

Section One -
Transportation Issues -
Highway Trust Fund Investment Strategies

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for
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Issue Statement

The objectives of this paper are to:

- Compare the current status and progress of the Highway Trust Fund (HTF) program with its original goals and objectives
- Assess the impacts of the Highway Trust Fund program on system maintenance requirements

Background

The Highway Trust Fund was initiated by the General Assembly in 1989 as a \$9.1 billion, 13.5-year roads program consisting of the following four components:

- Expand 1,757 road miles of the 3,600-mile Intra-State Highway System from two lanes to four lanes (62 percent of overall HTF program funding)
- Create 212 road miles of urban expressway loop roads surrounding seven major cities in the State (25 percent of overall HTF program funding)
- Pave 10,000 road miles of unpaved secondary roads carrying traffic volumes of 50 or more cars per day (6.5 percent of overall HTF program funding)
- Provide additional funds to municipalities for street improvement (6.5 percent of overall HTF program)

The objectives of the HTF program were to:

- Put a 4-lane highway within 10 miles of 96 percent of the State's population
- Stimulate economic growth
- Improve the quality of life for citizens of North Carolina by providing access to better roads
- Improve the safety of roads, particularly in mountainous areas

Funding for the HTF program consisted of the following sources:¹

- Increased motor fuels excise tax
- Increased motor carrier road tax
- Use tax on motor vehicles
- Increased vehicle registration and titling fees
- Funds freed up by retirement of highway refunding bonds
- Interest on revenues generated by the HTF

These total revenues were originally expected to generate \$12.5 billion over a 13.5 year period, with about \$3.4 billion going to the General Fund and \$9.1 billion available for Trust Fund projects.

Findings

Since the start of the HTF program, the actual revenues collected by the State have fallen below original projections by 26 percent due to the effects of the continuing economic recession.² As a result, the program timeframe effectively has been extended to 18.5 years.

Finding 1: Significant progress has been made in paving unpaved secondary roads.

During the initial three years of the HTF program, the following have been accomplished:

- 116 miles of Intra-State Highway System roads have been converted from two to four lanes (7 percent of the planned mileage)³

¹ *Progress Report on Maintenance and Operations Personnel.* Transportation Research Circular, Number 360. Transportation Research Board, National Research Council. June 1990.

² Trust Fund revenue of \$894 million for FY 1990-1992, versus \$1,201 million projected in 1989. Source: *North Carolina Highway Trust Fund - Project Status Report.* North Carolina Department of Transportation, August 19, 1992, Table 1 - Revenue Projections.

³ Ibid.

- 3,248 miles of unpaved roads have been paved (32 percent of the planned mileage)⁴
- Fund authorization for preliminary engineering on six of the urban loops, right-of-way acquisition on three of the urban loops, and construction of 7.4 miles of roadway (for the Charlotte Loop)⁵
- Significant staffing up (701 positions) by the Department to address the program, primarily in the pre-engineering area⁶

In addition, the State has decided to help fund certain secondary road maintenance activities (such as road stabilization) by allowing NCDOT to use \$10 million per year in HTF monies and \$10 million per year in Highway Fund monies.

Finding 2: State budget constraints have resulted in growing deferred maintenance of the State's highway system.

The State's roadway maintenance and operations budget has been squeezed by the fiscal constraints affecting State government, resulting in a growing level of deferred maintenance, while the availability of HTF program funding has led NCDOT to increasingly focus its overall resources on the capital improvement program. The NCDOT maintenance and operations budget is currently underfunded by about \$50 million per year, and has an increasing deferred maintenance backlog of about \$305 million, according to the NCDOT Maintenance Division.⁷ Some of the maintenance needs are being met by the HTF program through capital improvement projects and the funding of selected maintenance activities. However, the State's budget constraints in recent years have limited the Department's ability to adequately fund its maintenance and operations programs. As a consequence, the Department has shifted its focus and resources increasingly to capital improvement projects due in large measure to the increased funding made available by the HTF program. Evidence of this is the extensive use of NCDOT division maintenance forces for the surfacing of unpaved secondary roads funded by the HTF program.

⁴ Ibid.

⁵ Ibid.

⁶ Based on staffing data provided by J.T. Peacock, Jr., Chief Engineer - Preconstruction, September 1992, and P.M. Watts, Construction Operations Engineer - Construction, December 1992.

