s (FASB) own attempt to remedy the dubious financial accounting practices of the public sector did not prove acceptable to a majority of stakeholders. In an article titled, “The FASB Has the Independence and Experience,” the AICPA and the FASB – representing the private sector agenda - asserted that persons and organizations interested in or affected by general-purpose financial statements of state and local governmental units “would best be served if the FASB were to establish the financial accounting concepts and

³⁴ Terry K. Patton, p. 45.

³⁵ Lynn and Freeman, p. 620

³⁶ Lynn and Freeman, p. 621.

standards to which those statements should conform."³⁷ The NCGA and the MFOA – representing public sector accounting and finance officials - opposed this recommendation and countered by stating that the FASB should "cooperate with NCGA and the Council of State Governments rather than establish a competing project."³⁸ Some members of the MFOA resented the increased interest in governmental affairs on the part of private sector-based institutions (the AICPA and the FASB), believing them to be newcomers to the field.³⁹ James Chan summarizes the situation:

In the final analysis, The FASB is unacceptable because "Generally Acceptable Accounting Principles," by definition, had to be accepted. State and local governments had neither the obligation nor the inclination to embrace the FASB.⁴⁰

In an attempt to strike a compromise, an ad hoc Governmental Accounting Standards Organization Committee (GASOC) was assembled in April 1980 and assigned the following mission:

To consider whether there is a need for a new structure to establish accounting and reporting requirements for state and local government and, if so, to develop detailed recommendations regarding the new structure - how it should be funded and how to bring about acceptance of the new structure's standards.⁴¹

The GASOC was comprised of a diverse group of professional accounting associations and public sector representatives, many of which maintained

³⁷ Arthur R. Wyatt, "The FASB has the Independence and Expertise." *Journal of Accountancy*. March 1979, 65.

³⁸ Elmer B. Staats, "The NCGA Has the Experience and Support." *Journal of Accountancy*. March 1979, 69.

³⁹ Michael Granof, p. 58.

⁴⁰ James L. Chan, p. 7.

conflicting visions with respect to the future of the governmental accounting profession. The major players included: the American Institute of Certified Public Accountants (AICPA), the Financial Accounting Foundation (which oversees the FASB), the Municipal Finance Officers Association (MFOA), the National Association of State Auditors, Comptrollers, and Treasurers (NASACT), the General Accounting Office (GAO), and the National Council on Governmental Accounting (NCGA). In addition to those organizations mentioned above, seven public interest groups - mainly representing the interests of state and local government finance officers - participated in the discussions. Their participation, however, differed from the major players in that they acted as observers with no voting membership.⁴² The initial product of the GASBOC was a list of attributes that the new standard-setting institution should possess.⁴³

- Independence – the standard-setting body must be free from undue influence by any particular segment of its constituency
- Competence – the standard-setting body must be highly knowledgeable in all areas of accounting and financial reporting with particular emphasis in the governmental area, and must be supported by a technically competent research staff
- Appropriate procedures – the standard-setting body must seek a broad range of views and thoroughly study the merits and consequences of the various alternatives before adopting standards
- Adequate resources – the standard-setting body must have sufficient funds to support its work

⁴¹ Report of the Governmental Accounting Standards Board Organization Committee, Exposure Draft, February 16, 1981.

⁴² James L. Chan, 10.

⁴³ Report of the Governmental Accounting Standards Board Organization Committee, Exposure Draft, February 16, 1981.

- Authority/Compliance – the board must be recognized as having the authority to set standards and failure to comply with its pronouncements must be generally considered unacceptable.

While no definitive agreement on these five items existed, there was general support among constituent groups for the creation of a new Governmental Accounting Standards Board (GASB).

More contentious, were matters concerning which body would assume oversight for the GASB, and the number of trustee seats that would be assigned to each party. Representatives of the accounting profession (Private Sector: AICPA, FAF; Public Sector: GAO, NASACT, MFOA) battled amongst themselves as well as with competing political interests (represented by the public interest groups) over these matters for nearly four years. The political interest groups strongly objected to having been originally allotted 3 of out of 12 seats under the initial scenario. The reaction of the Financial Accounting Foundation and the AICPA to the first scenario was also lukewarm at best. As representatives of the private sector, they feared that placing the GASB under the auspices of a newly created Governmental Accounting Foundation – a scenario that called for 6 of 12 trusteeships to be allotted to government representatives - would undoubtedly compromise the GASB's independence.⁴⁴ After several false attempts, the stakeholders eventually reached an agreement and in 1984 all parties consented that the responsibility of setting GAAP for over 84,000 state and local governments in the United States should be transferred to the GASB, a private,

⁴⁴ James L. Chan, p. 23.

non-profit organization that thereafter would function as an arm of the Financial Accounting Foundation (see Appendix A). Under the final scenario three newly created Financial Accounting Foundation trusteeships were established – with one seat allotted to the public interest groups, one seat allotted to the MFOA, and one seat allotted to the NASACT.⁴⁵

The major implications of the 1984 agreement are captured in the comments of one participant-observer of the negotiation process:

For the first time, real politicians would be sitting on the governing board for both the FASB and the GASB. Also for the first time, state and local government accounting standard setting is under the oversight of a board with an overwhelming majority of non-governmental representation.⁴⁶

The formation of the GASB not only broadened the participation of politicians and private sector interests in the standard setting process; it also produced a standard-setting body with “the resources to reexamine the governmental financial reporting model itself.”⁴⁷ At long last, there existed a forum in which early criticisms of governmental financial reporting could be adequately addressed.

⁴⁵ The MFOA and NASACT positions were later converted to at-large positions.

⁴⁶ James Chan, p. 26.

⁴⁷ Stephen Gauthier, “Auditing.” *Local Government Finance: Concepts and Practices*. Chicago: GFOA, 1991, 217.

"Due Process" and Statement 34

Recall that during the formation of the GASB, the GASOC built a consensus around several attributes that the Committee deemed essential for the proposed standard-setting structure. These attributes, in essence, provided the groundwork for an institution designed to remedy the commonly cited maladies of the NCGA. The NCGA had been characterized as a puppet organization dominated by preparers of financial statements and under the exclusive influence of the MFOA. It was criticized for not effectively meeting the diverse needs of financial statement users and was said to lack sufficient staff and resources to address issues such as the theoretical disparities between commercial and governmental accounting. Of interest, is that the GASOC's response – the eventual creation of the GASB - brought with it a new set of policy questions. The most pressing inquiry concerned how the GASB could ensure each constituent group that its standard setting decisions were free of undue influence by any particular party. James Antonio, the first appointed Chair of the GASB explains:

Keep in mind that GASB's birth was a long and painful occurrence. That situation combined with the essentially voluntary enforcement environment means that the GASB has particular need for acceptability. And a great deal of the acceptability has to do with how we go about setting standards. In fact, a widely accepted process is probably as important as making sure that the standards themselves are the best at any point in time.⁴⁸

⁴⁸ James F. Antonio, "Setting Governmental Accounting and Financial Reporting Standards in a Multi-Constituency Environment." In James L. Chan ed., *Research in Governmental and Nonprofit Accounting*, Greenwich, CT: JAI Press, Vol. 3 (B), 1987, 139.

Consequently, the GASB's adheres to formalized "due process" procedures in its standard-setting process. This open decision-making structure forms the boundary of a battleground in which the competing and incongruent convictions surrounding governmental accounting are to be reconciled.

As mentioned above, the GASB had been concerned with revising the governmental financial reporting model since its conception in 1984. Shortly after its creation, it held a series of public hearings that led to the development of an initial set of agenda items:

The thrust of this agenda is to re-examine the entire framework of governmental accounting with the intent of restructuring it as necessary to focus more directly on the identified information needs of taxpayer-citizens, investor-creditors and legislative and others involved in oversight activities.⁴⁹

Reiterating many of the same comments that surfaced during the debates of the late 1970's, public hearing participants pointed to the inadequacies of the current (Pre-Statement 34) governmental accounting model.

In these public hearings and through other research we did, you would find out what kind of information users need from financial statements, what do they need to know about government, and was the other model (Pre-Statement 34) delivering that information. And no it wasn't, not to the extent they needed x and were getting y. (GASB research staff member)

After compiling a statement of objectives of governmental financial reporting from the testimonies of three groups of primary users of financial statements - the citizenry, legislative and oversight bodies, and investors and creditors - the

⁴⁹ James F. Antonio, p. 140.

GASB concluded that there existed a general perception among these three groups that the current financial reporting model had not kept pace with the times.

Generally speaking, the old model went into place, except for minor modifications, during the middle of the Great Depression. Its usefulness had been outlived, so to speak. We found that you just couldn't dress up the old model enough (GASB research staff member)

In 1984 the GASB research staff optimistically anticipated that the Board might be able to push through a new reporting model within a two-year horizon. Yet, unlike the financial reporting reforms of the late 1970's that emerged largely in response to the technical bankruptcy of New York City, in the mid-1980's there existed no real crisis or outcry to spur accounting reforms. Moreover, the contentiousness surrounding proposed revisions of the financial reporting model supplied an imposing hurdle. The GASB research staff recalls the "due process" proceedings leading up to the issuance of Statement 34:

That was an arduous task it went through a whole series of Invitation to Comments, two Preliminary Views, and an Exposure Draft. These were all "due process" documents that drew out the models for people to comment on. Put the balloon up and see how many people shoot at it, change it again and change it again.

Based upon an analysis of the constituents' reactions to the Invitation to Comments and the two Preliminary Views, the GASB set forth a preliminary financial reporting model in January 1997 in an Exposure Draft titled, *Basic Financial Statements – and Management's Discussions and Analysis – for State and Local Governments*. The major breakthrough of the Exposure Draft

document was a fundamental redefining of the meaning of public stewardship.

The Exposure Draft reads:

Stewardship comprises not only the safekeeping of all resources, capital as well as financial, and compliance with all requirements for their use (fiscal accountability), but also the efficient and effective use of resources to meet authorized service objectives and all obligations undertaken by the government on an ongoing basis (operational accountability).⁵⁰

The GASB's justification for the decision was as follows:

The citizenry, legislative and oversight bodies, and investors and creditors also need information about the probable medium- and long-term effects of past decisions on the government's financial position and financial condition. Without that information, these groups cannot access the probable effect of current-period activities on the future demand for resources, or whether the government can continue to meet its service objectives and financial obligations in the future.⁵¹

In broadening the concept of public stewardship to include operational accountability, Statement 34 introduced a set of amended accounting principles that incorporated many of the recommendations advocated in the late 1970's by the long-term, economic resources accounting school. The most obvious prerequisite was the necessity of changing from a financial resources measurement focus to an economic resource measurement focus:

Operational accountability information focuses on reporting economic activity. The provision of objective, consistent, and comparable information about operating costs requires a measurement on economic (capital as well as financial) resource flows.⁵²

⁵⁰ Statement No. 34 of the Governmental Accounting Standards Board: Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments, Basis For Conclusions (Appendix B). Norwalk, CT: GASB, June 1999, No. 171-A, 82.

