



# State of North Carolina

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### Memorandum #934

May 4, 2001

TO: Officials of Local Governments and Certified Public Accounts

FROM: T. Vance Holloman, Director  
Fiscal Management Section

SUBJECT: GASB Statement 34 - Issues related to Infrastructure and Capital Assets

The reporting of capital assets and infrastructure, long-lived capital assets such as roads, bridges, dams, etc., is one of the most significant changes in the new reporting model under GASB Statement 34. The challenge occurs in collecting the data required to record the infrastructure that may never have been recorded in the General Fixed Asset Account Group (GFAAG). The statement allows the selection of numerous options in the capitalization and reporting of capital assets such that decisions must be made early in the planning process to prepare for implementation. Depending on which options are chosen, the effort to implement GASB 34 could be very time consuming.

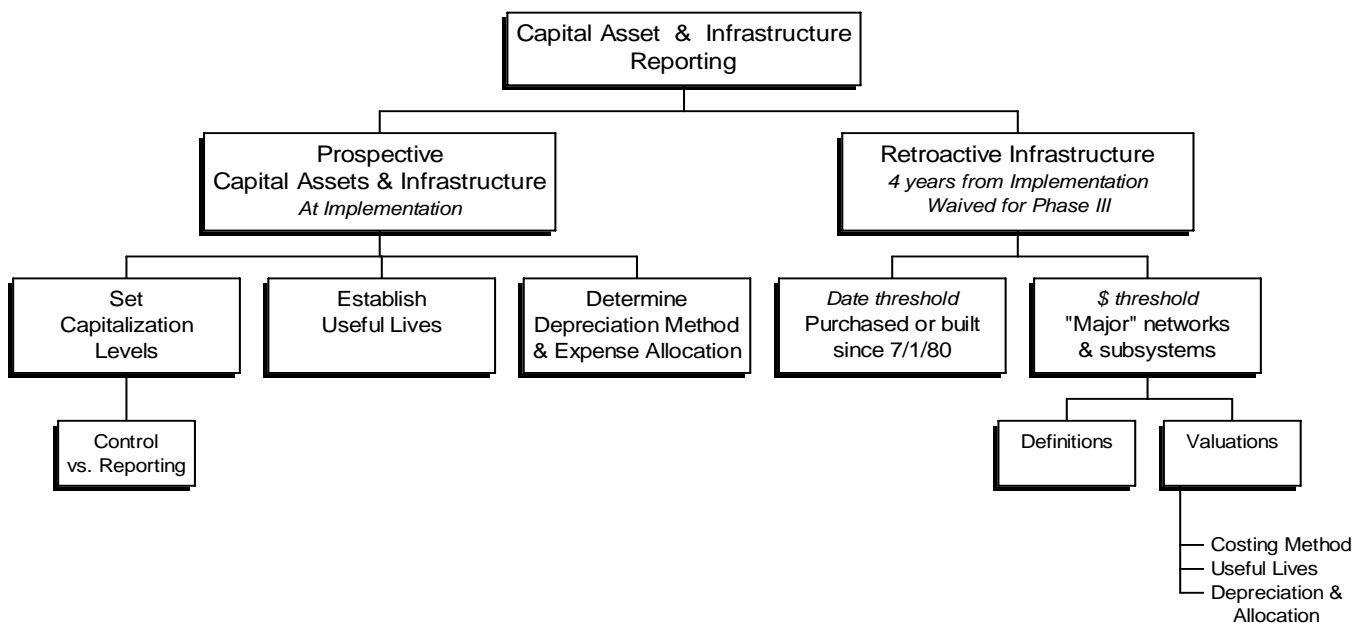
We recommend that you immediately begin to determine your strategies for recording capital assets and infrastructure. **Where the statement provides multiple options, we also strongly suggest that the simplest and least labor-intensive option be selected.** This memo addresses the options allowed under Statement 34 for recording general capital assets and infrastructure, suggests some approaches to simplify the effort required, and provides some helpful resources. Proprietary funds should already be reporting capital assets and infrastructure. Any capital items currently missing in proprietary funds (e.g. land) should be immediately reported in the unit's financial records and reports.