⁷ Maintenance Needs Study. North Carolina Department of Transportation Division of Highways and UNC Institute for Transportation Research and Education; April 5, 1990, p. 17.

Finding 3: Existing funding sources are inadequate to meet current and future highway maintenance needs.

The HTF program will increase the size of NCDOT's paved roadway system by about 18 percent and will increase the Statewide maintenance requirements by about 15 percent over the next 15.5 years. The HTF program makes no provision for the long-term maintenance and operating costs associated with those new paved lane miles which will be added to the State's road system by the program. As shown in Exhibits 1 and 2, we estimate that after completion of the program, NCDOT will be facing an added \$44 million per year (in 1992 dollars) in average long-term maintenance and retreatment costs. During the 18.5-year term of the program, the added maintenance and retreatment costs will represent 3 percent of the HTF program revenues. By the last year of the program, the annual maintenance cost increase of \$31 million (in 1992 dollars) will represent about 5 percent of the HTF program revenues for that year of \$679 million. Within four years of the program's completion, the average annual maintenance cost for the new roads will rise to \$44 million (in 1992 dollars).

When taken together, the current maintenance backlog, the current maintenance shortfall, and the projected HTF-related shortfall in maintenance obligations is expected to amount to about \$80 million per year over the next 15.5 years.

Finding 4: Failure to adequately address NCDOT's growing maintenance backlog will result in premature roadway surface failures, resulting in billions of dollars in unnecessary future costs.

The underfunded NCDOT maintenance and operations program budget represents a growing long-term financial time bomb for the State. Extensive studies have demonstrated that the long-term, life cycle costs of deferring roadway maintenance can be up to ten times the cost of performing adequate maintenance and renewal on an ongoing basis. The higher cost of deferred roadway maintenance manifests itself in terms of premature roadway surface failure, which requires costly capital replacement. Given the size of North Carolina's roadway system, this could represent billions of dollars in unnecessary future roadway reconstruction and replacement costs.

Recommendations

Recommendation 1: The General Assembly should amend the HTF program legislation to permit 16 percent of the available funds to be used by NCDOT for maintenance and operations purposes.

The current and projected shortfall in highway maintenance funding should be addressed by the State to prevent future advanced deterioration of the State's roadway system.

EXHIBIT 1

HIGHWAY TRUST FUND PAVED LANE MILE INCREASES

The Highway Trust Fund Program will add 24,786 lane miles of pavement infrastructure

HTF Element	New Road Miles	Program Scope	Added Lane-Miles of Pavement
Urban Loops	212	New multi-lane highways, mostly 6 lanes	1,272
Intrastate	1,757	Upgrade existing 2-lane roads to 4-lane	3,514
Unpaved Roads	10,000	Upgrade existing unpaved roads to 2-lane paved roads	<u>20,000</u>
		Total new paved lane-miles	24,786

EXHIBIT 2

HIGHWAY TRUST FUND MAINTENANCE-RELATED NEEDS

The added lane-miles of paved roads will create an additional need for maintenance funds

HTF Element	Added Lane-Miles of Pavement	Routine Maintenance Needs		Retreatment Needs	
		Cost Factor	Annual Maintenance Cost (millions)	Retreatment Cycle	Annual Cost (millions)
Urban Loops	1,272	\$3,600/lm-mi ¹	\$ 4.6	10 years	\$ 2.5 ²
Intrastate	3,514	\$2,000/lm-mi ¹	7.0	10 years	7.0
Unpaved	20,000	N/A	<u>N/A</u> ³	7 years	<u>22.9</u> ⁴
		Total	\$11.6 ⁵		\$32.4 ⁵
Total additional maintenance needs after program completion = \$44.0 annually ⁵					

Explanatory Notes:

¹ NCDOT Maintenance Division Automated Cost Report - FY91.

² Based on plant mix paving @ \$20,000 per mile.

³ The cost for routine maintenance of unpaved roads is approximately equal to that of paved roads. Therefore, there will be no net increase in the needs for routine maintenance funding.

⁴ Based on Bituminous Surface Treatment @ \$8,000 per mile.

⁵ Costs are reported in 1992 dollars.