⁵¹ Statement No. 34, p. 83.

⁵² Statement No. 34, p. 85.

Likewise, the reporting and depreciating of all fixed assets, including infrastructure assets, was also deemed essential for measuring long-term, operational stewardship.

The logical result of the GASB's decision that government-wide financial statements should demonstrate operational accountability was that governments would be required to report *all* assets, because economic resources does not limit the types of assets reported.⁵³

The required reporting of all fixed assets necessitated the subsequent reporting and depreciation of infrastructure assets such as roads, bridges, tunnels, drainage systems, water and sewer systems, dams, and lighting systems. One GASB research staff member explains the rational behind reporting infrastructure assets:

If we didn't include infrastructure - indications are what 50-60% of the total capital assets of governments is infrastructure - a big number, then you don't have a way of monitoring change in financial position.

The newly proposed infrastructure reporting provisions sparked heated debated throughout the governmental accounting community. Indeed, over 1,500 letters on the subject were received from April through June 1999.⁵⁴ The loudest voice of opposition to the infrastructure requirements initially emerged from the American Association of State Highway & Transportation Officials (AASHTO). One AASHTO representative comments:

Based on our research and comments from our member DOTs [Department of Transportation], we do not see the value generated by

⁵³ Terry K. Patton and David R. Bean, "The Why and How of the New Capital Asset Reporting Requirements." 35.

⁵⁴ Statement No. 34, p. 124.

reporting infrastructure assets at the entity-wide perspective in the basic financial statements. Our member states, by and large, believe the infrastructure assets composing the state highway systems are indefinite-lived assets. Most states have developed and refined elaborate planning, programming, and monitoring systems to ensure the state's transportation programs are managed efficiently and effectively and meet the requirements of Federal and state laws.

AASHTO warned too of the substantial costs of implementation:

Further we estimate that it will take hundreds of thousands of staff hours and tens of millions of dollars to accumulate the historical information. Also, large amounts of additional staff hours and millions of dollars will be required annually to carry out the infrastructure asset provisions as outlined in the Exposure Draft. Spending money on this will not in our opinion lead to a single transportation improvement, instead it likely will force us to forego some planned transportation improvements to pay for it.

Other groups, led by the Government Finance Officers Association, echoed AASHTO's concerns regarding the practicality of collecting and recording historical cost values for infrastructure assets. In general, public sector constituent groups - those generally representing the interests of financial statement preparers - did not believe the benefits of recording the historical asset value of infrastructure assets were sufficient to offset the perceived costs. Drawing from "old school" financial resources-based accounting theory, these critics argued that stewardship of public infrastructure assets entailed maintaining control over the assets – ensuring that the asset was neither destroyed nor stolen. In their view, the recording of a historical infrastructure value was entirely ludicrous. A GASB research staff member recalls the most commonly expressed complaint:

The objections and all the complaints were made about the asset value. Why do we need to know a value when we cannot sell it? What good does it do to know how much we paid for it? That is where all the focus and concern was – How to put a price tag on the Brooklyn Bridge?

In an effort to appease such criticisms, the GASB added several transition provisions to help minimize Statement 34 implementation costs. For instance, Statement 34 permits governments to calculate historical infrastructure asset value using deflated replacement costs. In a similar respect, retroactive reporting of infrastructure assets need not extend beyond June 30,1980.⁵⁵ Collectively, the addition of these transition infrastructure provisions instilled considerable flexibility into Statement 34. As a consequence, governmental units gained a substantial amount of autonomy in choosing how to comply with infrastructure reporting requirements.

The intention of the GASB was not so much to require governments to report a total value for their infrastructure assets, but rather to require those entities to report the annual loss of serviceability of their infrastructure assets. One GASB research staff member explains the distinction:

If it was just to get the value of the asset I don't think we would have done it. The whole idea was to report the "using up" - the change in the service potential of that asset - in order to do that you got to have a number to start with.

Under the economic resources measurement focus an "accurate" cost of providing goods or services could not be determined without reporting some expense (for example, depreciation expense) for the cost of using capital

⁵⁵ Statement No. 34, p. 54.

assets.⁵⁶ Therefore, following the precedent of the private sector accounting community, the GASB decided that most capital assets should be depreciated.⁵⁷ Needless to say selecting depreciation as the tool to account for the loss of serviceability of capital assets like infrastructure did not go over well with preparers of governmental financial statements. Resembling the dialogues that emerged in the late 1970's, critics again attacked the relevance of depreciation in the governmental sector. However, there also arose a new critique that lacked historic precedent. One AASHTO representative writes:

We are extremely concerned about depreciating infrastructure assets. It is likely using such a measure would substantially skew the operating statement expenses and have no relationship to actual activity associated with these assets...We believe the estimated useful life would be mostly conjecture, since current scientific methods focus primarily on assessing the road/bridge condition and any needed repairs to keep or return this facility to acceptable standards.

As an alternative tool for reporting the annual cost of using infrastructure assets, AASHTO urged the GASB to consider permitting public entities to calculate and report what it costs to maintain and preserve infrastructure on an annual basis via a so-called preservation method.

If GASB feels that it must move forward with the full accrual approach, we recognize that infrastructure assets must be recorded or the model will not work. In this case, AASHTO recommends that the Board give the states the option of using the depreciation method or *a preservation method*.

⁵⁶ Terry K. Patton and David R. Bean, "The Why and How of the New Capital Asset Reporting Requirements." 35.

⁵⁷ Terry K. Patton and David R. Bean, "The Why and How of the New Capital Asset Reporting Requirements." 35.

AASHTO's introduction of the *preservation method* initiated a series of dialogues that ultimately resulted in the GASB's recognition of a "modified" approach as a viable alternative to the depreciation method. One GASB research staff member recalls the development process:

We worked with them [AASHTO] over a four year period to develop the "modified" approach which allowed them an option of not having to depreciate infrastructure, but instead monitoring the condition and the cost to maintain and preserve it and report that as required supplementary information and then expensing preservation and maintenance costs. Which they said - and I believe them - is more closely aligned with the way they manage the assets and gets more useful information out there.

Certainly, AASHTO had a vested interest in proposing that infrastructure assets be disclosed in a manner more aligned with current state transportation management practices. The cost to implement the "modified" approach – an approach that permits agencies that manage infrastructure collections with asset management systems to utilize the output of those systems to satisfy Statement 34 infrastructure reporting requirements - would be significantly reduced for state transportation agencies, most of which already had in place some type of asset management system. The formal appeal put forth by AASHTO and the Federal Highway Administration, however, focused less on the potentially high-incurred costs of calculating depreciation and more on the pitfalls of calculating depreciation in the age of information technology. A GASB 34 primer published by the U.S. Department of Transportation reads:

The depreciation approach does not provide information to the public regarding the actual cost of use of infrastructure assets. Further,

depreciation expense could be viewed by the public as evidence that the asset is being allowed to deteriorate over time when most agencies continuously maintain these assets to a given level of condition.⁵⁸

In contrast, the primer explains the advantages of the “modified” approach:

The modified approach provides a venue to document asset management efforts in general and preservation or renewal activities in particular. Governments will have a platform from which to discuss the merits of highway preservation compared to deferred maintenance.⁵⁹

In other words, given the technological breakthroughs that have led to the creation of asset management systems that account for actual loss of serviceability of infrastructure assets, reporting depreciation charge may not only mislead the external public charged with monitoring management decisions, it may additionally restrict a government’s potential to optimize internal management and planning decisions.

The GASB’s particular need for gaining general acceptance among a diverse constituent base, coupled with pointed opposition to the Exposure Draft’s proposal of measuring loss of serviceability solely through the vehicle of depreciation, paved the road for the eventual inclusion of a “modified” approach in Statement 34. The major implication of providing two options for handling infrastructure, which at the time seems to have stemmed largely from an effort of mediation, is that each of the 84,000 state and local government units that fall under the jurisdiction of the GASB is afforded the flexibility to pursue the approach of its choice. Certainly, the introduction of an information technology-driven “modified” approach has the potential to transform the manner in which

⁵⁸ Primer: GASB 34, p. 19.

the public is able to watch over the raising and allocation of public resources. For the first time, citizens, legislative authorities, and investor and creditors, may be able to monitor the actual amount of resources spent on a given infrastructure network and then observe the subsequent effect those allocations have upon the condition of that network over time. However, whether the potential of the information technology-driven "modified" method is realized depends upon the incentives and constraints operating in each of the implementing governmental units. While the GASB has provided a "push" for the deployment of asset management systems in state and local governments - if the systems are not customized to interface with existing management practices - few governments are likely to go "modified" (Chapter Three). Similarly, how well the design and customization of asset management systems align with the preferences and inhibitions that underlie the decision-making processes of state and local public entities will also play a profound role in determining the type and detail of information available to financial statement users (Chapter Four). As the focus of this study turns to the case of Winchester, Massachusetts, the interplay between technology and politics should begin to unfold.

⁵⁹ Primer: GASB 34, p. 19.