Generally, units must capitalize infrastructure and capital assets under the new reporting model; all such assets will be depreciated except for those considered to be inexhaustible, (e.g. land, construction in progress,) or those being maintained under the modified method (*to be discussed later in the memo.*) These assets will be reported on the Government-wide statements. The Statement of Net Assets, much like a full accrual balance sheet, will report the assets net of accumulated depreciation. The equity section of the Statement of Net Assets, referred to as the Net Assets section, will report investment in capital assets net of related debt. The Statement of Activities, a full accrual operating statement, will report depreciation expense by function, or separately if not allocated to various functions.

Purchased assets will be recorded at historical cost plus ancillary cost, such as freight, legal fees, site preparation, etc. Estimated historical cost can be used for infrastructure. Donated assets will be recorded at estimated fair value at the time of acquisition plus ancillary charges. The statement does not require all infrastructure to be reported at the implementation date. Provisions have been given to allow local governments with Phase I and II implementations up to four years from their initial reporting date to record their retroactive infrastructure. Statement 34 waives the requirement of retroactive reporting for the Phase III governments. Note that many of the Phase I and II local governments are considering recording their retroactive infrastructure at implementation, or earlier than the fourth year, in order to avoid negative net assets on the Statement of Net Assets where investment in capital assets is reported net of debt.

As previously discussed in Memo #928, there is a phased implementation for GASB Statement 34. Units of local government are required to implement the new reporting model no later than the date specified in a prescribed schedule that was based on revenues reported for the fiscal year ending after June 15, 1999 (*typically June 30, 1999.*) See Memo #928 for a complete discussion of the three different implementation phases and the phase listing by unit type. Prospective reporting requirements demand that all capital assets and any infrastructure constructed, acquired, or improved in the year the new model is implemented must be reported in the financial statements for that year and each subsequent year thereafter. Retroactive reporting requirements apply only to the recording of previously acquired or constructed general capital infrastructure. These exceptions do not apply to capital assets of business-type activities; these capital assets should already be reported. The variation in requirements for prospective and retroactive reporting gives rise to the myriad of options that the Statement allows.<sup>1</sup>

### Overview of Capital Assets & Infrastructure Issues



## Prospective Reporting Issues

### Capital Asset Definition and Setting Capitalization Levels:

Since the new reporting model under GASB Statement 34 requires the reporting of all capital assets and their respective depreciation expenses, it becomes prudent to re-evaluate the definition of capital assets and reduce the number of small dollar items carried in the accounting system. Units will have to determine the useful life and calculate annual depreciation expense for each small dollar item that is capitalized; as well as calculate the accumulated depreciation for all capital assets reported at implementation. Prior to the implementation of Statement 34, these low cost items were not depreciated and capitalizing the item for financial reporting served as a convenient way to practice management control over the asset. The general fixed asset account group ledger served as a list of assets for insurance and for taking an annual inventory. With the annual depreciation requirements of Statement 34 coming into effect, capitalization of small dollar items for financial reporting is not an efficient way to control these items. Raising capitalization levels allows the departments to control low cost,

<sup>1</sup> The data presented in the flowchart is a summary of Statement 34’s criteria based on a typical government unit. The “Date Threshold” above reflects the date for an average unit with a June 30<sup>th</sup> year-end. Units having a fiscal year-end other than June 30<sup>th</sup> will need to determine the proper date per the Statement’s guidelines based on assets “acquired...in fiscal years ending after June 30,1980.”

sensitive items and leaves the finance staff free to manage the high dollar items that are more material to the unit's financial reports.

Capital assets are defined as tangible and intangible assets used in operations with useful lives longer than one reporting period and a minimum cost based on approved capitalization levels. The statement allows for the use of multiple thresholds such that different levels could be set for different classes of assets; for example \$5,000 could be used for equipment; \$20,000 for buildings; and \$100,000 or higher could be set for infrastructure. Items costing less than the capitalization level would be expensed for the government-wide and the proprietary fund statements. The Federal Government has recently raised its minimum capitalization levels to \$5,000 for equipment purchased with federal awards. The Government Finance Officers Association (GFOA) has also recommended a \$5,000 level. The Local Government Commission suggests that units consider raising their capitalization levels for equipment to \$5,000. Even the smallest of units should consider raising the level at which they capitalize and depreciate equipment. Every unit should check to see that their capitalization threshold allows a material amount of assets to be recorded while avoiding the burden of recording too many small items.

