FLORIDA TRANSPORTATION:

A System At Risk

A Task Force Report on
Ways to Improve
State Road Building

PARTNERS in PRODUCTIVITY

Florida TaxWatch Inc.

THE FLORIDA COUNCIL OF 100

PARTNERS in PRODUCTIVITY

Working for enhanced government performance on behalf of Florida taxpayers

"Partners In Productivity" is a unique public and private cooperative effort spearheaded by Florida TaxWatch and the Florida Council of 100 to identify, implement and reward major cost savings and performance enhancements in Florida state government. The program operates under an Executive Order of the Governor, a Cabinet resolution and support of the leadership of the Florida Legislature.

"Partners" is a three-tiered initiative aimed at increasing efficiency and reducing waste in Florida government. It consists of a special task force, development of a system for measuring government productivity, and recognition and rewards for outstanding performance.

Productivity Task Force. This group of 39 of the state's top business leaders is charged with developing "big-ticket" cost saving ideas and management improvements for implementation in state government. The key areas of concern are education, transportation, health and social services and corrections, which together spend almost three-fourths of the state's $21 billion budget.

Productivity Measurement. Florida TaxWatch, the Florida Council of 100 and our government leaders will develop and institutionalize a first-in-the-nation government performance measurement system to ensure that productivity enhancement in Florida government is an ongoing top priority. This measurement system will provide meaningful data for an annual awards program to reward exceptional performance achieved by state workers.

Productivity Rewards and Recognition. As an extension of "Partners In Productivity," monetary and other rewards will be given to state agencies and individuals for cost savings, good management and innovation in the Florida work force.

REPORT CARD

The challenge and opportunity of turning government management around and getting it to focus on output, performance and productivity is crucial to Florida's future.

An important part of the "Partners" effort is an evaluation of the state's success in implementing cost saving ideas and management improvements. An initial government performance "report card" will be prepared in 1989. The final report card will be issued in 1990.

Partners in Productivity is funded by a grant from the John D. and Catherine T. MacArthur Foundation, Chicago, Illinois and an additional investment by Florida TaxWatch Founding Member J.E. Davis and A.D. Davis, Winn-Dixie Stores, Inc. in order to develop more effective systems for measuring and rewarding increased performance in Florida's state government.

FLORIDA TRANSPORTATION: A System At Risk

December 1988

A Report to the Governor, Cabinet, Florida Legislature and Florida Taxpayers

Photos and graphics in this report courtesy of the Florida Department of Transportation and the Florida Department of Commerce.

In fulfilling the duties established by this executive order, the Task Force shall employ modern business management and accumulated management expertise to:

A. Support innovative and proposed management improvement programs.

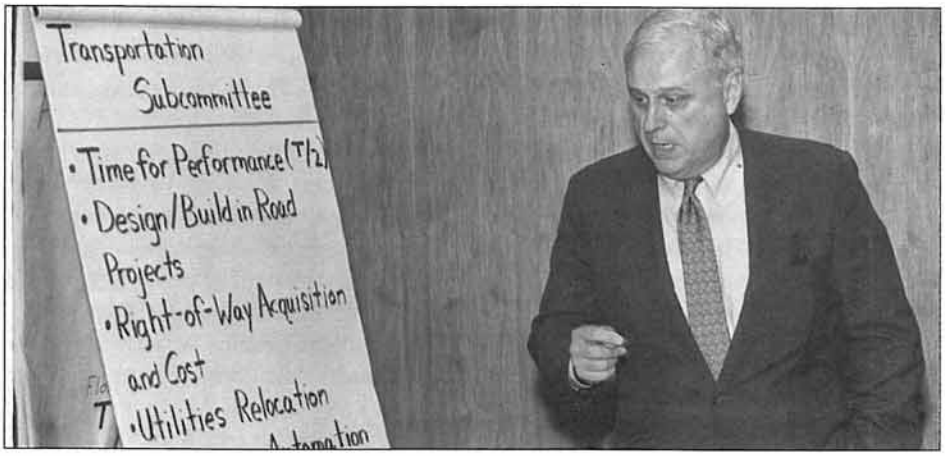
B. Increase efficiency and productivity and reduce the cost of government services.

C. Identify current opportunities for operational and organizational management improvements that would help redesign the incentive structure of state government for improved productiveness.

D. Consult with private sector organizations for advice so as to identify and designate specific areas for further indepth management studies.

Governor's Executive Order creating the Partners in Productivity Task Force November 24, 1987

From the Chairman



Transportation Subcommittee Chairman W. M. Palmer, Jr. presents transportation issues to Governor Martinez and the Partners in Productivity Task Force.

The State of Florida confronts a transportation challenge of massive proportions – estimated between $16 billion and $25 billion above projected transportation funding for the ten year period ending in 1997. Failure to adequately meet this challenge will result in a significant devaluation of the quality of life that Floridians have come to expect and enjoy.

An infrastructure problem so large and complicated, while demanding funding, cannot be solved by sufficient funding alone. Effective and efficient systems and procedures must be in place to more productively utilize available resources.

This report focuses on ten areas in which the Florida Department of Transportation can become a more effective and responsive provider of an essential and safe transportation system and network. It contains more than 80 recommendations for boosting efficiency, productivity and quality.

The Partners in Productivity Transportation Subcommittee was constituted of prominent, knowledgeable business leaders to tackle its difficult task. A quick review of the members reveals an array of successful executives in the fields of construction, engineering, development, utilities, management, law, purchasing, personnel and government.

Subcommittee members were each assigned major systems, productivity and management improvement issues for investigation and study. Their task was made less onerous by the receptive and helpful attitude of the Department of Transportation, from Secretary Kaye Henderson on down. This attitude flowed largely from an understanding that increased productivity and efficiency are necessary, desirable and possible NOW.

Assistant Secretary John Goodknight, Comptroller Tom Kelso – who very ably coordinated the Department's participation in this project and provided important substantive input – and former Director of Construction Murray S. Yates, merit special recognition for their contributions to the report.

The following DOT personnel were particularly helpful in providing the members with competent staff assistance, technical information and analysis in development of the various sections of the report: Jack Trickey, Richard Long, Jim Ely, Steve Ferguson, Art Wright, Ken Towcimak, Paul Kaczorowski and Nick Serianni.

The subcommittee is mindful and appreciative of the thoughtful assistance and advice provided by the Florida Transportation Commission and its Chairman, David Kerr, and the Transportation Committee of the Florida Council of 100 chaired by Jack Wilson.

I would like to acknowledge and thank each member of the subcommittee who not only gave generously of his time and effort, but also the time and effort of his respective company and staff, many of whom are technical experts in the various areas with which the subcommittee concerned itself.

We are also indebted to the staffs of Florida TaxWatch, Inc. and The Florida Council of 100. Particular thanks goes to David M. Davis, who served as principal staff to the subcommittee while concurrently handling the duties of Executive Director of Partners in Productivity.

The subcommittee feels confident that the Department is determined to conscientiously implement our recommendations, some of which will require legislative action. A follow-up report card in one year – plus continuing evaluation of current and proposed performance measures – will gauge its success.

It should be understood, however, that implementation of these 80 plus recommendations *alone* will not ensure a more effective road building process or a more responsive Department of Transportation. Without appropriate funding, the massive transportation challenge facing our state will not be met.

Ultimately, the subcommittee will have successfully done its job if, after implementation of its recommendations, the Department of Transportation has more productive and effective systems and procedures through which it can deliver the safe, efficient and extensive transportation system called for by a demanding and growing base of transportation users.

Whitfield M. Palmer, Jr.
Chairman

Florida's Transportation System At The Crossroads

The safe and efficient travel of millions of Floridians and its visitors is at serious risk. According to a recent study, Florida's choked and deteriorating roads annually cost a total $4.4 billion or $678 per driver in unnecessary operating costs and congestion delays. Substandard roads cost drivers an additional $720 million per year.

While the toll taken on Florida's millions of residents, motorists and visitors is witnessed each day, the economic impact on existing and incoming commerce is tremendous and growing. If we do not deal successfully with the ills that plague our statewide transportation system, we will lose the attributes which attract residents and visitors to our state. We will diminish the high quality, low cost competitive edge over other sunbelt destinations which Florida currently enjoys, and Floridians will see the continued devaluation of the quality of their lives and communities.

For a host of reasons – Department mismanagement; up and down funding levels and spending patterns; an insufficient emphasis on results, production and performance management; legislative and political meddling; three major reorganizations (all based on process instead of product) and seven agency heads in a span of ten years – Florida's Department of Transportation has aptly been referred to as "an agency adrift." These management and political phenomena have occurred while our transportation needs and citizens' demands have relentlessly outpaced Florida's transportation funding structure.

The Department faces a multitude of serious challenges today and in the coming years. For the first time in its history, DOT now must justify its internal actions, rethinking old, cumbersome policies under the scrutiny of executives with proven success in the execution of policy and management practices.

The Partners in Productivity task force has looked at the sum of the parts while keeping an eye on the entire transportation picture. While improvements are already being developed to deal with Florida's transportation crisis, much more work is needed before the public will tolerate the added funding mechanisms which may, by necessity, be phased in during the next five to ten years. Higher performance standards for DOT employees and a quantifiable performance measurement system are only two procedural changes which are vital to ensure taxpayers an optimum return on their tax investments.

This report examines ten key components of the state road building process and management of the Department of Transportation. It highlights specific statutes, policies and practices which have prevented the Department from keeping up with Florida's growing demands, and it offers more than 80 recommendations for improvements.

Two Decades of Relentless Growth

The 1969 creation of the Florida Department of Transportation brought with it a mission to ensure safety, efficiency and cost-effectiveness in the state's road and bridge system. The Department was charged by the Florida Legislature with planning and developing highways, streets, public transportation, air routes, airports and allied facilities, and regulating these systems according to the law.