Chapter Three: The Story of Winchester, Massachusetts

Photograph I: Winchester Town Hall

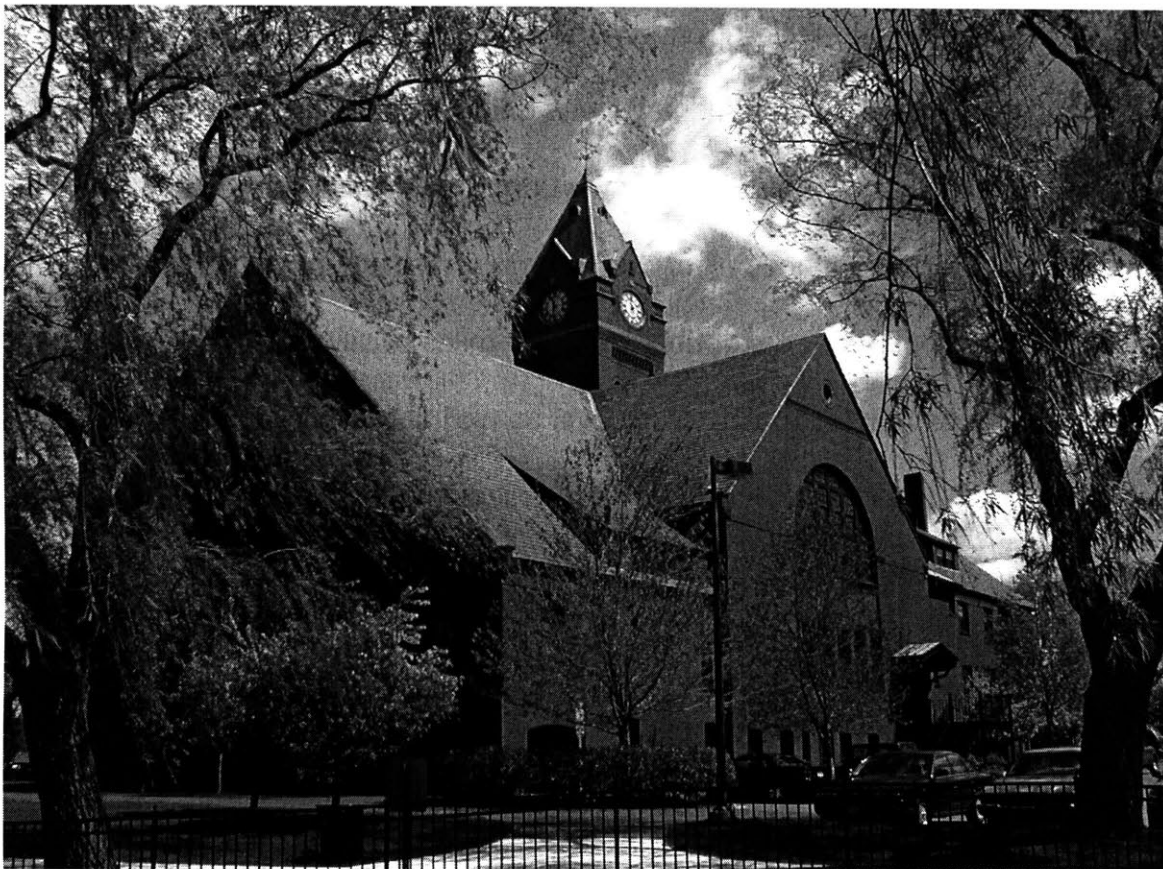


Photo taken by David S. Greenblatt (May 3, 2002)

Background:

Winchester, Massachusetts is a small suburban town with a population of 20,000 residents located just northwest of Boston. It is one of the wealthiest towns in the Commonwealth of Massachusetts, ranking 14th in the state in terms of per capita income.⁶⁰ An elected five member Board of Selectmen manages

⁶⁰ FACTS 2000 Winchester Enters the New Millennium – A Preliminary Report by the FACTS Committee, Version 0.2, September, 2000, p. 4.

the town and appoints a Town manager who is responsible for supervising daily operations as well as drafting annual budgets and financial reports. Annual budgets must be approved by the Town Meeting, a legislative body comprised of 192 elected members selected from among eight precincts. The Town Manager is served by a number of town departments and appointed officials, including a Department of Public Works (DPW), Town Comptroller, and an Assistant Town Manager. The DPW manages all of the Town's infrastructure collections, which include: 95 miles of water distribution pipe, 84 miles of sewer pipe, 67 miles of drainage pipe, 64 miles of public roadways, as well as numerous public buildings and facilities. A Director of Public Works oversees and coordinates all construction, maintenance, and repair activities with the assistance of a Roads Manager, a Water/Sewer Systems Manager, and a 60 crew member staff.

The Town Comptroller, who is also appointed by the Board of Selectmen, is responsible for establishing standard practices relating to all accounting matters and procedures and the coordination of systems throughout the town. The Town Comptroller additionally oversees the annual financial statement auditing process. Each year the Town hires a major accounting firm to prepare a financial statement based upon data supplied by the Town Comptroller. The same firm then conducts the audit.⁶¹

In terms of financials, the Town of Winchester faces an unrelenting and substantial deficit position. The Town's operating revenues for the fiscal year

⁶¹ In light of the recent Enron scenario, the AICPA is currently investigating this dual function commonly performed by accounting firms.

2002 were approximately \$55 million, the major source of which was derived from real estate property taxes. One dollar of Winchester town spending is funded from the following sources:⁶²

- \$.62 Residential Taxpayer
- \$.04 Commercial/Industrial Taxpayer
- \$.01 Personal Property
- \$.09 State Aid
- \$.20 Local Receipts (motor/boat excise, trash, fees, permits, water and sewer)
- \$.04 Other Available (free cash, sale of land, overlay, cemetery trust)

A statewide statute known as Proposition 2 ½ limits the rate of increase of real estate property taxes in Winchester. Prop 2 ½ caps the property tax levy at an amount equal to 2 ½% of the value of all taxable property in the Town. A secondary limitation is that no levy in a fiscal year may exceed the preceding year's allowable tax levy by more than 2 ½%. Unfortunately for Winchester, and numerous other small Massachusetts towns, this 2 ½% rate cap has been substantially lower than the overall rate of inflation or rate of increase of property values during the last 20 years. Simply put, revenue streams have not kept up with the increasing expenses associated with providing public services. This deficit trend has forced the Town's officials, on numerous occasions, to request a Town-wide referendum vote in the hopes of overriding the Prop 2 ½ statute. One Town Selectmen explains:

Here in Winchester, we are almost at the point of annually having to go out and ask our voters to raise their property taxes, virtually every year. That's difficult!

⁶² FACTS 2000, p. 14.

One strategy Winchester has adopted over the years to compensate for insufficient operating revenues is to defer capital improvement and maintenance spending. One elected officials recalls:

Both times funds were to be allocated towards capital reserves or one-time costs; members of the town meeting disapproved and exclaimed, 'we can't leave the school children uneducated.' And so we push the money into the school budget and put the band aid on it and hope it gets better next year. Which of course it just doesn't because our property taxes are capped. We just can't raise the money.

The Town's Charter provides that a Capital Planning Committee present annual recommendations to the Board of Selectmen and the Town's Finance Committee for a 5-year Town-wide Capital Improvement Program. The recommendations of the Capital Planning Committee have been consistently under-funded in the Town budget.⁶³ As evidence, in his 2002 Town Budget summary report, the Town Manager summarizes the findings of the Capital Planning Committee:

The amount being recommended for capital improvements is woefully inadequate and represents only a fraction of the amount called for in the Selectmen's policies. Regular ongoing, annual maintenance is also currently woefully under-funded. Sadly, the policies have to be viewed as goals at this time.⁶⁴

The Board of Selectmen's capital spending policies call for 5%-6% of the Town's net revenues to be allocated for capital improvements. However, in actual practice, Winchester's capital improvement allocations fall short of this

⁶³ John B. Miller, *Principles of Public and Private Infrastructure Delivery*. Boston: Kluwer Academic, 2000, p. 350.

⁶⁴ Town Of Winchester 2002 Budget Summary, Memorandum to Board of Selectmen.

benchmark by more than \$2.5 million annually.⁶⁵ The DPW estimates that it receives roughly .01% of the total value of its infrastructure collection each year for capital improvements, an amount barely sufficient to perform patchwork on the most needed repairs. The Director of Public Works explains the thrust of the situation:

They have a Capital Planning Committee that reviews the entire towns capital needs. Each department has to give their justification of why they need the funds, of why its needed for the town – you know, sell their pitch. The committee then rates all the projects – the higher rated ones get funded. The problem is that schools keep using more and more money every year and regardless of how bad the roads are, schools, police, and fire will always take precedent over us, at least, until everything falls apart.

The continued under-funding of the Town’s repair and maintenance activities has not only led to a drastic reduction in the overall pool of available funds, it has subsequently left some departments feeling they have had to bear a disproportionate amount of the brunt– a blow that has, in effect, left the DPW with the short end of the stick. One DPW manager sums up the situation: “We know that in the end we are not going to get our fair share of the pie.”

The Project:

Beginning in the autumn of 2001, the author, as part of the Infrastructure Systems Delivery Research (ISDR) group at the Massachusetts Institute of Technology (MIT), became engaged in the test implementation of a previously developed infrastructure asset management prototype tool for use in the Town of Winchester, Massachusetts. The ISDR group entered into a formal agreement

⁶⁵ Town of Winchester 2002 Budget Summary, p. 14.

with the Town of Winchester in September of 2001, the intention of which was twofold: (1) to optimize internal planning and management of the Town's infrastructure asset collections, and (2) to aid the Town in complying with the newly proposed infrastructure reporting requirements set forth in GASB Statement 34.

The database structure that supplies the foundation of the infrastructure management tool had been previously designed to closely mirror GASB Statement 34 financial reporting practices. Under the new financial reporting rules, governments must calculate the historical cost of infrastructure constructed or rebuilt in fiscal years ending after June 30, 1980. Governments can then either calculate the total loss of serviceability by depreciating those infrastructure assets over their estimated useful life, or they can calculate and publicly disclose the cost of maintaining, preserving, and improving those assets each year as specified under Statement 34's "modified" approach. Likewise, all new infrastructure must either be depreciated or accounted for according to the rules of "modified" approach. Following the later method (the "modified" approach) entails maintaining an asset management system that at a minimum meets the following four requirements:⁶⁶

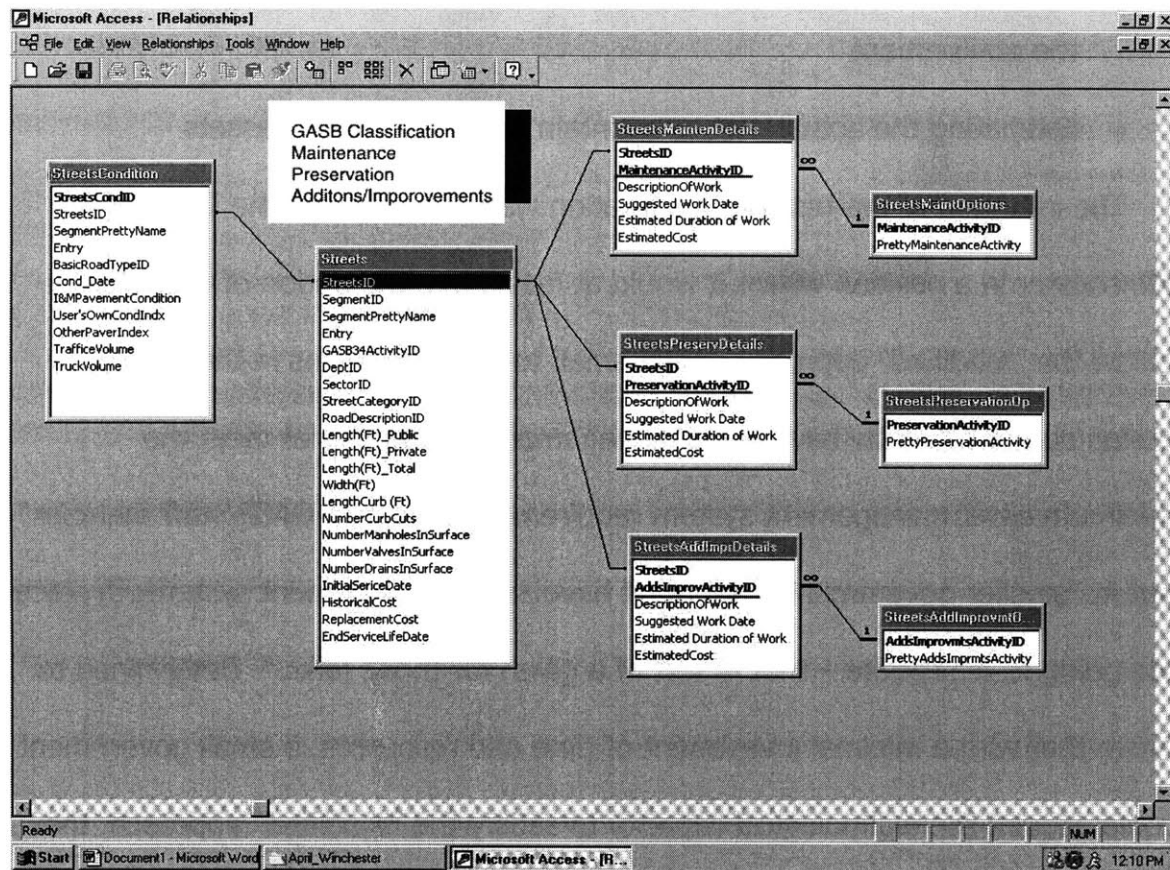
- Having a current inventory of eligible assets
- Documenting the condition of those assets via a reproducible assessment procedure

⁶⁶ Primer: GASB 34, p. 8.