The procedure of accounting for assets versus controlling assets is not the same and may need to be separated such that the finance office is not encumbered by excessive and costly detail. Asset control should be handled at the department level while financial reporting and depreciation should be handled in finance. Raising capitalization thresholds does not prevent the use of strong internal control mechanisms to adequately control and safeguard assets. Sensitive or controllable items costing less than the capitalization threshold such as weapons, chain saws, weed eaters, etc. should be controlled by the department heads. A master list of controllable items should be developed in order to determine what lists/inventories the departments should be maintaining. An inventory of these items should be taken at least annually to ensure control over these assets.

If board approval is required, these issues should be presented early in the process such that capitalization levels can be raised, control procedures can be put in place, and the capital asset system can be adjusted to accurately report the unit's inventory. For financial reporting purposes, items less than the new capitalization level should be removed from the current inventory so that their respective accumulated depreciation does not have to be calculated.

**Establishing Useful Lives:**

Since Statement 34 requires that assets be depreciated, the next issue in addressing capital assets is to establish their useful lives. Statement 34 did not set useful lives; they left it to the unit's judgment based on experience and the various factors of age, use, present condition, maintenance, technology demands, etc. Some units may already have specified useful lives for all assets; others may need to set them for the implementation of the new reporting model. There are many sources including general guidelines from professional organizations or industry, comparable governments, or data from the unit's engineering staff. Some possible choices have been listed below; these are just suggestions and are not presented as the best or only source.

Item	Useful lives
Buildings	50 years
Improvements	10-25 years
Furnishings and fixtures	10 years
Automobiles	6 years
Equipment (non-computer)	5-10 years
Computer Equipment	3 years
Software	3 years
Library Books (if capitalized)	5-7 years

Experience must be applied to any list, for example, if automobiles only last four years in the unit, then management should adjust accordingly. Setting useful lives is ultimately a management decision that must be

reasonably based such that the auditors can review the unit's rationale. Useful life is an integral factor in the formula for computing depreciation; the decisions made in selecting useful lives will have a major influence in the final figures for annual depreciation expense.

### **Modified Approach:**

Statement 34 established the modified approach for reporting infrastructure assets. It is an alternative to the depreciation of assets for governments with very stringent asset management systems in place. To meet the criteria for the modified approach, the infrastructure must be managed using an asset management system that 1) has a current inventory, 2) performs condition assessments using a measurement scale, and 3) estimates annually the amount to maintain and preserve the assets at the established and disclosed level. The government must document that assets are being maintained at or above the condition specified in step (3). Under the modified approach, the original cost plus additions and improvements are capitalized. Depreciation is not recorded; cost for maintenance and preservation are expensed in the period incurred. If the condition level falls below that specified or other criteria are not met, the unit must revert to using depreciation. This option would be appealing to large governments with very complex capital asset management systems in place.

This office is aware of no government in North Carolina, including the State of North Carolina, which is planning to use this option. We are also concerned that use of this alternative, with the possibility of reverting to depreciation if certain maintenance standards are not met, would damage comparability of financial statements between units and between years for the same unit. Until the AICPA issues the updated Audit Guide for State and Local Governments, we are not certain that an audit of a unit choosing the modified approach can be conducted under generally accepted auditing standards, as required by the Local Government Budget and Fiscal Control Act. More guidance on the modified approach will be issued in the future. For now, all units should gather cost and useful life data about their capital assets in preparation to use the depreciation method

### **Functional Allocation of Depreciation Expense:**

Although local governments may choose any depreciation method from all the possible variations, straight-line depreciation is the simplest method and the method chosen to date by most governments. Units must be able to relate assets to specific functions or programs. When assets are depreciated, Statement 34 requires that depreciation expense which can be specifically identified with a function or program should be reported as a direct expense of that function or program on the Statement of Activities (e.g. depreciation of police cars should be reported in public safety.)