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Increasing the funding resources available for maintenance and operations can be achieved in a number of ways, including increasing existing user fee-based levies, developing other revenue sources (such as sales tax increments, joint development fees, value capture taxes, or road/crossing tolls), or allocating monies from other highway programs, such as the HTF program.

The above recommendation would provide sufficient funding to eliminate the current backlog in maintenance, to provide for the increased maintenance obligations associated with the new roads added by the HTF program, and to bring the Department's overall maintenance program fully into line with the ongoing needs of the State's road system.

Recommendation 2: The HTF program should be further adjusted to eliminate the requirement to pave all unpaved secondary roads with total traffic volume of between 50 and 100 cars per day.

This recommendation will reduce the growth of the Statewide paved roadway system by focusing the Secondary Road Construction program on higher priority roads. As a result, the higher long-term maintenance and renewal costs associated with paved roads will be more cost-effectively reserved for those roads with sufficient traffic density to justify the higher level of surface treatment. This will reduce the cost of the Secondary Roads Construction portion of the HTF by \$357 million, and reduce the miles of unpaved roads to be repaved by about 6,000 miles.

Recommendation 3: The State should periodically reassess the justification for and financial feasibility of building 4-lane roads within 10 miles of 96 percent of the State's population.

This recommendation will enable the State to adjust the HTF program based on changing financial conditions and highway program priorities.

Recommendation 4: The General Assembly should authorize a comprehensive transportation financing study.

The highway maintenance backlog and shortfall described above, coupled with the unfunded expanding maintenance obligations associated with the Highway Trust Fund program, suggest that current funding resources are inadequate to meet the Department's long-term program needs. General fund transfers, interagency transfers, and program allocations of highway fund revenues increasingly dilute the revenues available for needed roadway capital improvement, maintenance, and operations. With the passage of landmark federal surface transportation funding legislation by Congress in 1991 (The Intermodal Surface Transportation Efficiency Act of 1991 - ISTEA), the level and allocation of federal transportation funding has significantly changed. The change in national and State

administrations will likely generate further changes to the funding and program priorities for transportation at the federal and State levels.

These changes and the funding inadequacies noted above provide a strong basis for the State to reevaluate the overall financing requirements of its multi-modal transportation program. Such a study should be directed by the Highway Oversight Committee. Such an effort should consider all modes receiving State funding, short-term and long-term program needs and life-cycle costs, currently available and alternative funding sources, and possible legislation needed to ensure that designated revenue sources are properly used to support program priorities in a comprehensive and equitable fashion. During such a study, the recommendations noted above could be further explored to determine their specific implications for the State's overall highway program and their compatibility with the directions the State may take as a result of thoroughly considering all transportation financing issues and concerns.

Implications

Implementing the first recommendation will require either further extending the HTF program timeframe by three years, assuming current revenue projections are realized, or reducing the scope of the capital improvement portion of the program by 16 percent. The three-year program extension would retain the scope of the program with modest impact on the schedule. The reduced scope option would retain the current schedule, but allow for fewer miles of roadways to be paved or constructed.

The alternative to fully funding the Department's maintenance requirements will be significantly higher future costs for roadway renewal, rehabilitation, and replacement. While the proposed action will not result in significant short-term savings for the State, over the long-term (10 to 25-year timeframe) the State will significantly reduce its overall highway program costs to preserve the condition of its roads and bridges. These savings are estimated to grow from \$12 million in the year 2000 to \$120 million in the year 2010, as the effects of earlier preventative maintenance are realized through lower repair and replacement costs. The alternative is a larger highway system that exhibits significant deterioration upon program completion.

Ultimately, the State will need to consider how to fund the incremental \$44 million in annual maintenance costs associated with the HTF program roads, plus the current \$50 million annual maintenance cost shortfall, once the HTF program ends and its revenue sources are removed.

The second recommendation will enable the Department to reallocate a portion (60 percent) of the Secondary Road Construction program funds to other higher priority needs, such as the under-budgeted maintenance and operations programs, as described above. This will provide long-term savings in terms of lower eventual repair and replacement costs for the paved Statewide system.

The third and fourth recommendations are aimed at providing the State with periodic comprehensive assessments of its overall transportation-related financial needs and funding opportunities. This will enable the State to make transportation program and revenue adjustments that are tailored to meet the changing mobility needs and priorities of its citizens and businesses.