- Demonstrating the assets are being preserved at a level predetermined by the government
- Estimating the actual cost to maintain and preserve the assets

The intention of the test implementation was to help place the Town of Winchester in a position where it would at least have the option of choosing to follow the “modified” approach. Most small to mid-size towns in the United States do not currently have asset managements systems that meet the minimum asset management system requirements. As one GASB staff member put it, “smaller governments that don’t have asset management systems in place are going to depreciate – that is sort of a given for those folks.” Determined to prove that with a minimal investment of time and resources, a small government could acquire the technological capacity to satisfy the “modified” approach, the ISDR team customized inexpensive and readily available software programs (Microsoft Access[®], ESRI ArcView GIS 3.2[®]) to systematically comply with each of the asset management system requirements listed above. For instance, the database structure was structured by Professor Miller to track annual infrastructure expenditures according to Statement 34 delineated activity categories, which include “maintenance”, “preservation”, and “addition/improvement” activities. See Figure A below:

Figure A: Classification of Street Expenditures in ISDR Winchester Database (2002)



This classification system provides a mechanism for Town officials to track and capture annual spending patterns for each infrastructure system, which in turn facilitates the process of “estimating the actual cost to maintain and preserve the assets each year (fourth requirement). Further, the database was set up to facilitate queries that “spit out” required asset inventory and condition assessment information such as “total miles of road pavement in the Town” and “percentage of road pavement in good condition”(first and second requirements). The output of such queries can be readily exported and analyzed in spreadsheet programs (Microsoft Excel[®]) commonly used in the Town.

Beyond Statement 34 compliance concerns, the prototype tool also provides an effective vehicle for optimizing capital budgeting decisions via “what if” analyses. In other words, a public manager might ask “if” an additional \$100,000 is allocated for road maintenance and repair “what” then will be the resulting impact on road condition? Such decision-support functions supply appointed and elected officials with an improved means of analyzing the implication of potential decisions. For example, the benefits of spending a few more dollars on preventive maintenance upfront so as to avoid the daunting costs of reconstruction in the future can be more readily captured. It is the opinion of the ISDR team that without the aid of a basic infrastructure asset management tool – an information technology that provides automated tools for data entry, storage, maintenance, retrieval, conversion, analysis and spatial display – Winchester would not be in a position to satisfy the four asset management requirements outlined above, nor have the capacity to optimize infrastructure management decisions via “what if” analyses. It was additionally assumed that a tool designed to equip Winchester with the technological capacity to satisfy the “modified” approach, could just as easily aid the Town in complying with Statement 34 if it chooses to follow the traditional depreciation approach in the future.

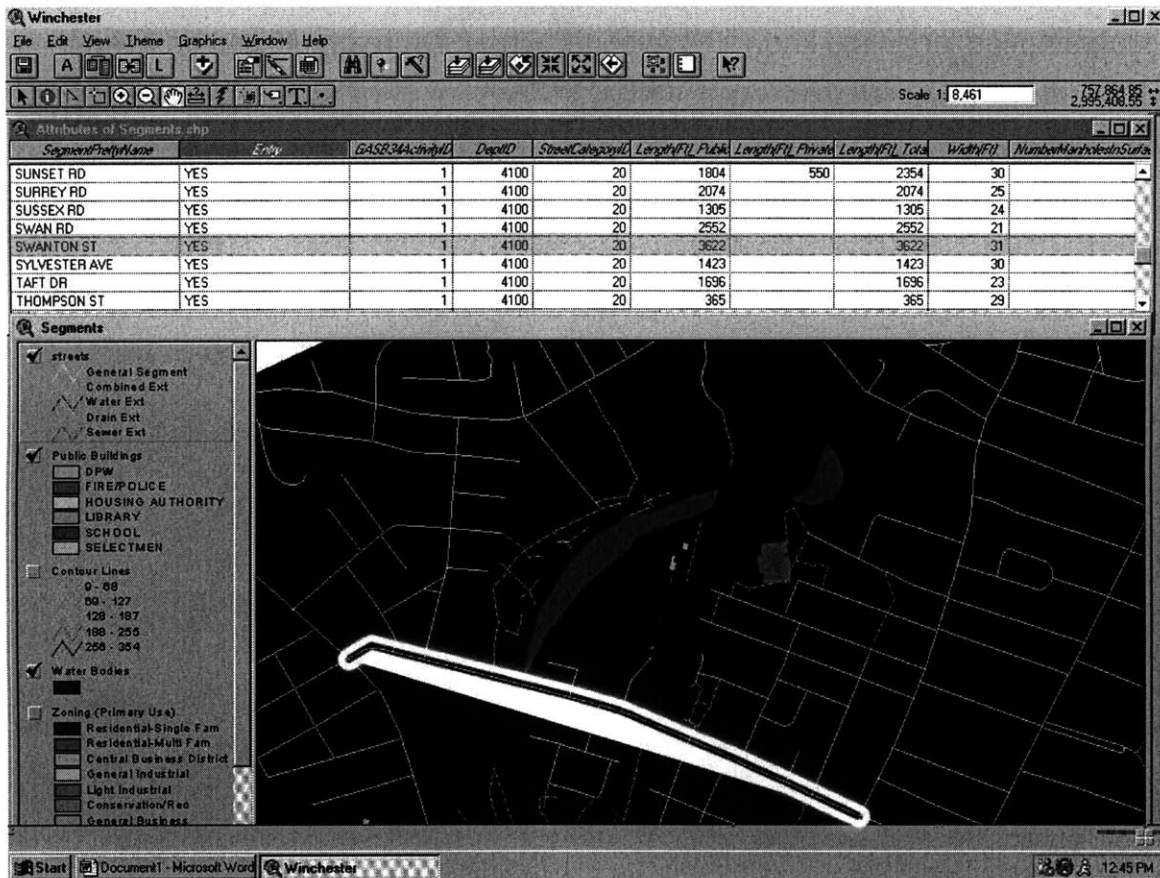
Using Winchester as a testing ground of sort to evaluate what it would take to provide this small Massachusetts community with the option of complying with Statement 34 via the “modified” approach, the ISDR group arranged a

preliminary meeting with the Town Manager and the head of DPW. The purpose of the initial meeting was to lay out the objectives of the ISDR team and to begin identifying government-wide information sources pertaining to the location, make, dimensions, historical valuation, date of installation, condition, and cost of replacement of the Town's major infrastructure systems. Following the meeting, the head of DPW and several of the Town Engineers made available to the team 400 (ft)-scale engineering maps of the Town's road, water, sewer, and drainage systems. In addition, both the Department of Engineering and the DPW each supplied their own version of a digital spreadsheet containing inventory and basic condition data for the Town's road network.

The distributed road documents aided the ISDR team in tailoring the database structure developed by Professor Miller to align better with current management practices of the Town's Public Works Department. For example, upon observing that the Town managed their roadway system, for the most part, according to the entire road segment (as opposed to breaking the road at each intersection), the ISDR group decided to follow suit and break each of the infrastructure networks at the beginning and end of the entire road segment. As a result, the pavement section, water lines, sewer lines, and drainage lines that run the course of Oxford Street are each classified as "Oxford Street" in their respective database tables.⁶⁷ See Figure B:

⁶⁷ The exception here is that long streets, such as Main Street, were divided into Main St-North, Main St-South, and Main St-Central. See also Footnote 66.

Figure B: Example of Segment Definition (Swanton Street)

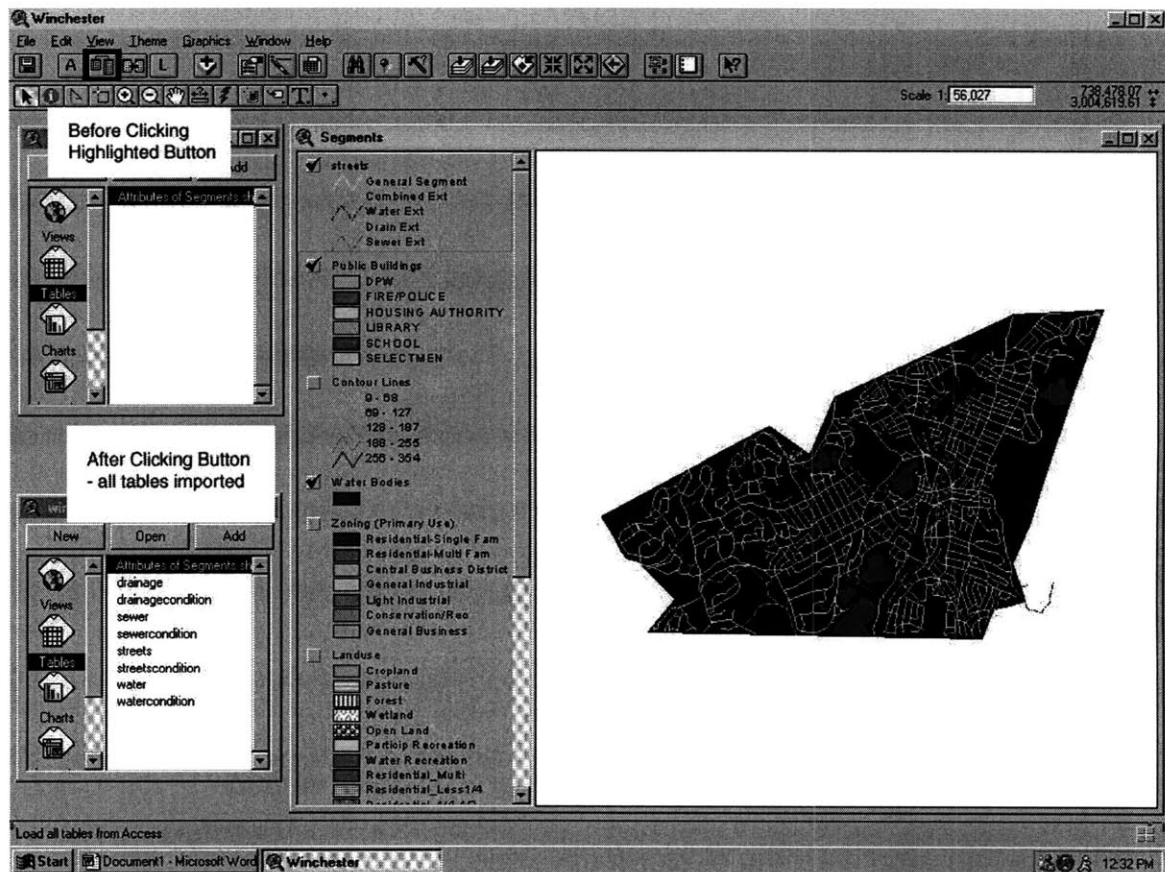


The team, led by the advice of Professor Miller, further decided to interlink the backend database with ArcView GIS (Geographical Information System) 3.2, a PC- based desktop mapping platform developed by Environmental Systems Research Institute (ESRI®). In any GIS, graphic information (digital maps) can be linked with textual information (tabular data) to produce thematic, or ‘intelligent’ maps.⁶⁸ Further, in ArcView GIS 3.2 this integration of geographical