“Shared” capital assets, generally used by only a few functions, (e.g. a building that houses the police department and building inspection office), should have their depreciation expense ratably allocated to the appropriate functions based on an objective measurement such as square footage or mileage. Assets that serve “essentially all” functions (e.g. city hall) are not required to be included in the direct expenses of those many functions. Rather, depreciation expense for shared assets can be reported on the Statement of Activities as:

- 1) A separate line, (e.g. “unallocated depreciation”),
- 2) Included as part of the “general government” function; or
- 3) Included in the indirect expense allocation to the various functions.

Depreciation expense for general infrastructure should be reported as a direct expense of the function that is normally used for maintenance of these assets and where capital outlays are recorded (e.g. most infrastructure will be in the highway or transportation function,) or on a separate line entitled either “unallocated depreciation” or “depreciation expense” with a notation that this amount does not include depreciation that is reported in the direct expenses of other programs. The challenge will be that as these general assets are set up in the capital asset system, units will need to assign a department or function in order to facilitate the allocation of depreciation expense for the government-wide statements.

### **Capital Cost versus Repairs and Maintenance Expense:**

In addition to addressing the previous issues of capitalization levels, useful lives, and depreciation methods and expense allocation, “future benefit” will also have to be evaluated for post-acquisition outlays related to the continued use of an asset. The decision must be made whether to classify these amounts, made after the initial acquisition of a capital asset, as a capital cost or to classify them as a repairs and maintenance expense. If the cost is recurring and does not extend the useful life or enhance capacity, then the cost would be considered to be maintenance and expensed (e.g. putting a new roof on an existing building, rebuilding a transmission). If the cost adds value or capacity to an asset or extends the useful life such as adding lanes to a section of highway, or adding a new wing to a building, then it would be capitalized.

The difficulty arises in evaluating “future benefit.” Resurfacing roads is a prime example where units may have to make a judgment call on a case-by-case basis. There are times when resurfacing will be a maintenance expense designed to sustain the usefulness of the asset. There are other times when resurfacing may be capitalized because value has been added or useful life extended (e.g. when the top layer of asphalt is ground and then the road is resurfaced.) As a practical matter, the distinction between capital outlay and repairs and maintenance is not clear-cut; some decisions will be easier than others. It may be helpful to set guidelines or policy before implementation regarding the definition of “future benefit” and what constitutes a capital outlay versus a maintenance expense.

### **Other Capital Assets:**

It should also be noted that works of art, historical treasures, and library books could be considered to be depreciable assets and recorded at historical cost for purchased items and fair value for donated items. Works of art and historical treasures that were capitalized at 6/30/99 should continue to be capitalized, including any new additions. For those not recorded at 6/30/99, the Statement provides an option not to capitalize if:

- 1) The collection is held for public exhibition, research, service, etc. rather than financial gain;
- 2) It is protected, kept unencumbered, cared for, and preserved;
- 3) Receipts from sales of items in the collection are used to purchase more items for the collection.

If the criteria listed above are not met, then the collection or item must be capitalized.

Library books may or may not be a capital asset. Decisions on capitalization level, useful life, and materiality become a factor. National practice for school systems is to capitalize library books when a new school is being built (and stocked) but to expense library books purchased incrementally. The National Association of School Business Officers recommends a useful life of 5-7 years, if library books are to be capitalized. The final determination is a management decision. Since library collections consist of a large volume of books purchased over time, the composite depreciation methods may be the best choice when books are capitalized. See the discussion of composite methods under the Retroactive section and see examples in Appendix C.

There is much work to be done for some units to be ready to record their infrastructure. Starting early to begin tasks and address the issues will give units more time to handle any surprises and still meet their respective implementation dates. To begin the process, consider the following steps:<sup>2</sup>

Steps to Record Retroactive Infrastructure
1. Identify your infrastructure acquired since 7/1/80.
2. Define networks and subsystems.
3. Determine 10% and 5% levels of the 6/30/99 GFAAG balance.
4. Identify what cost data exists.
5. Decide if estimates will be simpler than historical cost.
6. Value networks & subsystems.
7. Identify those that qualify as "major" infrastructure - ( <i>network &gt; 10%, subsystems &gt; 5%</i> )
8. Record retroactive infrastructure ( <i>meeting criteria in #7 above.</i> )
9. Calculate accumulated depreciation.