Structured to be funded solely through the collection of user fees such as gasoline taxes and highway and bridge tolls, the Department's budget for fiscal year 1970-71 was $424 million, administered by a total staff of 10,112.

In 1970, Florida's infrastructure needs were evident but not critical. While the state was on an upward growth pattern, we were still enjoying the relatively predictable peak traffic periods associated with traditionally heavy tourist seasons – and the more leisurely "off season" months when there were noticeably fewer vehicles on our roads.

But powerful forces were in motion which would lead to Florida's current transportation crisis. One was an unprecedented population explosion. Despite several recessions during the nineteen seventies and early eighties which might have reduced the influx of new residents, Florida's population continued to swell.

For one thing, the deterioration of some major northern cities caused hundreds of thousands of urbanites to vacate cold, crowded industrial centers for the less hyper, lower populated environs of Florida's coastal communities. That, combined with an expanded economic base and the state's increasing retiree population, continued to make Florida a more attractive place to live and work, leading to even greater expansion of our already impressive growth.

Since the early nineteen forties, Florida's population has been doubling every 20 years, growing after 1960 more than four times faster than the rest of the nation. In fact, six of the 11 fastest growing areas in the U.S. are in Florida. Today, an estimated 900 new residents move here each day, adding up to over 300,000 per year.

Cars, cars and more cars

Between 1976 and 1986, the number of licensed drivers in Florida climbed

from 6.3 million to 8.3 million – an increase of 33 percent. Registered vehicles on our highways increased from six to ten million.

Floridians' dependency on the state road system is widely recognized. Heavy reliance on the automobile as the primary mode of transportation, coupled with more cars on old road systems, has created traffic conditions which are not only aggravating – but also unsafe and environmentally unsound.

While many parts of the country have experienced some transportation growing pains, nowhere have they been more acute than in Florida. Department of Transportation reports document growth of nearly 50 percent in traffic on our highways and streets between 1979 and 1987, versus 23 percent nationally. During this time, vehicle miles driven increased from 62 billion to over 93 billion. By the year 2000, traffic in Florida is projected to expand another 42 percent to 132 billion vehicle miles per year, or about 362 million miles daily.

Despite these realities, spending for transportation improvements increased only about one percent per year between 1967 and 1985, while highway use increased six percent annually. Since 1970, usage has more than doubled, while inflation adjusted spending on new right-of-way has hardly grown at all. So as Florida's transportation investments were at best level, the state's population – including thousands of new licensed drivers and registered vehicles each year – increased at rates much higher than the national average.

Congestion and Safety Concern Floridians

Today, nearly 18 percent or 6,000 lane miles of Florida's highways are in need of resurfacing or repair. More than 1,300 bridges (24% of the total) are deficient. More than 9,000 lane miles (27 percent) of all state highways are congested. Of the 4,088 miles of urban, state-maintained roads, 1,780 miles (43.5 percent) regularly have major congestion problems. A total of 2,993 miles of roads (25.9 percent) out of 11,572 maintained by the state are considered to be deficient.

Inconvenience isn't the only negative result of increasing traffic and inadequate highways. Between 1977 and 1983, despite the mid-1973 introduction of the 55 m.p.h. speed limit, yearly accidents on Florida's state highways increased more than 99,000 – an alarming 35 percent. Between 1977 and 1987, total injuries increased by 55,790, or 34.8 percent. Fatalities increased 39.9 percent (from 2,066 to 2,891 annually) during the same period.

Florida's traffic explosion has also led to higher maintenance costs and time delays. Of the more than 93 billion vehicle miles traveled by Florida's drivers in 1987, over 51 billion were on substandard (poor and fair) road pavement.

Driving on rough and uneven road surfaces costs Florida motorists over $6 billion annually, or $85 more per year for vehicle repairs, wasted motor fuel, and wear on tires.

A recent Florida State University public opinion survey found that 50 percent of those questioned called traffic in their area "very congested." Thirty-five percent responded with "somewhat congested" and only 15 percent indicated no congestion existed at all. Recent studies show that traffic snarls devour an estimated three million hours per day as Florida motorists fume at intersections on the state's many clogged streets and highways. This costs an estimated $531 per driver in wasted time annually.

The DOT Response: Faster At What Cost?

The Department of Transportation's primary response to the problem of inadequate roads and resultant congestion, frustration and finger pointing is an agency-wide push to speed up the road building process. DOT's top priority is to reduce the time from "concept to concrete" from an average of nine years to four and one-half years. While this is a very ambitious and admirable strategy with the potential for big success (see next section of this report) the emphasis on accelerated activity has a downside: At least short-term cash shortages.

In 1987, the Department stepped up construction by awarding a record $900 million worth of road work contracts. Outstanding contractual obligations approaching $1.3 billion provided incentives to accelerate payments to road builders. Construction speed-ups contributed to reducing the DOT's cash reserves from $440 million in April 1988 to $98.3 million on September 30, 1988. This money crunch has DOT officials looking at $390 million worth of work program cuts over the next six months.

Adding to DOT's dilemma is a built-in Catch 22: Speeding up road construction causes depletion of cash balances, but if road planning development slows during a period of cash shortage, needed plans may not be ready when the funds do become available.

More Predictable Funding Stream Needed

Obviously, a more reliable means of transportation funding is needed – one which mandates planned, predictable levels of funding. And despite current shortfalls, the state should resist breaking away from the user based method of funding transportation. Any new road levies, whether they take the form of gas taxes or tolls, should be phased in over several years in tandem with bonding.

Bonding for right-of-way acquisition and bridge construction was approved by Florida voters on November 8, 1988. Release of proceeds from this method of funding should be tied to the Department's cash balance and evidence that productivity is increasing or is at least constant, providing new and necessary incentives for improved performance.

This approach would prevent more money being available at any given time than the Department can efficiently spend. It would give both the Department and contractors time to adequately gear up for the increased work. It would also allow the market and Florida motorists time to better anticipate and absorb higher gas prices.

The Bottom Line

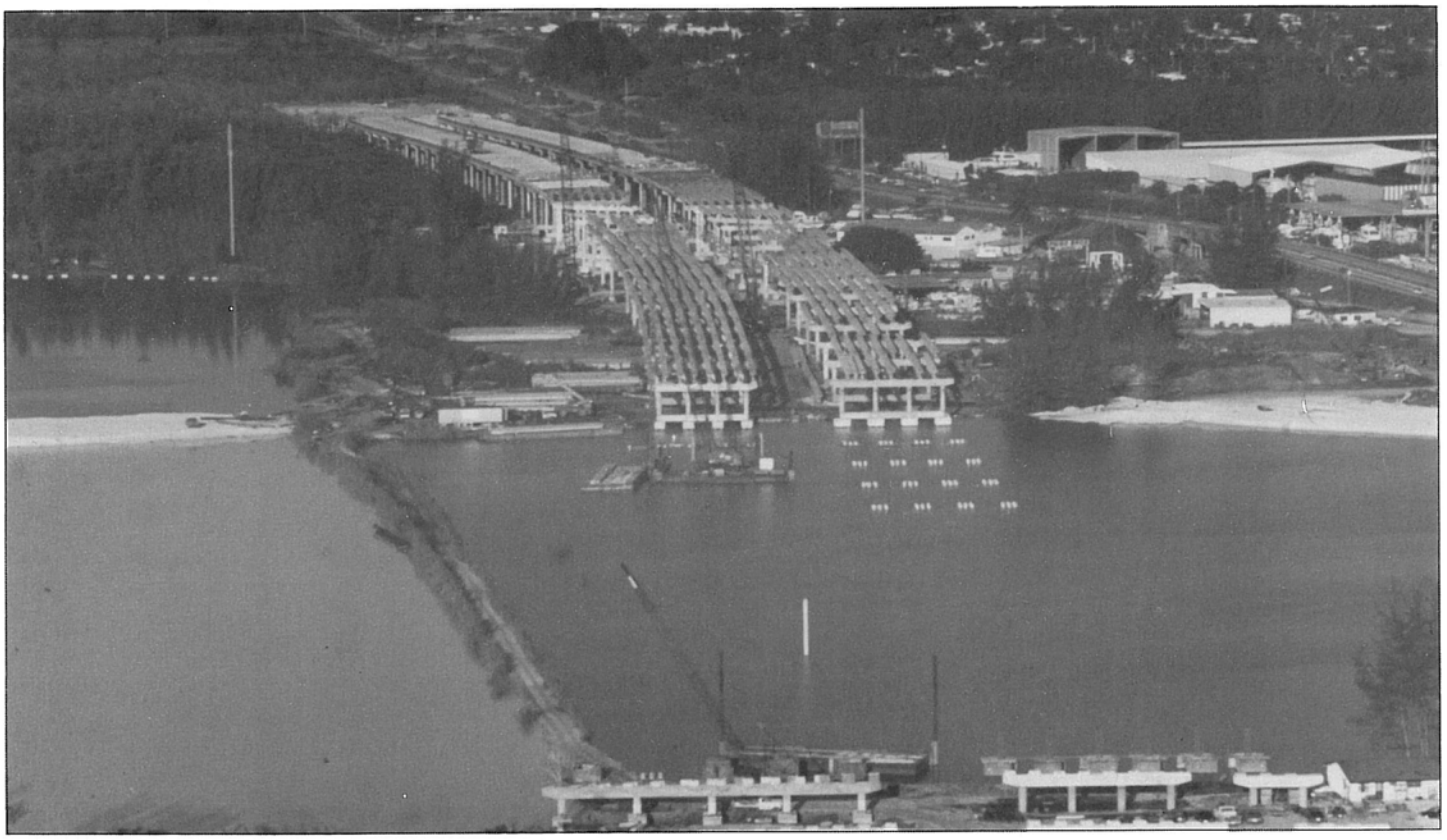
The future success of state road building is tied to the confidence level of Florida's citizens. Without some specific assurances that collection of any new taxes and fees for road and bridge

construction does not amount to a futile process of throwing good money after bad, Floridians will question and likely resent calls for new funding. It can not and should not be extracted from the public without sound management practices, measurable proof of improving productivity and a fair accounting system to accompany them.