⁶⁸ Scott Hutchinson and Larry Daniel, *Inside ArcView GIS, Third Edition*. Canada: OnWord Press, 2000, 2.

and textual data can be automated through the use of an object-oriented programming language known as Avenue. The ISDR team utilized an Avenue script developed by MIT's Spatial Database Manager to facilitate this "automated linking" function with a single click of a button. See Figure C below:

Figure C: Automated Linking of Database to GIS Interface Function



One of the basic premises in tying the database to a GIS interface was to facilitate interdepartmental coordination, most notably between Winchester's DPW and Town Comptroller Office. The GIS interface equips Winchester officials with a quick and "user friendly" means to access and retrieve data pertaining to

any of the infrastructure systems. By clicking on a thematic map of the Town, town officials can view asset inventory, condition, and cost of replacement details that previously were buried in stacks upon stacks of engineering documents. With an eye to coordination, the team also chose to let the road network serve as the base reference for all other infrastructure collections. Consequently, users first select one type of infrastructure system (roads, water, sewer etc.) before clicking on the digitizing road segment to retrieve information. See Figure D and Figure E:

Figure D: Selection of Infrastructure System Type (Step 1)

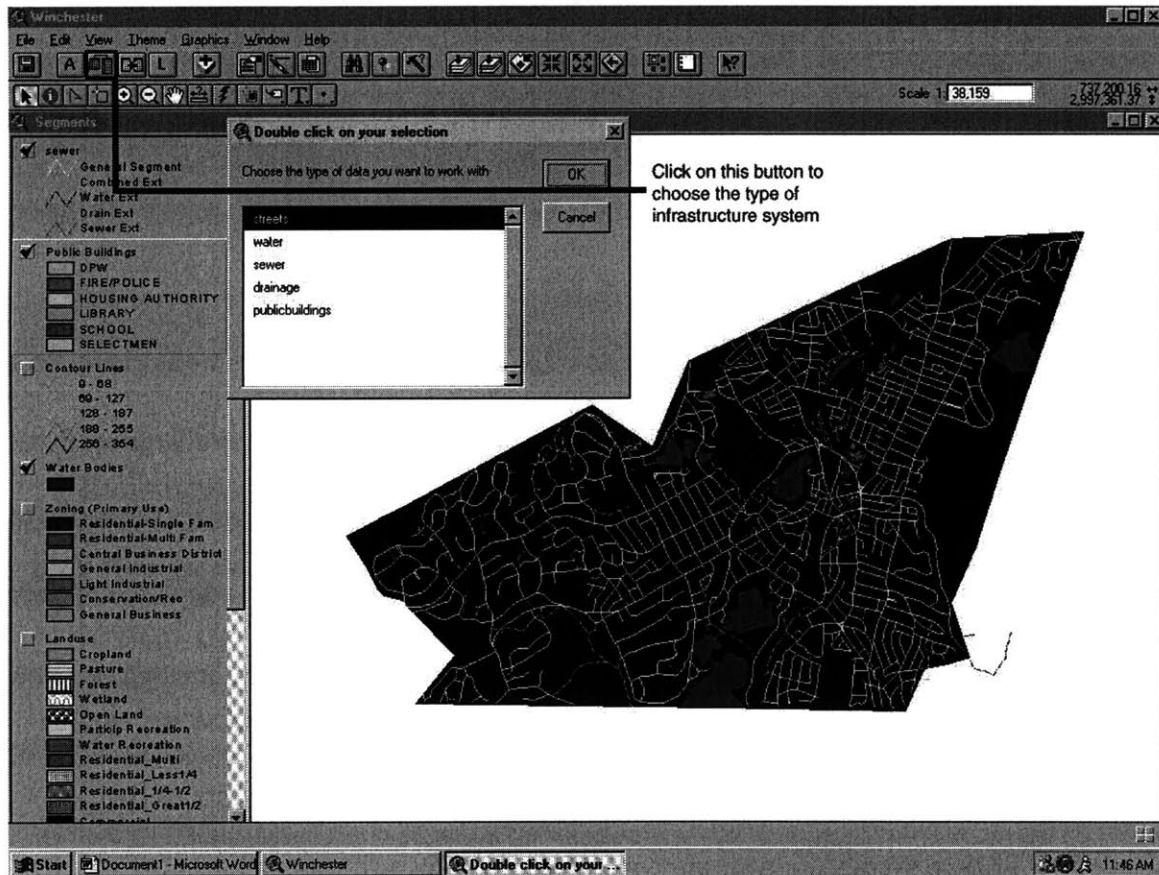
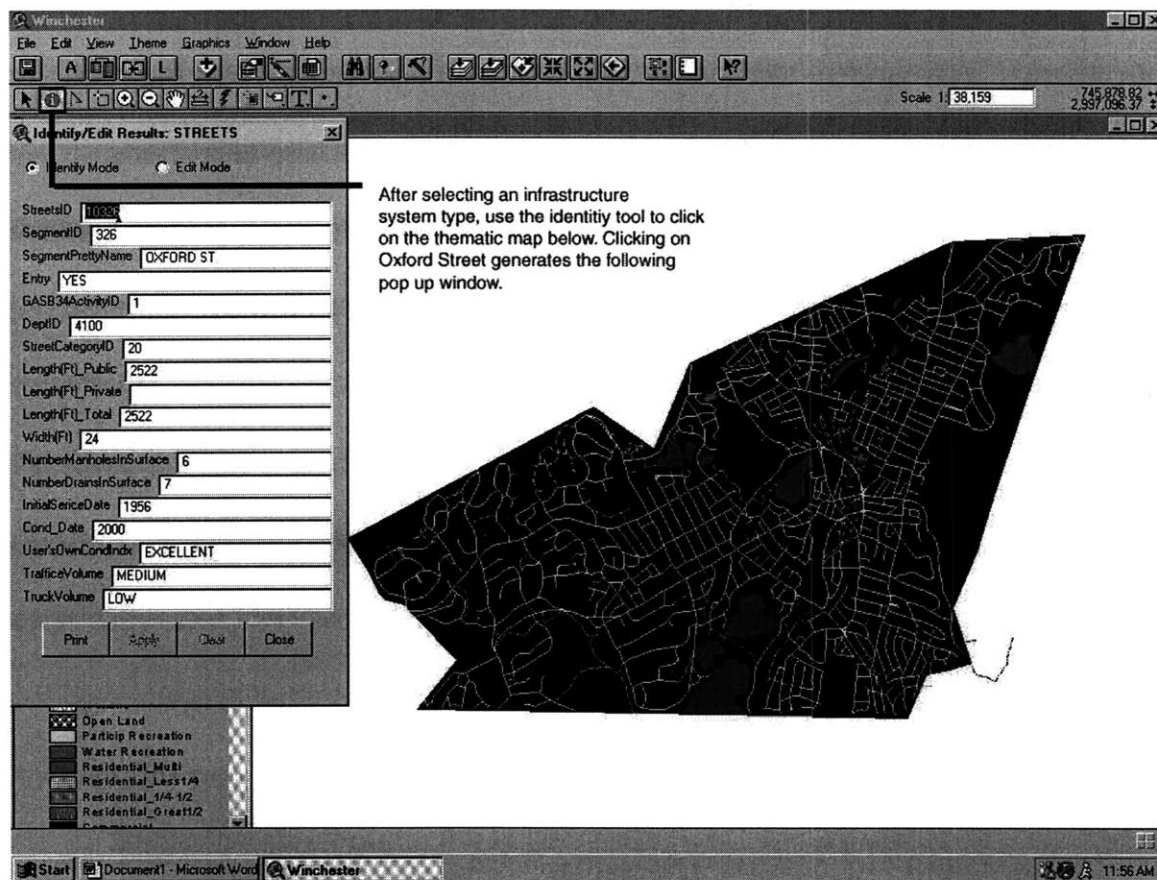


Figure E: Identification of a Segment in the Selected Infrastructure System (Step 2)



The fear was that adding additional lines to the Winchester thematic map to represent subsurface infrastructure networks would complicate the ease of data retrieval.

A second objective of integrating the database with GIS software was to provide town officials with the technological capacity to visually display the results of built-in database queries. It is one thing to be able to say that for example 20% of town roadways are in poor condition, but it is a wholly different

capability to be able to visually present where those “poor condition” streets are located.

Choices of how to collect, organize, and analyze data involve a rich set of tradeoffs that include questions of flexibility, ease of learning, and knowledge representation as well as speed, efficiency, and cost.⁶⁹ In the case of the ISDR tool, the drawbacks associated with letting each row in the database represent an entire road segment are that variables such as pipe size may vary at different sections of the same road. As a consequence, additional columns (pipe size2, pipe size3) must be added to database tables, which, in turn, make summary statistics of an entire road segments more complex. See Figure F below:

⁶⁹ Joseph Ferreira, Jr., “Database Management Tools for Planning.” *APA Journal*, Winter 1990, 78.