Steps 3 – 7 in the task list are iterative and can be repeated if networks or subsystems need to be redefined or costing methods need to be changed.

### Options for Date and Dollar Thresholds:

Statement 34 does not require units to cost and record their entire inventory of retroactive general infrastructure. It allows units to make choices regarding how much to record, based on a date and a dollar threshold, which help to reduce the effort required in recording retroactive infrastructure. The date threshold provides units the option to go back only to the fiscal year ending after June 30, 1980 (*typically July 1, 1980*) to pick up infrastructure; i.e. only post-1980 general infrastructure must be considered. The dollar threshold provides the option to record only those assets classified as “major” networks or subsystems. Identifying assets purchased, acquired or constructed since the beginning of fiscal year 1980-81 should not be too difficult. Defining and valuing networks and subsystems could require more effort and a considerable amount of deliberation.

### Definitions of Networks and Subsystems:

A network is a grouping of assets such that all assets included provide a specific type of service; it may be composed of many components. A subsystem of a network includes all assets that make a similar portion or segment of a network. The final determinations are up to the unit based on what works best; examples might be a network for a streets system with arterial streets and residential streets as subsystems; or the streets and bridges could be defined as a transportation network with the streets divided into geographic regions (the northern quadrant) defined as subsystems – each subsystem would include the roadbed, curbing, guttering, sidewalks, signs, streetlights, traffic control devices, etc. for that geographic area. Other examples might be a network for a storm sewer system with catch basins, storm drains, and inlets as subsystems or a dam could be a network composed of a concrete dam, concrete spillway, and a series of locks. A unit may decide just to group assets by category, as in all streetlights, or all bridges. In deciding how to group retroactive infrastructure, look at how you will group and manage it for future improvements or additions. Most likely, retroactive infrastructure will be easier to manage if it is grouped similarly to plans for improvements and additions.

Rather than waiting until every network and subsystem is defined and valued, Statement 34 allows networks and subsystems to be recorded as they are defined. This option will allow units to record assets for financial reporting throughout the transition period (4 years between implementation and retroactive infrastructure required date.)

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<sup>2</sup> The list of tasks is presented for a typical unit of government with a June 30<sup>th</sup> year-end. For units with different year-ends, the date criteria in step #1 above should be based on assets “acquired...in fiscal years ending after 6/30/80.”

Note disclosure is required to indicate partial implementation. A government may account for its assets in groupings that best suit its needs, capitalizing some assets at the network and others at the subsystem or individual level, and recording them when defined if they meet the criteria for “Major” infrastructure.

### **Determining “Major” Infrastructure:**

Cost may also be a factor in deciding how to group assets. The dollar threshold previously mentioned allows units to record only “major” infrastructure. Statement 34 defines a “major” network as one that cost at least 10% of the total costs for all general assets reported in the first year ending after 6/15/99. “Major” subsystems are defined as those subsystems costing 5% of the total costs for all general assets reported in the first year ending after 6/15/99. This basically means that units only have to record networks that are at least 10% and subsystems that are 5% of the balance in the General Fixed Assets Account Group (GFAAG) at 6/30/99. (For computation, the general capital assets balance does not include fiduciary or proprietary assets, or the infrastructure to be added back. The calculation may be done using either historical cost or net book value.)

More narrow definitions of networks and subsystems will allow fewer networks and subsystems to meet the criteria and have to be recorded. Definitions of networks and subsystems for retroactive infrastructure may also be influenced by plans for prospectively accounting for and reporting improvements or additions to infrastructure. Unless a unit already has all infrastructure recorded in their capital asset system, the LGC suggests that units take advantage of the date and dollar threshold options by recording only post-1980 infrastructure that meets the criteria as “major” general infrastructure.

### **Options for the Valuation of Infrastructure:**

If infrastructure has not been previously recorded in the GFAAG, the challenge is how to determine the cost of assets built over the last 25 years. Statement 34 allows for options in the valuation process permitting the following methods to be used:

- 1) Historical project cost if actual cost incurred is available.
- 2) Estimated historical cost based on ...
  - a. Current replacement cost adjusted with deflators back to the construction/purchase date.
  - b. Cost documentation from bond documents, capital project files, board minutes, previous financial statements, engineering or grant files.