Some of the above data is from an October 1988 study by The Road Information Program, a Washington, D.C. based research group.

Department of Transportation reports document growth of nearly 50 percent in traffic on our highways and streets between 1979 and 1987, versus 23 percent nationally. During this time, vehicle miles driven increased from 62 billion to over 93 billion. By the year 2000, traffic in Florida is projected to expand another 42 percent to 132 billion vehicle miles per year, or about 362 million miles daily.

Improving Performance to Cut Road Building Time In Half (T/2)



The term "T Over Two" is more than a catchy phrase. It is a formula with potential for big success. It means cutting the time in half from planning a road to its final completion (or from concept to concrete) without compromising the product. That involves such changes as performing selected design/engineering steps concurrently, tightening contract time and reducing supplemental agreements, streamlining approval processes and cutting delays in issuing work orders. It also means eliminating duplication, empowering the DOT districts to make more decisions locally, renegotiating federal waiver practices and maximizing computer usage in design and drafting.

In short, many steps in road construction can and should be consolidated, streamlined or cut, all with an eye toward building roads and bridges faster, more efficiently and with resultant safety. The following pages highlight specific areas where the subcommittee believes practical, workable improvements can and should be made.

Background

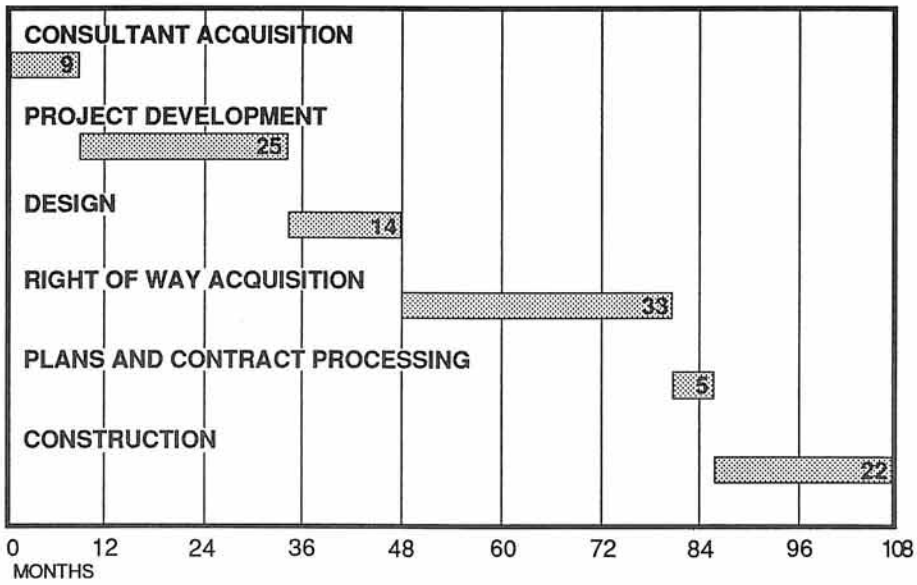
The Department of Transportation has undertaken an ambitious initiative, unparalleled among the major states, to reduce the time required to develop, design and construct transportation improvements. Secretary Kaye Henderson has labeled this program "T over Two," for cutting in half the time required from "concept to concrete" in Florida's $1 billion annual road building program.

This initiative affects a broad spectrum of the Department's design and engineering standards, policies and operating procedures. Many aspects of the undertaking are addressed in other sections of this report (i.e., Design/Build, Right-of-Way Acquisition, Utilities Relocation, Engineering Automation, etc.). This section focuses on a number of road building processes and functions that can be adopted or modified to reduce time and stretch available transportation dollars.

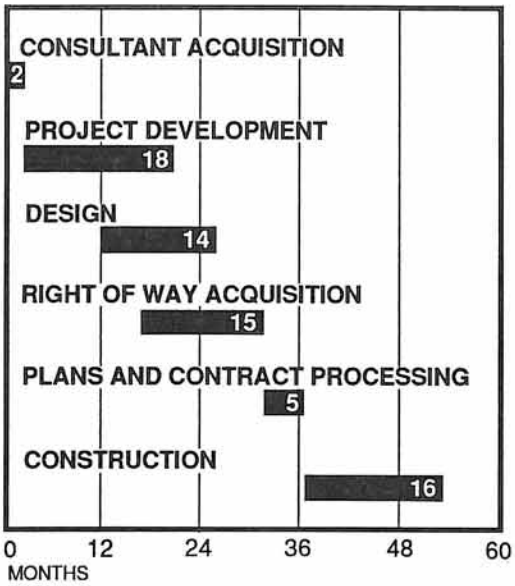
The subcommittee has evaluated the Department's efforts to date and recommended further improvements based upon

DEPARTMENT OF TRANSPORTATION WORKS TO SPEED UP ROAD BUILDING

OLD WAY OF DOING BUSINESS



PROPOSED STREAMLINING



Major project delivery, which has required 9 years, is proposed to be completed in 4.5 years. This would be accomplished by trimming consultant acquisition from nine to two months, project development from 25 to 18 months, right-of-way acquisition from 33 to 15 months, and construction from 22 to 16 months. Also, much of project development, design and right-of-way acquisition, will be accomplished concurrently.

Source: Florida Department of Transportation, October 1988.

initial results of the "T over Two" initiative. While significant progress has already been made, the process of making the many changes required to complete road building projects more expeditiously will take several years.

Once fully implemented, most projects begun under the new processes should be delivered in half the conventional time. Some projects will take longer to complete, but on average "T Over Two" should become the norm.

The subcommittee stresses that in reducing the time to produce, it is very important not to significantly increase immediate road building costs. The Department of Transportation should act to ensure that incentives do not exceed benefits derived by having projects completed sooner. It should also more evenly spread the award of projects throughout the 12 month cycle rather than crowding a high percentage of the annual total into a two to three month period.

Speeding up the Road Building Process

The subcommittee has examined the following road building components which have major impacts on project time and cost, and has provided recommendations for improvements.

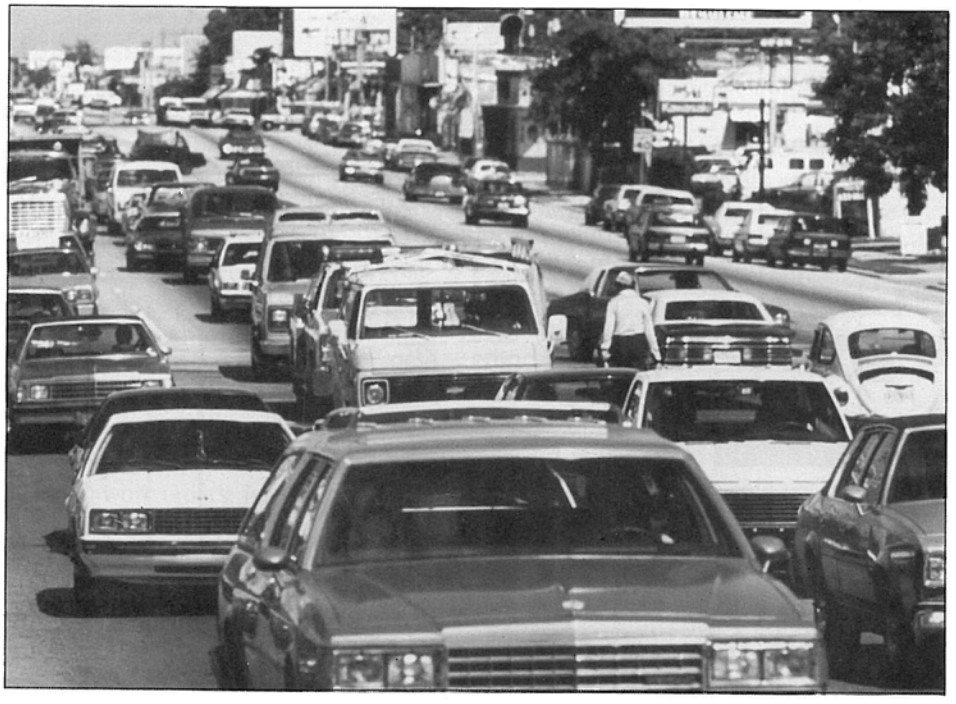
Decentralization

Secretary Henderson, acting on a 1985 legislative mandate, has moved to decentralize design and construction supervision to the DOT districts while maintaining control of construction contract letting in Tallahassee. The subcommittee recommends that the Department develop policies concerning the following issues:

- The appropriate balance between achieving centralized economies of scale and expertise versus greater management flexibility and faster response time through decentralization;
- The degree of centralization of complex bridge design;
- The optimum dollar amount of contracts that should be issued by the DOT districts vs. in Tallahassee (the present limit is $250,000); and
- The degree of authority of District Secretaries to execute project agreements.

Concurrent Activities

There are a number of steps in the road building process that can and should be performed concurrently. For example, the right-of-way acquisition process – which includes title search, mapping, preparation of legal documents, appraisal, acquisition, relocation, suit preparation and eminent domain – can be shortened by accomplishing certain events concurrently.



"T Over Two" is more than a catchy phrase. It's a major initiative to speed up road building with the potential to significantly benefit Florida motorists.