Figure F: Example of Multiple Pipe Types in Water Infrastructure Table

Segment	Entry	Depth	Pipe Type A	Pipe Type B	Pipe Size 1 (inch)	Pipe Length 1 (ft)	Pipe Size 2 (inch)	Pipe Length 2 (ft)	Total Pipe Length (ft)	NUM
GIRARD RD	YES	1050	A.C.		8	1800			1800	
HARRINGTON RD	YES	1050	COPPER		2	230			230	
GINN RD	YES	1050	A.C.		8	2150	6	300	2450	
HARVARD ST	YES	1050	C.I.		8	830	6	660	1490	
HASTINGS RD	YES	1050	D.I.		8	800			800	
HAWTHORNE RD	YES	1050	A.C.		8	815			815	
HEMINGWAY ST	YES	1050	C.I.	A.C.	12	890	6	1580	2470	
HENRY ST	YES	1050	C.I.		6	900			900	
HERRICK ST	YES	1050	C.I.		6	450	5	400	850	
HIGH ST	YES	1050	C.I.	A.C.	10	600	8	1300	1900	
HIGHLAND AVE_C	YES	1050	A.C.	D.I.	10	2000			2000	
HIGHLAND AVE_N	YES	1050	A.C.	D.I.	10	4200			4200	
HIGHLAND AVE_S	YES	1050	A.C.	D.I.	12	500	10	5100	5600	
HIGHLAND TER	YES	1050			2	285			285	
HIGHLAND VIEW AV	YES	1050	C.I.		8	285			285	
HILL ST	YES	1050	C.I.		10	900	8	400	1300	
HANCOCK ST	YES	1050			6	778			778	
FITZGERALD AV_WE	YES	1050	A.C.		8	300			300	
MASON ST	YES	1050	C.I.	D.I.	8	600	6	900	1500	
EVERETT AVE	YES	1050	C.I.		8	2855			2855	
FAIRFIELD PL	YES	1050	A.C.		12	300	8	300	600	

Further, spatially linking all infrastructure systems to a common digitized road segment becomes complicated when, for example, subsurface infrastructure systems assigned to that road segment veer from the path of the roadway. It suffices to say that the ISDR group was forced to weigh the benefits of designing an inexpensive tool more aligned with current management practices and more adept at facilitating interdepartmental coordination against the shortcomings of reduced summary and spatial accuracy. The product of this balancing act was the generation of a standardized exceptions procedure that documents instances

where compiled data complicate the cost-effective, “user friendly” design constraints of the infrastructure management tool.⁷⁰

During these early development stages, a follow up meeting with several Winchester town officials was organized to discuss how to uncover and compile additional infrastructure related documents. At the time, there was some confusion in regards to how far back Winchester would need to go back in retroactively reporting its infrastructure holdings. As promulgated in GASB Statement 34, Winchester is required only to retroactively report infrastructure assets acquired over the last 25 years. However, the goal of the ISDR group had always been to calculate the total original value of all of the Town’s major infrastructure collections. The head of DPW supported this pursuit, and in fact joked, “I know what Winchester is going to do, we are going to have to count every blade of grass, detail every inch of pipe we have.” Thereafter, the focus of the dialogue turned to the anticipated difficulties of tracking down and compiling historical value and condition assessment data. The team explained several of the Statement 34 transition provisions that were added to ease the implementation process. As noted in Chapter Two, Statement 34 permits the

⁷⁰ For instance, if it was found that a sewer line on Oxford Street extended beyond the Oxford Street road segment, then the protruding section was included as a separate row and renamed Oxford Street Sewer Extension. Further, if the water pipe underlying Oxford Street also extended beyond the Oxford Street road segment but followed the same general path of the sewer pipe, then the combined protruding section was included as a new row and renamed Oxford Street Extension, which signified that more than one type of infrastructure system was present. Finally, when it was observed that more than one infrastructure system extended beyond the Oxford Street segment, but the protruding lines did not follow the same course, then a new row was formed for each infrastructure system. For example, an Oxford Street Water Extension, an Oxford Street Sewer Extension, and an Oxford Street Drainage Extension may all exist. For more

calculation of an “estimated” historical cost as a substitute for historical cost. One method of estimating historical cost is by deflating the current replacement cost using price-level indexes to the acquisition year.⁷¹ Believing historical cost to be useless for management purposes, each of the DPW managers and Town Engineers agreed that deflating current replacement made more sense. Thus, the ISDR team extracted replacement cost figures from several recent bid proposals and deflated the numbers according to a U.S. Department of Transportation price-level index.⁷²

In regards to condition assessment, Statement 34 permits the following:

Determining what constitutes adequate documentary evidence to meet the second requirement [documenting that the eligible infrastructure assets are being preserved approximately at (or above) a condition level established and disclosed by the government] for using the modified approach requires professional judgment because of variations among governments’ asset management systems and condition assessment methods. These factors also may vary within governments for different eligible infrastructure assets.⁷³

In other words, GASB Statement 34 authorizes towns to devise their own condition assessment procedures. The catch is that such procedures must be documented in a consistent and replicable manner. Upon hearing this provision, the concern among several town officials of having to incur substantial future condition assessment costs was somewhat alleviated. This said, at a later

on these and other exceptions see Thomas Messervy’s Master’s Thesis, titled “Deploying a GASB Compliant Asset Management Tool in Winchester, Massachusetts” (MIT: Cambridge, 2002) 41.

⁷¹ Primer: GASB 34, p. 33.

⁷² The price-level index used was the GASB-recommended, U.S. Department of Transportation, Federal Highway Administration’s *Price Trend for Federal-Aid Highway Construction* (publication number FHWA-IF-99-001).

⁷³ Primer: GASB 34, p. 34.

meeting one DPW official expressed pointed frustration with the lack of a clear-cut condition assessment procedure.

To get a true assessment of the sewer it is going to cost 200,000 – that’s for the sewer alone. You could do it right and spend that amount of money or you can do a really limited amount of work to make it appear you did a lot of work and not spend much money at all. We could hire a consultant for about \$10,000 and isolate a line here and there, pull a sampling of manholes in the sewer system, and just based upon a sampling write a report on the condition of the sewer system without physically really going in and getting a condition of every single line. Could we make that meet the condition requirements? Probably. To do it right, so that you are really producing some meaningful information that you are going to use, you are going to spend a lot of money. But to do it just to satisfy an accountant you don’t have to spend that kind of money. There is no set way. There are no set guidelines.

However, despite these criticisms DPW officials agreed that due to cost constraints deriving a “transitional” condition assessment would have to suffice for initial implementation of Statement 34.⁷⁴

After incorporating these suggestions and recommendations into the test implementation of the ISDR prototype, a follow-up briefing with the Town was organized. During the briefing many of the most basic functions of the infrastructure management tool were demonstrated. For the first time, senior town officials began discussing several of the anticipated benefits of adopting the infrastructure management tool. Moreover, this visual presentation helped spark a new enthusiasm for assisting the ISDR group complete the remaining informational gaps in the database. The most significant of these gaps included missing information for the Town’s subsurface infrastructure collections. In

particular, data pertaining to the size, type, and installation date of Winchester's water and sewer pipes had not yet been collected. Shortly after the briefing, a wealth of water data was compiled by the DPW water/sewer manager and later submitted to the group. In an effort to help the ISDR group track down data on the Town's sewer system, a system that was initially constructed during the late-1800's, town officials additionally provided the group access to the Town Engineering vault - a "historical archives" of sorts that eventually turned up much of the missing sewer information. With assistance from the head of DPW, the ISDR team developed a replicable condition assessment procedure that was used to estimate the condition of subsurface infrastructure assets. It was agreed that two variables in particular, (1) pipe type and (2) date of installation, would be used to derive a "transitional" conditional assessment value for each subsurface infrastructure system.

Finally, after populating and configuring the prototype infrastructure asset management tool, town officials were provided the opportunity to pilot a beta-version of the management tool on their personal computers. The rationale was that rapid construction of a prototype followed by real-time experimentation and subsequent revisions would provide the most effective implementation strategy. Outside of suggestions made by the roads manager, overall feedback from the town officials was minimal.

⁷⁴ The term "transitional" is used here to signal that as commented by one town official, Winchester may decide in the future that a comprehensive physical inspection of all infrastructure

Chapter 4: The Logic of Statement 34 Implementation

The objective of this final section is to investigate – as evidenced in Winchester, MA – the logic that enters the decision-making process leading up to the choice of how to account for and publicly disclose infrastructure assets. The first branch of the decision tree that governments like Winchester must fill in, involves the fundamental decision of whether or not to comply with the infrastructure reporting requirements contained in Statement 34. As mentioned earlier, the GASB functions under the auspices of the Financial Accounting Foundation, an organization incorporated as a private, non-profit entity. As a consequence, the Governmental Accounting Standards Board has no legislative enforcement mechanism to require state and local governments to comply with its issued accounting standards. Strictly speaking, compliance is voluntary. This said, the Town of Winchester under Massachusetts state law is required to generate their annual financial statement according to GAAP. The Commonwealth’s Department of Revenue, Division of Local Services requires the Town to undergo an audit review each year.

assets would be more useful than a “transitional” value estimated from a sample of inspections.

Legal mandates aside, as mentioned in Chapter 1, the GASB's authority for setting standards for state and local government entities is officially recognized under Rules of Conduct of the American Institute of Certified Public Accountants (AICPA Code of Ethics Rule 203). In their newly revised industry audit guide, the AICPA has announced that government entities not in compliance with Statement 34 infrastructure reporting requirements will receive an "adverse" audit opinion. In the past, Winchester, like most other Massachusetts local governments, received a "qualified" audit opinion for failing to maintain records of the cost of general fixed assets, such as infrastructure. In technical terms, the difference between an a "qualified" and "adverse" audit opinion is as follows:

If the auditor determines that the financial statements are not materially misstated the auditor will issue a "clean" opinion. Alternatively, some deficiency (e.g., a lack of adequate fixed assets records to support the amount of fixed assets reported on the balance sheet) may require an auditor to issue a "qualified" opinion. In extreme cases, auditors may not be able to express an opinion at all ("disclaimer of opinion") or may be compelled to state that the financial statements are not fairly presented ("adverse" opinion).⁷⁵

The prospect of receiving an "adverse" audit opinion, which may adversely impact a town's municipal bond rating, supplies a powerful market incentive to follow GASB Statement 34 reporting requirements. In fact, Winchester is one of just a handful of municipalities in Massachusetts that currently hold AAA bond ratings. This highest of bond rating saves the Town a substantial amount of money in long term bonding costs. While the Town Manager and Town

⁷⁵ Stephen Gauthier, p. 231.

Comptroller are more convinced that an “adverse” opinion would translate into a reduced bond rating, one public works manager expresses skepticism:

Winchester is always going to be a top community, as far as spending goes. There is always going to be a certain percentage of towns that will have a AAA bond rating. We are going to be at the top all the time, because we do spend money. That is not going to change.