The Statement allows for the use of indices to deflate the assets back to purchase/construction date. There is no specific recommendation for which index to use but the choice should be reasonable and relevant. For example the *Price Trends for Federal-aid Highway Construction* might work well for streets and roads, while the *Construction Cost Index* might work better for other assets. (See Appendix A.) Once cost is determined, accumulated depreciation must also be calculated. As the most used and easiest method, the LGC recommends using the straight-line depreciation method for computing accumulated depreciation.

Cost data can also be found in various historical documents related to the project as it was being constructed. For example, bond documents may indicate the projected cost for a construction project including contract bids and engineering estimates. Capital project files, grant files, board minutes or engineering records may also have construction details. Previous financial statements may report capital project funds showing the final cost for a completed project. As mentioned earlier, the objective is to minimize the effort required to value assets, determine what is required to be recorded (“major” networks & subsystems), compute accumulated depreciation, record the qualifying assets into the capital asset system, and record for reporting purposes. Choose the estimated cost approach if that is easier for the unit. (See Appendix B, Exhibit I for examples of calculating estimated historical replacement cost and Exhibit II for determining major infrastructure.) Be aware that auditors will review how replacement cost was derived and how it was trended back. Be prepared to support your reasoning.

### **Donations and Annexed Assets:**

Units have often received infrastructure assets from developers or as a result of annexation. These assets are viewed as donated on the date received from the developer or as of the date of annexation. Note that donated or annexed infrastructure would only be recorded if the unit has legal title and has responsibility for maintenance. The cost of these assets will be estimated fair value at the date of acquisition plus ancillary charges. Fair value is the amount willing parties would exchange for the asset other than at forced liquidation. Units may determine the fair value as of the acquisition date by determining current replacement cost and adjusting that cost with deflators back to the calendar year of donation. Other methods of determining reasonable estimates can also be used if they can be properly substantiated. The developer or other party's cost is irrelevant when valuing donations of infrastructure.

### **Calculating Accumulated Depreciation:**

As previously discussed, straight line is the depreciation method being used by most units although other methods can be chosen. The complications arise when the assets have been built over a number of years as in the lane miles in a road system. Statement 34 allows the use of composite methods for computing useful life and depreciation, which may work well for costing retroactive infrastructure. The composite method allows assets to be combined based on similarity (e.g. fleet of vehicles) or dissimilar items used in operations as an integrated unit (e.g. road network.) When the composite method is used, the accumulated depreciation relates to the integrated asset as a whole rather than to any specific asset in the group. At disposal, no gain or loss is recognized when using the composite method. Any proceeds received upon the asset's removal serve to reduce the amount that would otherwise be charged to accumulated depreciation. (See Appendix C, Exhibit I-IV for examples of calculating weighted and un-weighted average life and the corresponding straight-line depreciation using the composite method.)

### **Land:**

It should also be noted that all land, including that upon which the infrastructure rests, must be recorded as previously required by NCGA Statement 1. As an inexhaustible asset, land will not be depreciated. Historical records may exist if land was purchased. Estimated cost can be used if historical cost is not available. Estimated fair value at date of acquisition should be used for donated property. Land in right-of-ways can be derived by determining the average width of right-of-way multiplied by number of miles. That amount can be converted to acres and allocated by generation (total acreage acquired in a given year.) Cost for all land acquired in a generation can be estimated using indices.

### **Conclusion:**

Since recording infrastructure and fine-tuning capital asset procedures may be the biggest challenge of implementing GASB Statement 34, the LGC encourages units to begin early to address these issues. Typically, units should choose the methods and options Statement 34 allows for making implementation easier, particularly as it applies to the recording of capital assets and infrastructure.

Phase III units should accept the waiver and record no retroactive infrastructure unless the unit feels that the benefits of the additional effort will outweigh the cost. Units implementing in Phase I or II should record only "major" general infrastructure acquired since fiscal year 1980-81, unless it is much easier to go back to an earlier date.