The Department should act to ensure that incentives paid to contractors and other costs do not exceed benefits derived from having road and bridge projects completed sooner.

The Department must strike an appropriate balance between centralized economies of scale and expertise vs. greater management flexibility and faster response time achieved through decentralization.

Rather than reviewing projects for compliance, basically stopping all progress until a review is completed, the Department should negotiate with the Federal Highway Administration to permit it to use equivalent state laws and regulations.

Likewise, title searches on one or two alternative alignments that are the most feasible should be conducted early in the preliminary engineering phase as determined by the project manager. The increased cost is minimal compared to time saved later in the right-of-way process. Other time savings may be accomplished by advance acquisition and use of new laws relating to roadway corridor protection.

In short, right-of-way activities should be an important part of the critical path schedule of each road project. (Right-of-way is discussed in greater detail in a subsequent section of this report.)

Also, the Department should continue to work on alternate road and bridge designs on federally funded projects during the mandatory federal review process. This would make all feasible designs available when needed, thereby helping to accelerate road building projects by six to nine months and justify the additional modest cost.

Certification Acceptance

Federally funded projects are subject to a minimum of three pre-construction design reviews averaging thirty days each. The results often require additional time to re-do work that has already been completed.

The Federal Highway Administration (FHWA) can waive many steps in the development of federal aid projects by accepting Florida's certification to use equivalent state laws, rules, regulations, directives and standards in lieu of federal ones. Under this arrangement, state certification provides for full or partial coverage on any eligible federal program, phase or class of project.

Rather than reviewing projects for compliance – basically stopping all progress until a review is completed – FHWA can accept Florida's certification of conformity for each project, thus shifting federal emphasis to program reviews and quality assurance monitoring.

The subcommittee recommends that the Department negotiate with FHWA for certification acceptance with all due speed.

Mitigation Land Banking

The Florida Department of Environmental Regulation and the U.S. Army Corps of Engineers regulate Florida wetlands. The state's five water management districts regulate water quality and quantity impacts on drainage basins. Each imposes mitigation requirements on DOT projects.

Despite the best efforts to align roads to avoid environmentally sensitive areas,

circumstances often necessitate rights-of-way through wetlands and drainage basins. At the same time, the linear nature of road alignment makes it impractical to condemn mitigation areas adjacent to road rights-of-way.

To facilitate the important public purposes of expanding roads while protecting Florida's environment, DOT District 7 (Tampa Bay area) is conducting a test program of "Mitigation Land Banking." This involves DOT pre-acquiring appropriate land – whether wetlands or drainage areas – so that parcels will be available to satisfy mitigation requirements generated by subsequent road projects.

Mitigation Land Banking can save valuable time and money. For example, the Department of Transportation estimates that if this option had been available prior to the permitting process for the Courtney Campbell Causeway project in the Tampa Bay area, a time savings of six to eight months could have been gained.

The subcommittee recommends that the District 7 experiment be evaluated for possible statewide implementation by July 1990.

Computer Aided Design and Drafting (CADD)

This is an innovation of the 1980s that electronically develops, stores and retrieves road and bridge plan details.

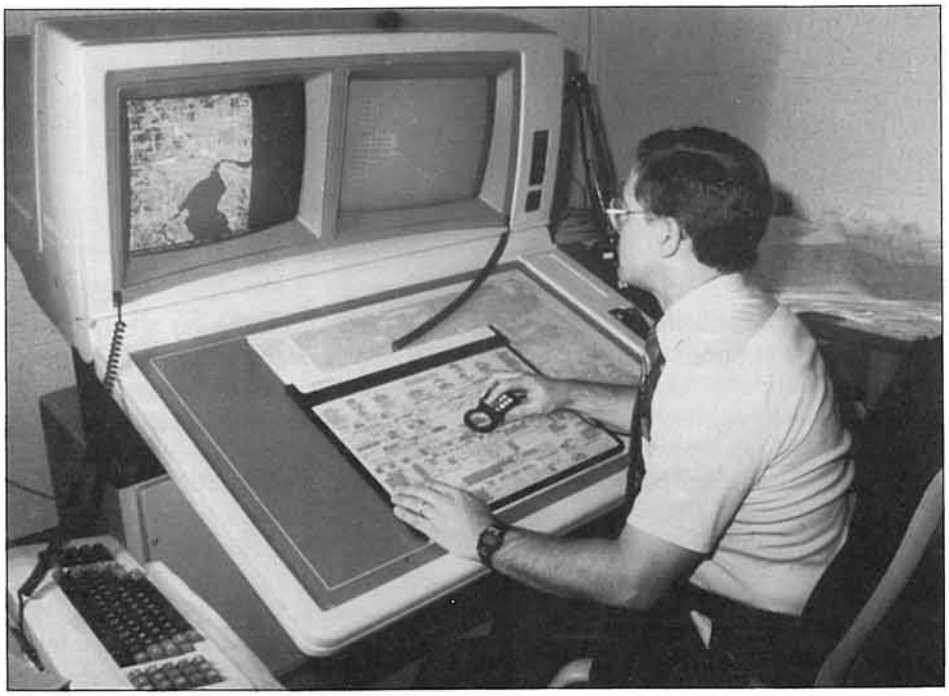
A Florida Department of Transportation study concluded that CADD has a 2:1 productivity ratio in total production of plans over conventional methods. When the function of road and bridge drafting (drawing) is isolated, machine drafting (CADD) vs. hand drafting yields up to a 10:1 productivity ratio.

Other Advantages:

- Field survey information can be entered into the CADD system via hand held computers, thus reducing the need to plot information from field books by hand;
- CADD eliminates problems with reproduction of aerial photos, which has been a quality control concern; and
- CADD allows the Department to electronically send, store and retrieve design information.

The subcommittee recommends that Computer Aided Design and Drafting should be used two shifts per day in all DOT districts as production needs dictate. The Department has invested $8 million in this equipment over the past five years and is requesting an additional $6 million for 1989-90.

The subcommittee also recommends that all plans by professional consultants should be done on CADD so that revisions



The Department estimates that a time savings of six to eight months could have been gained if Mitigation Land Banking had been available prior to the permitting process for the Courtney Campbell Causeway project in the Tampa Bay area.

More meaningful penalties should be imposed where a contractor is late in completing a project. Just as incentives for early finish are essential, strong disincentives for late completion should also be required.

The subcommittee finds no documented decrease in the amount of time spent on supplemental construction agreements as a result of DOT decentralization.

The DOT and contractors should work together to reduce the need for time consuming supplemental agreements by at least 10% annually over the next five years.

can be efficiently and expertly made through the use of this system.

Contract Time

In years past, the Department of Transportation was liberal in establishing construction contract time and granting time extensions, allowing contractors excessive time to complete many projects. Recently, contract time has come under scrutiny. The 1987 Legislature increased liquidated damages and imposed penalties on delinquent contractors. Changes in DOT rules, procedures and specifications pertaining to establishing and managing contracts have been or are being implemented.

The subcommittee recommends that the Department of Transportation pursue the following initiatives to help speed up contract time:

- Include an early completion incentive clause in all road building contracts whose primary purpose is to enhance road capacity. This provision is especially beneficial when toll revenue collections are anticipated to start by a certain date to retire debt from bond issues. Section 337.18(5), Florida Statutes, currently allows incentives in situations that are essential to the public health, safety and welfare.
- Further increase penalties where a contractor is late in performance of a project. Just as incentives for early completion are essential, strong disincentives for late finish should also be required.
- Experiment with creative techniques such as allowing bidders to include contract time as part of the competitive bidding process. (The Department would need to determine a dollar value for a given number of contract days saved.) There is no better qualified party to establish the minimum time needed to economically complete a construction project than contractors themselves.
- Carefully consider the applicability of local government innovations to state road building work. For example, Leon County has sped up the contracting process on small road jobs by requesting professionals to bid on a general contract. Several bidders may qualify. When a job needs to be performed, a contract is negotiated with one of the selected contractors. The threshold is set so that a trade-off is accomplished between competitive bids on each job and the cost savings of multiple bid processes.

Supplemental Agreements to Construction Contracts

Changes to construction contracts that add work or address unanticipated conditions are common practice. The majority of these changes require negotiations between the Department and contractors regarding cost and impact on contract time.

Approval and execution authority for supplemental agreements have been decentralized and handled in the districts since September 1987. Each DOT construction contract contains provisions

CONTRACTOR PENALTIES FOR NON-COMPLIANCE WITH ROAD BUILDING COMPLETION SCHEDULES SHOULD BE INCREASED

Value of Contract	Current Statutory Penalty*	Recommended Minimum Daily Penalty**
under $5 million	$1300	$1500
$5 to $10 million	$1500	$2500
$10 to $15 million	$2000	$3000
$15 to $20 million	$2500	$4000
over $20 million	$2500***	$6000

* Includes liquidated damages

** The DOT should be authorized to impose higher penalties for selected high priority/high visibility projects.

*** Plus .005 percent per day for any amount over $20 million

Source: Partners in Productivity Task Force, November 1988

allowing the contractor to proceed with the work upon receipt of written authorization from a DOT engineer after negotiations have been completed.

The holdup involves the time required to handle paperwork and obtain sign-off by the Department's comptroller, legal counsel, engineering managers, contractor and contractor's surety - along with the time required to enter the transaction into DOT's computer system for payment on the next phase of the project.

This process requires contractors to either cash flow costly construction work for several months before payment is received or wait for a formal agreement to be executed, increasing road project completion time.

The subcommittee finds no documented decrease in the time required to complete the supplemental agreement process as a result of decentralization. We recommend that the Department and contractors work together to reduce the need for time consuming supplemental agreements by at least 10% annually over the next five years.