Further, there exists too disagreement over the relative utility of complying with the GASB Statement 34 infrastructure reporting provisions. Speaking to the potential impact of Statement 34’s infrastructure requirements, one elected officials states:

I think it has some potential just in terms of raising public awareness perhaps. I think that by being able to actually put it on the page and say this is the value of our infrastructure, this is the value of our buildings, we know that buildings require ongoing maintenance on a regular basis and of course there are major repairs that have to be made.

One DPW employee offers a wholly different view. He asserts:

All this really does, is make a city or town spend more money and time that they don’t really have and can not afford for doing something useless when we could be spending it on making improvements. Seriously, this is a useless exercise.

While the jury may still be out with respect to the financial consequences and “usefulness” of complying with Statement 34, Winchester’s elected officials do not seem interested in testing the uncharted waters. They have full intention of complying with the new accounting regulations. “We know that it is an accounting standard that has to be adopted. We intend to adopt it.”

Winchester’s commitment to comply with the infrastructure provisions of Statement 34, coupled with the test implementation of the ISDR group’s

infrastructure management tool, has, in essence, placed the Town in a position to make a second entry in the decision tree, the choice to either (1) report an annual depreciation expense or (2) account for and disclose what it cost to maintain the Town's infrastructure systems on an annual basis. At this critical juncture, a series of factors are being weighed.

First, there exists the consideration of economics. What are the ensuing costs associated with following each option? The Town Accountant states:

Some of the practical matter is that as budgets get tighter and tighter there is less ability to go "modified", it is a lot easier just to depreciate. You may want to go "modified", but because of budgetary constraints you don't have the manpower to maintain the system [i.e., the asset management system].

These comments seem to deliver the "modified" approach a double punch of sorts. Not only are costs associated with the depreciation approach perceived to be cheaper, they are additionally known. The same cannot be said for the less tested, information technology-dependent, "modified" approach. The Town Manager cautions:

I have no idea what costs are involved in maintaining a system like this; you got to have the software, the people to actually do the work. I would really want to weigh those costs with the benefits.

Performing a cost-benefit analysis entails, at a minimum, estimating both future costs and benefits. But, like costs, the potential benefits of pursuing the modified "approach" – mainly, gains in efficiency – are also largely unknown to town officials. In fact, none of those interviewed mentioned the potential efficiency gains of pursuing the "modified" approach. In light of Winchester's

deficit financial position, the focus was understandably on the anticipated future costs of maintenance. If IT-related productivity gains are not weighed alongside the front-end costs of pursuing the information technology route, the “modified” may be under-valued.

Identifying how these additional IT related costs would be dispersed among the Town’s departments is also a critical matter. One Town Selectmen points out:

I think it is really up to doing a cost-benefit analysis, because you would really have to take a look and evaluate where you are in terms of your staff time because this [the modified approach] is something that would have to be done by the DPW staff.

Despite suffering a 35% reduction in staff since the 1980’s, the head of DPW envisions a relatively easy transition in actually setting up the management system: “A lot of this stuff is what you [the ISDR team] put in. Inventory would be cheap, cheap to the extent that a lot of the work you have already done.” However, maintaining the up keep of the system is a different matter. The head of DPW estimates that tracking all infrastructure expenses might require “as many as five new staff members.”

There exists a second consideration that pertains to the contrast in how Town’s professional engineers and accountants are trained to manage uncertainty. Engineers are trained to render general assumptions more precise by subjecting these assumptions to complicated strings of calculus derived from the laws of physics. Accountants, on the other hand, are trained to handle uncertain future financial flows by making relatively simple assumptions based

on past financial data. Nowhere is this disparity in professional training more evident than in discussions concerning the concept of depreciation. Recall that AASHTO's criticism of the traditional depreciation method stemmed from the belief that depreciation expense was not an accurate proxy for "loss of serviceability". A similar view is put forth by head of DPW:

Most people are going to classify useful life of a utility based upon the design parameters. For pipelines that is basically 30 years assuming the same growth rate. The pipe itself may last for 50 years. I mean that's just in general. You may find that the flows you designed for you meet in year 10 or then again you may never meet them. So how can you calculate an annual depreciation expense? We can depreciate the mechanical stuff, but not the roadways, not curbing, not sidewalks, that you can't depreciate it. I know of concrete sidewalks that were installed in 1910 that look just as good today as when they were first installed. In the same sense, I know concrete sidewalks that were installed last year and you would think that they were installed in 1910.

In fact, each of the three DPW managers interviewed, supported following the more labor-intensive depreciation approach largely because of the imprecision associated with calculating a depreciation charge – a proxy that is especially inaccurate if assets are maintained and preserved so as to extend useful life indefinitely. In fact, the same DPW official that commented on the "uselessness" of Statement 34 goes so far to say, "Actually, it makes sense for every town and community to follow the modified approach." In contrast, a Town Selectmen, who is also a certified public accountant, provides a counter view:

If we can get to a point where one could say - look we know it is a paper number up there for depreciation, but if that is related, and I think it is integrally related to loss of serviceability, then at some point you have to say - wait a minute we have to fund that somehow, otherwise we really are losing the value of our asset.

From the accounting perspective, the most important thing is to get the asset on the books. The idea is that while depreciation may not be a perfect measure of "loss of serviceability", it serves its purpose in demonstrating the life-cycle funding requirements of an asset. Reconciling these disparate professional perceptions surrounding the concept of depreciation may in the end boil down to past maintenance practices. The Assistant Town Manager gets to the heart of the matter, "The key is really whether or not you are maintaining infrastructure assets properly. If you are, then the depreciation approach could work against you."

Third, Winchester town officials are interested in knowing how Statement 34 infrastructure provisions align with current Town operations. Thinking out loud, the Town Manager reasons:

Well, now that we have passed the [Prop 2 ½] override, the override was designed so that we would put aside each year a reserve base on depreciation. It is going to be based on our buildings, streets, and other infrastructure. So in some respects it would almost be better to take the depreciation charge and then just show the reserves we are putting away to offset that depreciation charge.

In other words, it may be more "convenient" for Winchester to calculate a depreciation charge for it overlaps better with existing mandates and operating procedures. On this note, a Town Selectmen adds:

Some of it is going to depend on the availability of funding sources. For water and sewer we can go ahead and set the rates and that is what people pay. We do not have to ask voters. Roads might be a different issue, you see them steadily declining, this [the modified approach] would be a great way to document that.

Such comments imply that it may be optimal for Winchester to pursue a hybrid approach; depreciating enterprise infrastructure systems such as water and sewer, and following the “modified” method for general budget-funded infrastructure systems such as public roadways.⁷⁶ The assumption is that modifying self-financing enterprise accounts would not trigger as difficult a battle in Town Meeting as if monies were requested to repair roadways –an infrastructure system that has no self-financing mechanism.⁷⁷ Hence, a detailed demonstration of capital needs that could be supplied via the “modified approach may only make sense for roadways. At least, this is the rationale put forth by one Town Selectmen. In this light, accounting and financial reporting practices may be driven by the availability of existing funding sources.

A fourth point that is on the minds of town officials concerns the inquiry, How much is our Town worth and what does that mean? Under the rules of Statement 34 the total historical cost of a Town’s capital assets (including infrastructure assets) is to be reported net of accumulated depreciation in the financial report. However, as mentioned throughout this paper, infrastructure assets reported using the modified approach do not have to be depreciated. As a consequence, Winchester’s infrastructure asset base may be reported with considerable variation depending largely upon how it chooses to account for

⁷⁶ Statement 34 permits public entities to use different approaches (depreciation or “modified”) for different asset groups (roads, water, etc.). Entities can even use different approaches on the same asset group (primary roads, secondary roads, etc.)

⁷⁷ Winchester relies almost exclusively upon Chapter 90 allocations to manage its roadways. Massachusetts General Law, Chapter 90, Section 34, provides funding to municipalities to maintain, repair, improve, and construct town and county ways.

infrastructure. Moreover, as indicated earlier by one GASB staff member, infrastructure assets typically comprise a significant portion of a town's overall asset base. The Town of Winchester is no exception. Hence, the manner in which Winchester decides to account for infrastructure will have important implications for its total net asset value (Assets - Liabilities), and change in net value (Beginning Net Assets – Ending Net Assets) in subsequent years. While there is a variety of ways to potentially game the system, there does not yet exist a clear indication of what the implications of those decisions might be. As one town official highlights, "It's hard to say, because at least in the past bond rating agencies have not really looked at that [net asset value], it is sort of an unknown."

Finally, there exists the issue of public disclosure, the understanding that how Winchester chooses to "account for" its assets ultimately will determine the manner in which it "reports to" constituents, creditors, investors, and oversight authorities. Mainly through recent innovations in information technology, the Town Winchester has a new option of disclosing detailed information on the state of its infrastructure holdings. According to Statement 34, governments that opt to pursue the information technology-driven "modified" approach must present the following additional disclosures items:⁷⁸

- The assessed condition from the three most recent condition assessments
- Annual maintenance and preservation cost, both estimated and actual, for the past five years

- The basis and scale for the condition measurement
- The condition level established by the government as acceptable
- Factors that significantly affect trends in the assessed condition and annual maintenance and preservation costs

This may be illustrated in the financial statement as follows:

REQUIRED SUPPLEMENTARY INFORMATION FOR GOVERNMENTS USING THE MODIFIED APPROACH

Condition Rating of the City's Street System

	Percentage of Lane Miles in Good or Better Condition		
	2002	2001	2000
Main arterial	93.2%	91.3%	90.0%
Arterial	88.2%	81.6%	84.3%
Secondary	87.2%	84.5%	86.8%
Overall system	87.8%	86.5%	87.3%

	Percentage of Lane Miles in Substandard Condition		
	2002	2001	2000
Main arterial	1.7%	2.6%	3.1%
Arterial	3.6%	6.4%	5.9%
Secondary	2.1%	3.4%	3.8%
Overall system	2.2%	3.6%	3.9%

Comparison of Needed-to-Actual Maintenance/Preservation (in Thousands)

	2002	2001	2000	1999	1998
Main arterial:					
Needed	\$ 2,476	\$ 2,382	\$ 2,538	\$ 2,401	\$ 2,145
Actual	2,601	2,552	2,432	2,279	2,271
Arterial:					
Needed	1,485	1,905	1,535	1,441	1,287
Actual	1,560	1,331	1,459	1,367	1,362
Secondary:					
Needed	990	937	1,023	960	858
Actual	1,000	1,021	972	911	906
Overall system:					
Needed	4,961	4,604	5,116	4,802	4,290
Actual	5,201	5,104	4,863	4,557	4,541
Difference:	250	420	(253)	(245)	251

Source: U.S. Department of Transportation: Office of Asset Management,
Primer: GASB 34, November 2000.

⁷⁸ Statement No. 34, p. 47.