Networks and subsystems can be defined narrowly (within reason) to allow less of the retroactive infrastructure to qualify for reporting. The simplest methods of costing and depreciation should be adopted. Definitions and procedures for capital assets should be reexamined, particularly those related to retirements and the determination of capital outlays versus repairs and maintenance expense.

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Capitalization levels for equipment should be reviewed and raised if too low. Units should consider raising the threshold as high as \$5,000 for equipment, and higher for infrastructure assets. For purposes of internal control, the control of low dollar, sensitive items should be shifted to the department heads. Begin early to identify the specific issues for the unit. If desired, the unit may hire the auditor or an outside consultant for appraisals or other assistance; however, neither Statement 34 nor the LGC requires the use of outside experts. Although recording retroactive infrastructure may be a one-time event, the maintenance of these capital asset records and the application of the respective operating procedures will be a continuing responsibility of the unit after the implementation of Statement 34. It would be to the unit's benefit for staff to become proficient in this area.

If there are questions or we can be of assistance, please contact Sara Shippee at 919-807-2386 or Samantha Cox at 919-807-2394.

## Appendix A: Example of Price Trend Indices

Two different indices are presented below. The Highway Construction Index from the *Price Trends for Federal-aid Construction* would work best when estimating cost for road systems. It was the index used in the example from the GASB 34 Implementation Guide. The Cost Construction Index is from the *Engineering News Record*. It is a producers' price index and may be a better source for assets other than roads.

Year	Highway Construction Index	Cost Construction Index
1980	97.2	3237
1981	94.2	3535
1982	88.5	3825
1983	87.6	4066
1984	92.6	4146
1985	102.0	4195
1986	101.1	4295
1987	100.0	4406
1988	106.6	4519
1989	107.7	4615
1990	108.5	4732
1991	107.5	4835
1992	105.1	4985
1993	108.3	5210
1994	115.1	5408
1995	121.9	5471
1996	120.2	5620
1997	130.6	5825
1998	126.9	5920
1999	136.5	6060
2000	137.9	6222

### Price Trends for Federal –Aid Highway Construction

Base year is 1987. Presents detail indices for excavation, surfacing, and structures. Numbers presented above are the composite index. This information is not on the Internet. The complete index with all of the detailed information can be ordered from:

U.S. Department of Transportation  
 Federal Highway Administration  
 400 Seventh St. S.W.  
 Washington, D.C. 20590

### Construction Cost Index (1908-2001) [www.enr.com/cost/costcci.asp](http://www.enr.com/cost/costcci.asp)

Base year is 1913 at 100. Index is based on 200 hours of common labor at the 20 city average of common labor rates, plus 25 cwt of standard structural steel shapes at the mill price prior to 1996 and the fabricated 20 city price from 1996, plus 1.128 tons of Portland cement at the 20 city price, plus 1,088 board ft of 2 x 4 lumber at the 20 city price.

## Appendix B: Estimated historical costs and “Major” infrastructure

**Exhibit I: Estimating historical cost using current replacement cost and deflators**

- Example: Record downtown access roads subsystem at 6/30/03
- Assume: Current construction cost = \$510,000 per lane mile  
 Estimated useful life = 25 years  
 Assets constructed since 1980 = 85 miles  
 Average age = 11.5 years (1980-2003) 23 years / 2 = 11.5  
 [Average of the oldest road (23 years) and the newest road (0 years)]
1. Determine deflation factor:
    - a. 1980 + 11.5 years - use 1991 as the average year of construction
    - b. The 1991 composite index was 107.5 (See App. A)
    - c. The 2003 composite index is 130.7 (estimate)
    - d. Deflation factor computed:  $107.5/130.7 = .83$   
 (Acquisition year index ÷ Current year index)
  2. Calculate estimated historical cost:  
 Lane miles x avg. cost per lane mile x deflator, rounded  
 (85 lane miles x \$510,000) x .83 = \$35,980,500
  3. Calculating accumulated depreciation at transition:  
 Cost/life x average age = accumulated depreciation at June 30, 2003  
 (\$35,980,500/25 years) x 11.5 years = \$16,551,030

**Exhibit II: Determining Major General Infrastructure Assets**

Infrastructure assets at transition may be limited to major general infrastructure assets at the network or subsystem level if preliminary estimated cost is less than 10% of general capital assets in FYE after 6/15/99 for networks and 5% for subsystems.