Moreover there should be no agreements to supplement work orders or changes unless they significantly increase the quality of the project and do not have an adverse impact on the cost. Changes recommended by the contractor should not provide additional profit but should be billed at cost plus a fixed administrative fee. This will keep contractors from abusing the state and make the DOT better define the necessary scope of work up front.

Issuance of Work Orders

Approximately 100 days elapse from the time a low bidder is announced until the Department of Transportation issues a work order to the contractor to proceed. Studies by the construction industry indicate that other states issue work orders in as few as 30 days.

One cause of this large disparity is Florida's Administrative Procedures Act (Chapter 120, Florida Statutes) which sets aside time to allow for bid protesting. Other delays are caused by checks for possible bid rigging and evaluation for compliance with performance bond and minority business requirements.

The subcommittee recommends that the Department compare its present rule and procedures with those of other states with the intent of reducing the time from bid opening to issuance of work orders whenever possible. This should be completed by February 1, 1989 in order to recommend any needed statutory changes to the 1989 Legislature. The Department's goal should be to reduce this time by as much as 50% by July 1989.

Shop Drawing Review and Approval

Road and bridge designs cannot address the details of specific construction

Approximately 100 days elapse from the time a low bidder is announced until the Department issues a work order to the contractor to proceed. Studies by the construction industry indicate that other states issue work orders in as few as 30 days.

The Department should compare its procedures with those of other states to pinpoint ways of reducing the time between bid openings and issuance of work orders.

In FY 1987-88, the Department allowed a total of 10,685 extra work days just for contractors to purchase materials and equipment needed for road projects.

The Department should conduct a pilot project to determine whether time can be saved by the DOT itself pre-purchasing some materials and products needed for construction.

proposed by a successful bidder. Numerous engineering calculations and details are necessary for Department of Transportation design engineers to assure themselves that applicable specifications have been met. They must be satisfied that the planned structure can be fabricated (manufactured) in detail using acceptable materials which will perform satisfactorily throughout its projected life. For this reason, shop drawings are a necessary part of the structural design and construction process.

Historically, the Department has reviewed all shop drawings for bridges and roads in the structural section of its Tallahassee central office. However, a pilot project under which shop drawings for conventional non-complex structures are reviewed locally has recently been implemented in two districts as part of DOT decentralization. Additionally, two other DOT districts currently review at least a portion of shop drawings for non-complex structures. As a further time cutter, guidelines and standards are being developed to allow some fabrication details to be accepted without the normally required shop drawing reviews.

Recommendations

The Department of Transportation should take the following actions by July 1989:

- *Determine which road and bridge building processes that presently require submittals to the central office can be handled more expediently while still assuring that the design intent of contract documents is adhered to and the quality of the final product is maintained. Review and approval by trained field personnel can speed up the process.*
- *Develop procedures for producing bridge components from standard drawings and more detailed contract drawings, where feasible, rather than shop drawings.*
- *Conduct an evaluation of time and costs generated by decentralization compared to centralized shop drawing review, and other time and cost savings generated by changes in traditional shop drawing procedures.*

Pre-Purchased Long Lead Construction Materials

In FY 1987-88, the Department of Transportation allowed a total of 10,685 extra work days for contractors to purchase materials and equipment needed for road projects. Examples include

pre-cast and prestressed concrete products, structural steel and custom signal equipment.

The subcommittee recommends that the Department should conduct a pilot project by July 1990 to determine whether time can be saved by the DOT itself prepurchasing some materials and products needed for construction. Contractors would then submit bid amounts less the materials to be supplied by the Department.

Based on the results of the pilot project, the Department should implement this concept, where applicable, on a statewide basis.

Utilities Relocation

Few problems leave contractors in a more helpless state than delays caused by the need to relocate utilities. Entire sections of road are sometimes delayed for telephone wires, gas lines and cable television lines. Department of Transportation records show that 578 days were added to road contracts between July 1987 and January 1988 due to utility relocation delays. Such delays – particularly those involving work on crowded roads and busy intersections – are significant.

Many times, the problem is not so much the actual work involved in relocating the utility as it is in mobilizing utilities personnel and procuring materials with which to perform the relocation. Current Department contracts contain clauses disallowing any responsibility for relocation of utilities, causing the contractors to wait for the utility to relocate its facilities.

On the other hand, in the past some utilities have been moved in advance of a DOT project that was delayed for several years or never completed.

The subcommittee recommends the following improvements:

- Make certain that a DOT project will be initiated as scheduled before requesting a city or utility company to move utility lines;
- Allow the prime contractor for a road or bridge project to hire a subcontractor for utility relocation so that accountability will be clear;
- Bid contracts for right-of-way clearing earlier so utility companies will know when the clearing will be completed and a more reasonable schedule can be predicted for line relocation;
- Make contractors responsible for certain classes of utility work for which they can qualify (i.e., water and sewer) and have the utility reimburse the Department of Transportation for improvements made.

Utilities relocation is addressed in greater detail in a subsequent section of this report.

Few problems leave contractors in a more helpless state than delays in relocating utilities.

Contractors should be authorized to perform certain types of utility relocation work for which they can qualify (ie., water and sewer).

Highway paving cannot begin until base thickness measurements have been made. Delays during peak workload periods may expose unpaved base material to rain damage.

Instead of having to wait for DOT lab technicians to schedule time and travel to work sites, DOT project personnel or Construction Engineering Inspection consultants should perform quality acceptance soil base inspections.

Private CEI Contracts

The Department of Transportation should increase its use of private engineering firms to handle Construction Engineering and Inspection (CEI) for more timely decisions and smoother paperwork flow. The Department should include incentive/penalty clauses in contracts to encourage early completion.

Commercial Testing Laboratories

Department of Transportation laboratories test materials such as asphalt, concrete, soils, aggregates and limestone. The Department's ability to perform materials testing and research should be preserved to ensure that it maintains a leadership role in this field. However, as its workload expands due to expanding transportation demands, utilization of commercial testing laboratories also needs to increase.

The subcommittee recommends increasing DOT's current efforts to contract with commercial testing laboratories to meet expanding program needs and to save time in sampling, transporting and reporting processes.

Soil Base Inspection Procedures

Quality acceptance inspections and depth measurements required to authorize paving of soil aggregate bases are handled by Department of Transportation staff assigned to each district's materials testing laboratory. Usually, by the time of this inspection the project is well under way and many obstacles have been resolved.

However, paving cannot begin until base thickness measurements have been made and minimum specification compliance is achieved. Delays during peak workload periods may expose unpaved base material to rain damage.

The subcommittee recommends that instead of requiring DOT lab technicians to schedule time and travel to work sites, allow DOT project personnel, CEI consultants or contractors under their supervision to perform quality acceptance inspection services for all soil aggregate bases.

Limerock Bearing Ratio Test

The Limerock Bearing Ratio Test (LBR) is used as a field test to verify compliance with design strength specifications for subgrade materials during construction. This procedure was originally developed as a laboratory test. It is not well suited for on-site use because of the time required to collect, transport, prepare and evaluate soil samples.

The subcommittee recommends that the Department identify alternatives to the Limerock Bearing Ratio Test. Using less time consuming tests or doing pre-design testing of sub-grade materials to reduce the frequency of testing are strategies that should be pursued. Additionally, pre-designed mixes using commercial materials to establish a sub-grade working platform should be utilized.

Design/Build: An Innovative Road Building Experiment

The Department of Transportation is conducting an experiment that combines road and bridge design and construction phases. This legislatively authorized pilot program is a significant move toward time savings in project planning and bidding. It sets new criteria for key procedures with the goal of eliminating unnecessary steps and facilitating maximum design creativity and potential cost savings.

Background

The current system of designing and constructing roads and bridges in Florida is characterized by time consuming and costly redundancy. This process requires:

- Public advertising for Letters of Interest to perform design work;
- Review and selection of firms to submit design proposals;
- Request for design proposals;
- Review of proposals and selection of a design firm;
- Completion of design;
- Advertise for and qualify contractors;
- Request construction bids;
- Award to the low bidder;
- Project construction; and
- Construction inspection.

This system is not time efficient, taking from four and one-half to nine years to complete a typical DOT road project. It results in substantial increases as land and construction costs escalate. It also results in incalculable economic damage by lengthening the negative impact of construction on roadside businesses and delaying the time before road improvements benefit the public.

In addition to the Department of Transportation's "T over Two" initiative discussed in the previous section, the design/build process can provide the public with more expeditious road improvements. By definition, design/build allows for significant innovation and savings by integrating the present system into a concentrated process whereby construction can begin as soon as contractual agreements are reached.

This concept is borrowed from the private sector where it has proven to be

The design/build process is borrowed from the private sector, where it has proven to be successful in selected cases.

The design/build team is responsible for a road project's design, permitting, construction and subsequent performance. This should help to lessen traditional finger pointing between engineers and contractors.

successful in selected cases. The Departments of Transportation in Kentucky, Georgia, West Virginia and Tennessee have used it on several bridge construction projects.

In an effort to determine the cost effectiveness of this approach, the 1987 Legislature authorized the Florida Department of Transportation to undertake up to $50 million worth of demonstration projects in which design and construction are combined under a single contract. The pilots cover four types of projects:

- Road Resurfacing;
- Bridge construction or replacement;
- Multi-lane new construction or reconstruction; and
- Buildings and parking garages.