Alternatively, government entities that choose to depreciate their infrastructure assets are required to report depreciation expense as a direct expense of the function (for example, public works or board of education) responsible for maintaining those assets.⁷⁹ In graphical terms, this would mean the following:

CAPITAL ASSETS NOTE DISCLOSURES

Note 1—Illustrative Disclosure of Information about Capital Assets

Capital asset activity for the year ended December 31, 2002 was as follow (in thousands):

	Primary Government			Ending Balance
	Beginning Balance	Additions	Retirements	
Governmental activities:				
Land	\$ 29,484	\$ 2,020	\$ (4,358)	\$ 27,146
Buildings and improvements	40,661	334	-	41,195
Equipment	32,110	1,544	(1,514)	32,140
Infrastructure	94,535	13,220	-	107,755
Totals at historical cost	<u>197,030</u>	<u>17,118</u>	<u>(5,872)</u>	<u>208,276</u>
less accumulated depreciation for:				
Buildings and improvements	(10,358)	(681)	-	(11,039)
Equipment	(9,247)	(2,578)	1,040	(10,885)
Infrastructure	(15,320)	(1,020)	-	(16,340)
Total accumulated depreciation for:	<u>(34,925)</u>	<u>(4,279)</u>	<u>1,040</u>	<u>(38,164)</u>
Governmental activities capital assets, net	<u>\$ 162,105</u>	<u>\$ 12,839</u>	<u>\$ (4,832)</u>	<u>\$ 170,112</u>
Business-type activities:				
Land	\$ 3,691	\$ 145	\$ -	\$ 3,836
Distribution and collection systems	36,977	2,327	-	39,304
Buildings and equipment	126,330	7,827	(52)	129,165
Totals at historical cost	<u>167,038</u>	<u>10,299</u>	<u>(52)</u>	<u>177,385</u>
less accumulated depreciation for:				
Distribution and collection systems	(7,654)	(287)	-	(7,941)
Buildings and equipment	(11,283)	(208)	32	(11,559)
Business-type activities capital assets, net	<u>\$ 147,995</u>	<u>\$ 9,794</u>	<u>\$ 32</u>	<u>\$ 157,829</u>

*Depreciation expense was charged to governmental functions as follows:

General government	\$ 275
Public safety	330
Public works, which includes the depreciation of general infrastructure assets	1,315
Health and sanitation	625
Cemetery	29
Culture and recreation	66
Community development	40
In addition, depreciation on capital assets held by the City's internal service funds (see D-3) is charged to the various functions based on their usage of the assets	<u>1,708</u>
Total depreciation expense:	<u>\$ 4,387</u>

Source: U.S. Department of Transportation: Office of Asset Management, Primer: GASB 34, November 2000.

All of those interviewed perceived the additional disclosure requirement under the “modified” approach - to put it in accounting terms - as both a potential asset and liability. Several officials expressed that disclosing more detailed information on annual maintenance costs and the corresponding impact of those costs on asset condition could potentially help persuade the Town Meeting to allocate more resources toward capital maintenance and improvements. For instance, one popular response was that “buildings don’t speak, they don’t get up in front of Town Meeting, like school parents do, and say ‘wait a minute, we have to fund the education budget.’” The output of the asset management system could therefore potentially serve as the “voice” of infrastructure. However, the flip side, as noted by the Town Manager, is that “if you run a string of negative numbers that don’t show good [asset] condition, at some point that could mean a [bond rating] downgrade.” Thus, in Winchester, the additional disclosure requirement of the “modified” approach is perceived as nothing less than a double-edged sword - a weapon that has the potential to serve as the “voice” of infrastructure, but also to shatter municipal investor confidence. Finally, the “modified” approach’s more detailed disclosure requirement has little to do with improvements in accuracy. The output of an asset management system is only as good as the assumptions that go into that system. For instance, recall that while developing the infrastructure management tool, the ISDR group was forced to balance tradeoffs concerning detail and ease of use. These assumptions, in turn, impact the accuracy of output generated from

⁷⁹ Statement No. 34, p. 19.

running queries in the database. As one town official notes, the output of either approach could “be Arthur Anderson numbers.”

As noted, Winchester has until 2006 to weigh the tradeoffs associated with each of the decision factors outlined above. How Winchester in due course chooses to complete the second branch of the decision tree may depend on how the Town reconciles the conflicts surrounding (1) IT-related uncertainty, (2) professional bias, (3) operational convenience, (4) net asset value interpretation, and (5) public disclosure implications. While these five factors currently represent the gamut of concerns identified by Winchester Town officials, it is important to note that the intuition guiding this decision-making process today may not be true for tomorrow. Indeed, the Town Manager raises perhaps the most appropriate question of all: “What are other communities planning on doing?” Over time, the answer to this question may fundamentally reshape the logic that goes into choosing how to account for and report the Town’s infrastructure asset collections.

Conclusion

Following nearly fourteen years of public hearings, deliberation, and research, on June 30th 1999, the GASB formally announced its new framework for state and local government financial statements with the issuance of Statement 34 – an event that marked “the most significant change in the history of governmental accounting.” (GASB Chairman Tom Allen) The publication of GASB Statement 34 broadened the concept of “accountability” and thereby initiated a series of accounting reforms that borrow heavily from those recommendations advocated during the late 1970’s by the economic resources measurement focus, commercial-type, accounting camp. The shift from measuring short-term financial flows to tracking long-term economic flows necessitates that governments capture the full cost of providing public services, which includes the cost of using infrastructure assets each year. Recent advances in asset management technologies combined with the GASB’s particular need to broker an acceptable deal among a diverse group of stakeholders, paved the road for the allowance of two ways to account for the annual loss of serviceability of infrastructure assets. On the one hand, governmental entities have the option to report an annual depreciation expense based on the remaining useful life of their infrastructure assets (i.e., the depreciation method). And on the other hand, governmental units may choose to manage their infrastructure collections using an information technology-

driven, asset management system and report what it costs to preserve assets at a condition level established and disclosed by the government (the "modified" method).

That said, in order for a local municipality, such as Winchester, to place itself in a position to choose between these two proxies for the "cost of using infrastructure" it must first acquire the technological capacity (i.e., an asset management system) to pursue the "modified" approach as a viable option. While there exists a variety of information technologies that could potentially satisfy the asset management functionality requirements of Statement 34, a cursory look into the current management practices of the Town points to the overriding need of simplification. The virtues associated with simplifying "out of the box" software applications are numerous. Simplification provides users with a more "user friendly" and cost-effective means of accessing, retrieving, maintaining, and analyzing information. It can also help facilitate interdepartmental coordination. Consequently, there too exist certain tradeoffs that arise from the decision to render software applications more "user friendly". In the case of the ISDR team's test implementation of the Winchester prototype tool, these limitations included reduced precision and accuracy of outputted data. The implications of these tradeoffs are that governments and those who monitor governments may receive more detailed answers to their user questions. However, the quality of these answers will only be as good as the design assumptions that underlying the customization of the tool.

Through their willingness to collaborate with the ISDR group at MIT, Winchester appointed officials have placed their Town in a position to follow the “modified” approach to satisfy the infrastructure reporting provisions of Statement 34. Yet, the acquisition of this new asset management capacity is merely the first phase in a rather intricate decision-making process. At the end of the day, decision makers will have to weigh a rich set of alternatives that include questions related to (1) IT-related uncertainty, (2) professional bias, (3) operational convenience, (4) net asset value interpretation, and (5) public disclosure implications. Furthermore, as more municipalities begin implementing the infrastructure provisions contained in Statement 34, the pressure of being benchmarked against neighboring communities may fundamentally reshape the intuition guiding this decision-making game.

If the history of governmental accounting reform in the United States is any indication of how Winchester will choose to comply with the infrastructure provisions of GASB Statement 34, the author predicts that, at least initially, The Town will choose to follow the traditional depreciation approach. History has shown that the content of the governmental financial statement has not typically kept pace with the changing information demands of financial statement users. While both the demand for more detailed infrastructure information and the technological capacity to meet that demand may currently exist, barriers to implementing new information technology initiatives in the local government setting pose significant hurdles for the “modified” approach. Ironically, the most

outspoken supporters of the “modified” approach in Winchester are those who would be taxed with maintaining the ISDR infrastructure asset management tool. Thus, the chances of going “modified” may be a function of the degree to which public works officials are involved in setting government-wide accounting policies. If by chance the implementation decision falls on the shoulders of the Department of Public Works then the town will not depreciate its infrastructure assets. In this light, who the decision-makers consist of will have an important bearing on the outcome on Winchester’s Statement 34 implementation process.

Perhaps the only certainty is that over time the struggle between technology and politics in the governmental financial reporting circle will persist. As the cost of obtaining information continues to fall, the demands for more “public” information will surely only build momentum. In order to satisfy GASB Statement 34 state and local governments, sooner or later, will have to weigh in on the pros and cons of adopting new technologies that facilitate the disclosure of more information. These government decision-makers would be wise to keep in mind that Statement 34 is but one of many drivers for new and more detailed information. To not, at least, equip themselves (via the adoption of asset management systems) with the technological means to disclose those details demanded by the monitoring public if so chosen down the road, may be, to put it most bluntly, irresponsible at this point in time.

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Appendix I: Organizational Structure of the GASB:⁸⁰

The current organizational structure of the GASB closely parallels the terms chartered under the 1984 agreement. The GASB functions under the auspices of the Financial Accounting Foundation (FAF). The FAF is responsible for funding, overseeing and selecting the members of both the Governmental Accounting Standards Board (GASB) and its sister organization for private enterprise, the Financial Accounting Standards Board (FASB). Responsibility for nominating the eleven members of FAF's Board of Trustees resides with eight sponsoring organizations.⁸¹ These sponsors include:

American Accounting Association
American Institute of Certified Public Accountants
Association for Investment Management and Research
Financial Executives Institute
Government Finance Officers Association (formerly the MFOA)
Institute of Management Accountants
National Association of State Auditors, Comptrollers and Treasurers
Securities Industry Association

The GASB is composed of a full-time chairman and six part-time board members. Each appointed member serves a five-year term, but may be appointed for an additional year. In addition, the GASB is served by a full-time Director of Research and part-time Assistant Director of Research. The FAF also exercises oversight in the selection of members of the GASB Advisory Council – a council comprised of 25 members who are broadly representative of preparers,

⁸⁰ Provided here, is a brief description of the GASB as documented in the following GASB information sources: (1) Governmental Accounting Standards Board, *FACTS about GASB* (Norwalk, CT: GASB, 2001). (2) The official GASB website, <http://accounting.rutgers.edu/raw/gasb/index.html>

attestors, and users of financial information. The Advisory Council consults with the GASB in regards to technical issues on the Board's agenda, project priorities, and other matters requested by the GASB or its chairman. The council is also responsible for helping to develop the GASB's annual budget and aiding the FAF in raising funds for the Board. Financial support is generated from both public and private sources, including: state and local governments, public accounting firms, municipal securities industry investors and creditors, and private practitioners.

⁸¹ There are trustees-at-large not nominated by the above listed organizations.