	<b>Preliminary Estimated Cost</b>	<b>% 6/30/99 GFAAG bal. \$40,254,000</b>
<b>Road Network:</b>		
Downtown access subsystem	\$ 35,980,500	89.4%
Downtown arterial subsystem	44,316,000	110.1%
Residential subsystem	2,745,600	6.8%
Service road subsystem	<u>1,200,000</u>	<u>3.0%</u>
Total Road network	<u>\$ 84,242,100</u>	209.3%
<b>Bridge Span Network:</b>		
20 to 40 feet subsystem	\$ 3,900,000	9.69%
41 to 60 feet subsystem	<u>2,000,000</u>	<u>4.97%</u>
Greater than 60 feet subsystem	<u>12,309,600</u>	<u>30.58%</u>
Total bridge span network	<u>\$ 18,209,600</u>	45.24%

If a unit decided to record at the network level, both networks would be reported since they are beyond the 10% level. If assets are to be recorded at the subsystem level, the Service road subsystem and the 41-60 feet bridge subsystem could be excluded since each is below the 5% level. The grouping of assets can determine whether they meet the thresholds. Regardless, the unit has the choice of deciding whether to record at the network, the subsystem, or the individual asset level. Use whatever works best for your unit.

## Appendix C: Composite method – Computing Un-weighted and Weighted Averages For Useful Life and Depreciation

### Exhibit I. Calculating un-weighted average life using straight-line depreciation.

Assume three interstate highways with estimated remaining useful lives of 16, 20, and 24 years.

$$1/((16+20+24) \div 3) = 5\% \text{ annual depreciation -or-}$$

$$1/(60 \div 3) = 1 \text{ over } 20 \text{ or } 5\%$$

### Exhibit II. Calculating weighted-average age – simple version.

Assume 2 interstate highway systems where 80% of roads are 10 years old & 20% are 15 years old.

10 yrs x 80% = 8 years; 15 yrs x 20% = 3 years,  
Such that 8 yrs + 3 yrs = 11 year weighted average life

### Exhibit III. Calculating weighted-average age - by cost or by miles.

Year	Project	Mileposts	Age in 2002	Age Weighted by Cost		Age Weighted by Miles	
				Cost (in 000's)	Cost x Age	Number of Miles	Miles x Age
1980	1	1-12	22	\$ 12,000	\$ 264,000	12	264
1983	2	13-25	21	8,240	173,040	13	273
1985	3	26-30	19	4,400	83,600	5	95
1987	4	6-15	13	8,400	109,200	10	130
1990	5	26-33	14	12,800	179,200	8	112
				<u>\$ 45,840</u>	<u>\$ 809,040</u>	<u>48</u>	<u>874</u>
Average age:				By cost	<u>17.65</u>	By miles	<u>18.21</u>

Either age, weighted by cost or miles, can be used based on which calculation best reflects the unit's experience.

### Exhibit IV. Calculating Composite Depreciation

Component	Estimated Useful Life	Estimated Cost	Salvage Value	Depreciable Cost	Depreciable Cost x Estimated Useful Life
Bridges	50	1,600,000		1,600,000	80,000,000
Roads	25	8,000,000		8,000,000	200,000,000
Curbs/gutters	15	800,000		800,000	12,000,000
Street lights	15	600,000	600	599,400	8,991,000
Traffic lights	18	600,000		600,000	10,800,000
Street signs	10	200,000	200	199,800	1,998,000
		<u>\$ 11,800,000</u>	<u>800</u>	<u>\$ 11,799,200</u>	<u>\$ 313,789,000</u>

Average estimated life:  $(50+25+15+15+18+10)/6 = 22.17$  years

Composite depreciation rate using average life:  $1/22.17 \text{ years} = 4.5\%$  per year

Weighted average estimated life:  $\$313,789,000 / \$11,800,000 = 26.60$  years

Composite depreciation rate using weighted-average life =  $1/26.60 \text{ years} = 3.76\%$  per year