Design/Build Advantages

Section 337.11(5), Florida Statutes, defines potential advantages of the design/build experiment as time savings, cost reduction, experience to be gained and use of state-of-the-art methods. The subcommittee finds the following advantages of design/build:

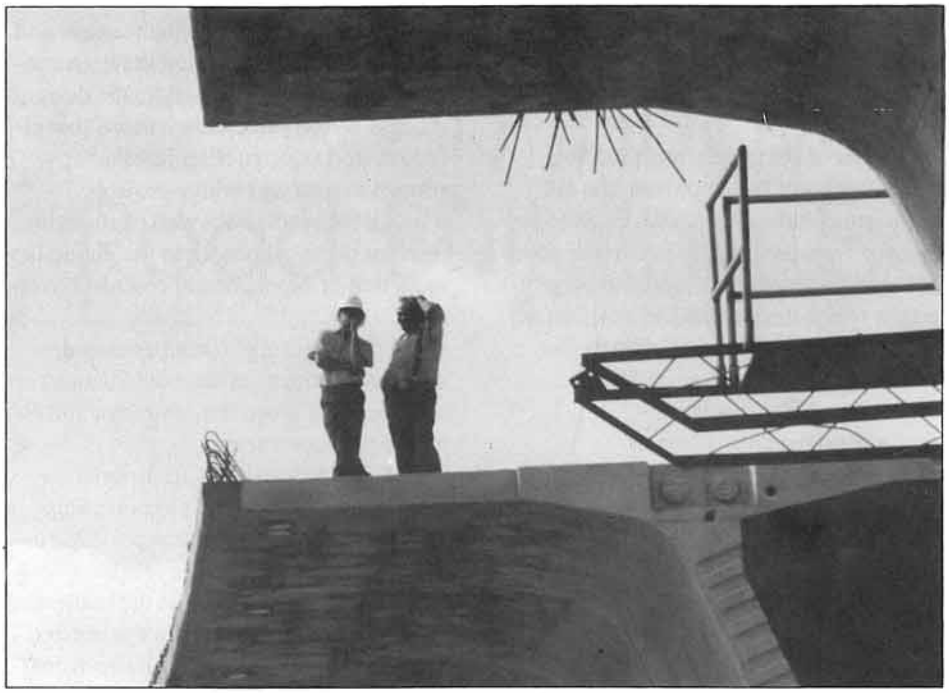
In conjunction with accelerated right-of-way acquisition and other innovations, the design/build method can contribute significantly to the "T over Two" goal of **halving the time** required for completing road and bridge projects.

Marriage of design and construction should promote quality enhancement and cost savings. Collaboration between contractors and designers early in the design process is likely to **create a more cost effective and construction feasible approach** to road and bridge projects through the process of value engineering. A major potential benefit to the public is reduction of supplemental costs and overruns.

"Fast-tracking" (simultaneous design, cost estimation and construction) is more feasible when the contractor and engineer **work as a team.**

The Department of Transportation can initiate design/build projects using general performance criteria provided to the design/build team. The resulting "performance standards" versus the traditional "quantities" approach **shifts the burden of including code required items from DOT to the design/build team.** This means that if a change order results from error or omission in the design, it is the contractor's responsibility, not the Department's.

The design/build team has single-point responsibility for the project's design, permitting, construction and performance. This should **help to lessen traditional finger pointing** between engineers and contractors. Moreover, time and manpower expended by the DOT in the bidding process, reviewing proposals



The Florida Legislature has authorized the Department to undertake up to $50 million worth of design/build projects.

and monitoring project phases should be greatly reduced.

Design/Build Concerns

The subcommittee has examined and made findings on several design/build concerns.

The most critical concern revolves around the "fox guarding the hen house" metaphor. Specifically, how will the design engineer guarantee the comprehensiveness of the plans? Will the contractor use the best long-term methods of construction vs. techniques that simply maximize short-term profits when the engineer's fees are being paid by the contractor? And will the state be at a disadvantage during the construction monitoring phase of a project, when DOT typically has a "second pair of eyes" on the job in the person of its inspection engineer?

The subcommittee finds that the design/build process provides for independent testing laboratories and surveyors to perform Construction Engineering Inspection (CEI) as well as engineering review by the Department. The scope and independence of these reviews assures "second pair of eyes" quality control to the same extent as the traditional delivery process.

A second concern is how the Department of Transportation can ensure the best price for contract supplements necessitated by changed conditions or subsequent information if the contract is tied to one contractor for a lump-sum price.

The subcommittee finds that the number of contractors is not a problem. The cost of a supplemental agreement for traditional construction is usually based on a quantity change of items whose unit price has already been established in the contractor's bid.

This is not true for design/build, where the contractor's bid is a single lump sum price. In fact, this problem is significantly reduced in design/build because the use of performance standards puts the burden of anticipating conditions on the contractor.

Additionally, the Department can ensure competitive prices for changes made in a design/build contract to the same extent it can with traditional contracts through the use of previously quoted unit prices for most work, and negotiation in those few circumstances not covered by unit prices.

Moreover, design/build inherently assures fewer changes arising from design errors or omissions, or from pre-existing site conditions, because the design/build contractor is charged with greater responsibility under these circumstances.

The most critical concern about design/build revolves around the "fox guarding the hen house" metaphor.

Nine design/build projects totaling $24 million are currently under way or scheduled.

DOT's 100 point scoring system for evaluating technical proposals and weighing price proposals represents a good faith effort to institute an objective method to simultaneously consider price and non-price variables.

The third concern is that the contractor's performance bond normally covers only the construction phase of a project. The added liability for design increases the risk as well as the coverage period. Also, are there problems associated with increased liability responsibility and costs for design/build contractors?

The subcommittee finds that the inherently greater liability of the design/build contractor actually results in his assumption of *more* responsibility for overall performance of the finished product. If a post-completion problem arises, the Department can look to a single contractor and it has an enforceable, bonded warranty covering both design and construction.

The Department is dealing with the liability question by revising its requirements to include project insurance to cover design liability for a five to ten year period following construction. The cost of this coverage is expected to increase the lump sum contract bid price by one to 1.5 percent.

Additional Findings

The subcommittee finds that the Department of Transportation has aggressively administered the legislatively mandated design/build demonstration program to date. Nine design/build projects totalling $24 million are currently underway or scheduled. They include five resurfacing jobs plus one of each of the following: a major bridge expansion, a bridge widening, a multilane project (turnpike widening) and a one story maintenance and construction office.

The subcommittee finds that the Department has developed a sophisticated 100 point scoring system for each type of project to evaluate bidders' proposals in terms of:

- Technical criteria – quality of design;
- Management criteria – likely quality of the final product; and
- Project schedule – how quickly the design/build team will commit to building a project and the probability that this commitment will be kept.

Final project selection is made by dividing each bidder's price by his score on these three criteria and awarding the job to the contractor with the lowest adjusted score. The alternative is to throw out all of the proposals and re-bid the project.

The subcommittee finds that success of the design/build experiment will depend heavily upon the quality of the following:

- The criteria presented by DOT to design/build bidders, including scope of

work and services; criteria for contractor prepared design; and technical and price proposal specifications.

- The systems developed by DOT for evaluation of design/build teams and the proposals themselves. DOT's 100-point scoring system for evaluating technical proposals and weighing price proposals represents a good faith effort to institute an objective method to simultaneously consider price and non-price variables.
- DOT's ability to monitor each project after contract award to assure that the design/build team's natural incentives to cut costs will not affect the long-term quality of the project.

Recommendations

While the ultimate success of projects initiated under the design/build method may not be known for years after construction is completed, many aspects of the design/build program can be evaluated in 1989. Accordingly, the subcommittee recommends that the Department of Transportation, in documenting the success of the design/build experiment and reporting to the Legislature, place particular emphasis on the following:

- Determine how the initial design criteria provided to design/build teams can best be structured so that subsequent plans and bids are compatible with the bidding process while allowing maximum creativity by the design/build team.
- Determine how the initial design criteria and contract can best place the burden on the contractor to provide for such items as utilities relocation, drainage, permits, etc.
- In areas where healthy cost saving competition is limited, consider subsidizing – through a system of stipends – part of the cost of preparing proposals on complex projects. Such a system should be limited to the second and third place bidders, and may provide for stipends of as much as $10,000 on multimillion dollar projects. This has worked well with other agencies using design/build, and the Department may realize cost savings in staffing and consultant fees, plus an increased level of competition for the work. A follow-up evaluation should be conducted by the Department to determine by how much competition has been increased at what cost.
- In cases where designs presented are not technically accurate and/or cost proposals are not comparable and all must be rejected, develop a re-bidding procedure to quickly generate the lowest bids based on the best plans.
- Determine the optimum stage of design (i.e. 30 percent of plan completion) at which the design/build contract should be awarded. This will involve a trade-off between time savings versus plan completeness.
- Determine the extent to which construction can proceed prior to completion of final plans in order to speed up the road building process.
- Determine how the design/build method can improve the process of right-of-way acquisition to save both time and money. For example, a major obstacle of obtaining some right-of-way is to show *necessity.* This may be established earlier by using the design/build approach.
- Determine the optimum mix of responsibility and accountability between design/build consultants and in-house engineers that DOT needs to properly monitor and evaluate the construction process after a contract has been awarded. This will help prevent contractors from taking advantage of the system in order to make a short-term profit by reducing the quality of materials or workmanship.

The Department should evaluate how the design/build method can improve the process of right-of-way acquisition to save both time and money.

The Department must determine the optimum mix of responsibility and accountability between design/build consultants and in-house engineers to help prevent contractors from making a short-term profit by reducing the quality of materials or workmanship.

Reducing Right-of-Way Acquisition Time and Cost

The cost of right-of-way acquisition in Florida is out of control. The culprits: historically inadequate financing mechanisms and time delays that drive up costs; a convoluted attorney fee structure that greatly discourages land owners from negotiating in good faith with the state; standoffs with local governments and land developers; and even the announcement of a proposed project, which *itself* immediately increases costs.

Correcting this situation presents a tremendous challenge. But it can and is being done. A recently approved constitutional amendment authorizing bonding for right-of-way acquisition will help significantly. The subcommittee has identified several additional areas for action to help free the Department of Transportation from unnecessary conflict and red tape. These reforms can save citizens and drivers millions of dollars currently being wasted on auto repairs, and hundreds of thousands of hours needlessly wasted on Florida's roads each year.

Background

The combination of Florida's historically inefficient land acquisition laws and escalating land values has resulted in a dramatic upward trend in the price of right-of-way. The average cost per parcel since 1976 has increased more than seven fold, from $14,000 to $104,700. The Department of Transportation expects cost increases of almost 100 percent on major Southeast Florida urban projects from beginning to completion of property acquisition.

Moreover, the cost of right-of-way now exceeds that of construction in some DOT projects. For example, right-of-way for three segments of Broward County's I-595 project exceeded construction costs ($80 million vs. $71.4 million.)

Florida's right-of-way acquisition program is one of the nation's largest. In the last three years, the Department has bought over 3,600 separate parcels of property, conducted more than 7,000 property appraisals and relocated over 1,100 individuals or businesses.

During this period, the DOT obtained

836 eminent domain final judgments totaling $152 million. In conjunction with these judgments, it paid $18.5 million in attorney fees and costs on behalf of landowners alone. This excludes the cost of the Department's counsel, witnesses, and associated charges of processing lawsuits which totaled approximately $12 million.

Recommendations

Implementation of the following subcommittee recommendations can significantly reduce right-of-way costs and lead to more productive, efficient land acquisition practices in building Florida's much-needed roads.

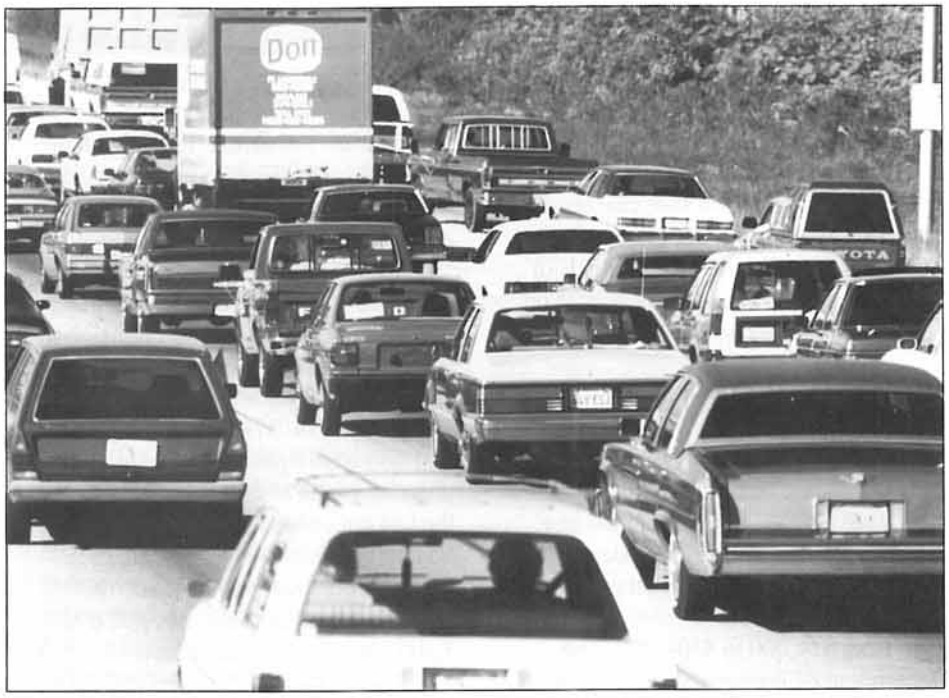
- The recently approved constitutional amendment authorizing bonding for road and bridge right-of-way acquisition should be expeditiously implemented with proper controls. It will help offset growth-related and speculative price escalations.
- The Department should implement recent advantageous changes in state right-of-way law by July 1, 1989. Until earlier this year, DOT's right-of-way acquisition was contingent upon whether or not a road was fully engineered. This was due to the courts' tendency to use design and engineering studies to satisfy the requirements of public necessity.

The 1988 Legislature provided for a strong program of *advance* right-of-way acquisition in Senate Bill 392. It also expanded the ability of state and local governments to condemn right-of-way based upon preliminary engineering and documented need.

- Sections 73.091 and 73.092, Florida Statutes, should be further amended to more reasonably limit payments to property owners' attorneys. The 1987 Legislature enacted a first-step limitation on payment of attorney fees. However, Florida's acknowledged lavish treatment of condemnation attorneys still encourages litigation and unnecessarily extends pre-construction schedules. According to the Department of Transportation, this costs our taxpayers at least $12 million annually.

There is no legitimate reason for Florida's citizens to continue subsidizing relatively few condemnation attorneys at the expense of all who need an improved road system. It is essential that the law and DOT put taxpayers and road users on a more level playing field with those attorneys who abuse the law.

- A major factor in the escalation of land values and right-of-way costs is local government land development decisions. Section 337.273, Florida Statutes, encourages state and local government cooperation, but it does not mandate transportation corridor protection at all levels of government.



The average cost per parcel of right-of-way has increased more than seven fold (from $14,000 to $104,700) since 1976.

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The Department expects almost 100 percent increases in the cost of right-of-way on major Southeast Florida road projects from beginning to completion of property acquisition.

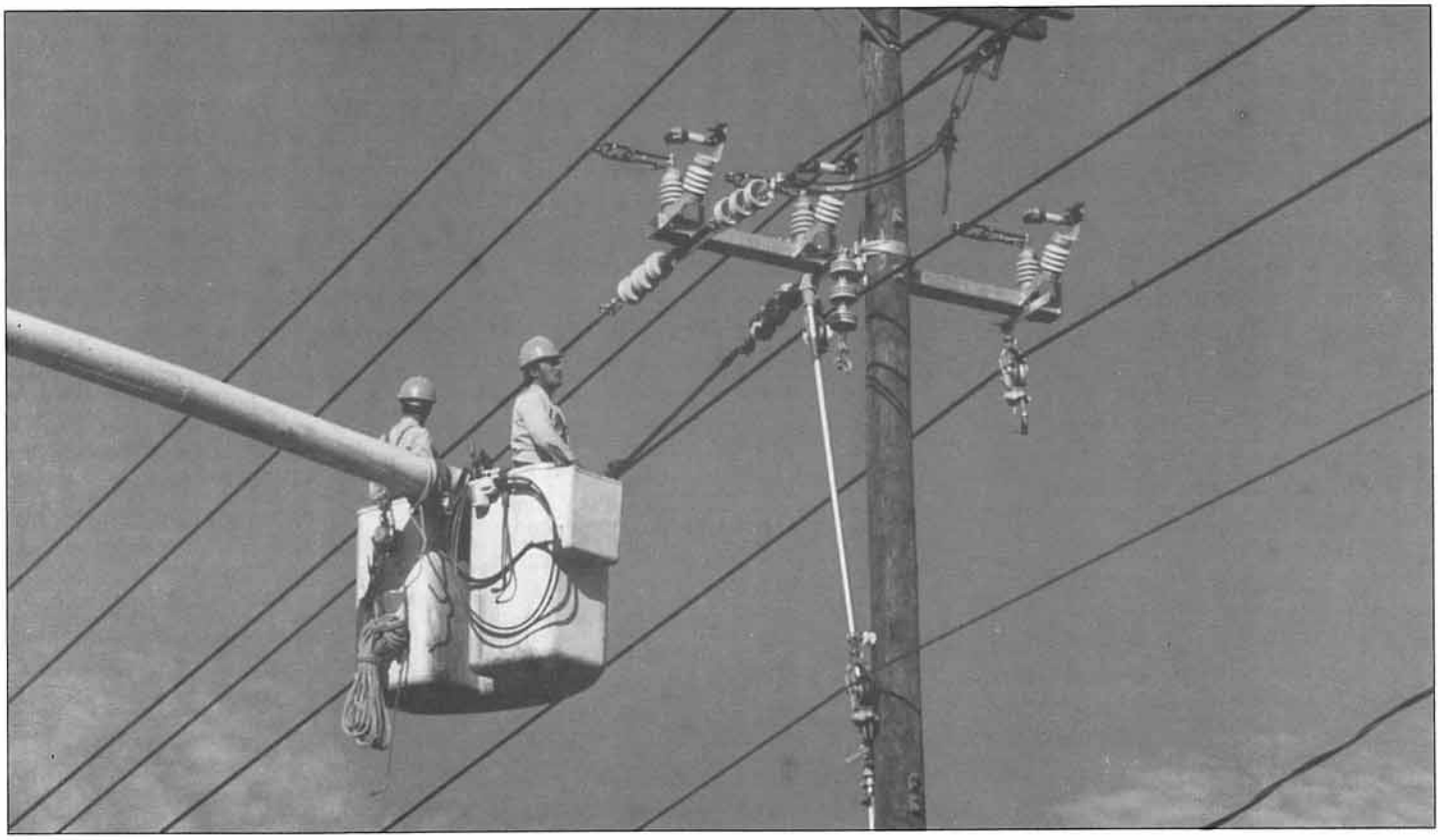
There is no legitimate reason for Florida citizens to continue subsidizing a relatively few land condemnation attorneys at the expense of all who need an improved road system.

Bonding approved by Florida voters in November 1988 and advance purchase authorized by the 1988 Legislature are major positive improvements for Florida's right-of-way acquisition program.

The 1989 Legislature should amend Section 337.273 to require local governments to protect corridors and rights-of-way of city, county and state transportation facilities – consistent with reasonable protection of individuals' property rights.

- The 1989 Legislature should mandate development of coordinated and non-contradictory state transportation plans, local government comprehensive plans and land development regulations. These measures should promote consistency with adopted, longrange plans of Metropolitan Planning Organizations.
- MPO's should not alter established state road project schedules except under extraordinary circumstances such as a documented reduction in need. If MPO plans are constantly changed, it becomes more costly and much more difficult for the Department of Transportation to make needed improvements on a timely basis. The Department should document problems with the decision making processes of specific MPOs for timely discussion and resolution.

Utilities Relocation



Talk about delays. Problems in relocating utilities for needed road work cost a total of more than 100 work days per month. Redistribution of duties, better planning and a higher level of accountability can help alleviate this problem. Changes recommended below can get the job done better, quicker and for less money.

Background

While utilities play a significant role in the design and construction phases of transportation improvements, their relocation often delays projects. For example, utilities related problems caused 1,262 extra work days, or almost 20 percent of the 6,804 days of construction time extensions granted by the Department of Transportation in FY 1986-87.

Recommendations

The subcommittee proposes several improvements to the utilities relocation process:

- Utilities should be relocated *prior* to the beginning of road construction where conditions permit.
- Highway contractors, rather than utility companies, should perform relocation work wherever feasible (i.e. on water and sewer facilities).
- Since road construction delays involving municipal utilities seem to be largely the result of budgetary and administrative decision making processes, local officials and top Department of Transportation managers should implement accountability measures to prevent delays. These should include penalties for nonperformance and failure to meet agreed upon schedules.
- The Department should use measures such as moratoriums on pending permit applications for other jobs to improve utility company compliance with statutorily mandated utilities relocation time limits. The current 30-day notice of relocation requirement is not working effectively.
- Alternative utilities engineering and construction cost funding mechanisms should be explored. One such alternative is to allow the Department to assess a permit fee at the time of installation of utilities and use this revenue source as a means of financing subsequent utility relocation costs.
- Legislation is needed to make joint project agreements mandatory for relocations involving two or more units of government.

Improved Utilization Of Federal Funds

The Department of Transportation should have more discretion and management flexibility in making decisions regarding state and federal funding sources for road projects. Locking in from the outset how a project must be funded inhibits streamlining the project's development and execution. Increased flexibility can be accomplished by reducing highway production appropriations categories from 73 to a more reasonable number.

It may be expedient to use federally generated funds, with their attendant regulatory and environmental complexities, on less complex projects with higher matching rates such rural interstate highways.

Since granting federal funds is often contingent upon proof of a viable Disadvantaged Business Enterprises (DBE) program, and since the Department of Transportation favors ensuring the inclusion of an appreciable number of small and disadvantaged firms in its bidding process, this important program should be closely scrutinized and strengthened.

More than $500 million worth of Federal Highway/Airport Trust Funds impounded in the name of balancing the federal budget should lawfully be returned to the State of Florida to help alleviate our inadequate transportation infrastructure.

Background

Although most restrictions on the utilization of federal funds for road projects are contained in federal laws and regulations, the subcommittee finds there are at least four areas within the purview of state government which, with some modification, can result in more efficient use of these resources.

State Appropriations Categories

The Florida Legislature controls the use of funds for the Department of Transportation's road and bridge construction/maintenance program through 73 separate state appropriations categories. At issue is whether this excessive number

of categories, coupled with locking in from the outset how a project must be financed, unduly constrains Department of Transportation management flexibility in determining the most cost effective means of funding a project.

For example, the Department's resurfacing program is financed through four separate appropriations categories: interstate highway resurfacing; other federal aid highway resurfacing; 100 percent state financed resurfacing; and Florida Turnpike construction. As resurfacing projects are developed, it may be determined that some should more appropriately be financed with federal aid rather than with state funds. Often times it is not known which source is preferable until project development activities are well underway.

Additionally, DOT programs for new highway construction, bridge repair and replacement, and traffic operations are each funded through at least two separate appropriations categories: one for federal aid and another for 100% state financing. Funding for consultant design is appropriated through no less than seven separate categories.

Although the Department is permitted to administratively transfer appropriations between categories, there are limits. Reducing the number of appropriations categories would contribute to a more streamlined and efficient project development process, thereby favorably impacting utilization of federal highway funds. For example, there is a single appropriation for all Florida turnpike construction including road and bridge construction, resurfacing, etc., giving this program a high degree of management and budgetary flexibility.

The Department suggests reducing the current 73 federal/state appropriations categories to just six categories. While this may be too drastic, the Department's proposal should be subjected to careful evaluation.

Selection of Projects for Federal Funding

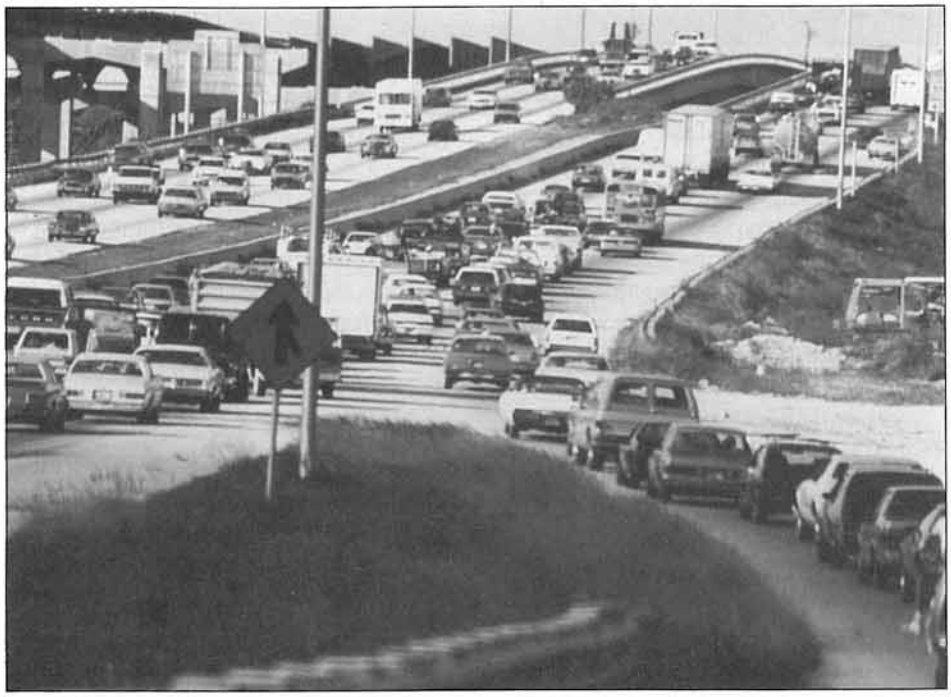
Under the Federal Aid Highway Program, states receive funds through five major categories.

- Interstate Highways
- Primary Roads (these are typically U.S. numbered routes)
- Urban Roads
- Rural Secondary Roads
- Bridge Replacement and Repair

Under federal law, states are not bound strictly to these categories when deciding which projects to finance with federal aid. For example, up to 50 percent of a state's annual apportionment of federal funds for rural secondary roads may be transferred, at the state's option, for use on primary roads. Alternatively, a

Often times, the Department does not know whether federal or state funding (or which specific state appropriations category) is most advantageous until project development is well underway.

Reducing 73 state appropriations categories for highway production to a reasonable number would contribute to a more streamlined and efficient road and bridge development process.



The Federal Highway Administration has imposed a limitation on its participation in right-of-way acquisition until the quality of Florida's right-of-way appraisals substantially improves.

The federal participation rate on Interstate projects is 90 percent vs. 75 percent on primary road projects – and there is often less red tape. Thus, selected Interstate projects may be more conducive to cost efficient and expeditious use of federal funds.

state is allowed to use all of its federal primary funds on the Interstate highway system.

Up to now, the Florida Department of Transportation has made its Five Year Transportation Plan consistent with the Federal Aid Highway Program structure. This requires using federal funds in the same structure as they are received, i.e., through five separate program categories. However, it may be to the Department's advantage to focus more federal aid on the *least* complex projects and/or where federal participation rates are highest.

This is because the level of effort required to comply with federal laws and regulations is generally in direct proportion to the complexity of a project. For example, federal aid projects on urban primary roads are typically more complex than projects to modernize rural Interstate highways. It may be advantageous to use federal primary funds for Interstate highway modernization projects.

Primary road projects often pass through congested urban areas, making right-of-way acquisition extremely expensive. Additionally, such projects typically require compliance with the cumbersome federal environmental process. Conversely, projects on the Interstate system, such as adding travel lanes in rural areas, frequently can be done within existing rights-of-way, subjecting them to fewer federal requirements.

Moreover, the federal participation rate on Interstate projects is 90 percent versus 75 percent on primary road projects. Thus, as in the example noted above, selected interstate highway projects may be more conducive to cost-efficient and expeditious use of federal funds.

The Department of Transportation cautions that transferring federal funds from one class of road projects to concentrate in another area may well require additional revenue. The example involving primary road projects and Interstate highway projects could require replacement funding for the federal funds originally programmed for primary roads. This is because the state's interstate highway needs are so great that both interstate and primary funds could be consumed in addressing interstate highway problems, thereby leaving a funding void on the primary road system.

Right-of-Way Appraisals

In 1987, the Federal Highway Administration (FHWA) imposed a limitation on its participation in right-of-way acquisition until the quality of Florida's right-of-way appraisals substantially improved. The limitation is costing Florida approximately $3 million annually in

interest costs alone resulting from state funds having to be expended where federal funds could be used.

The FHWA has limited its payment of right-of-way costs to the amount of the initial approved appraisal on a parcel. This is because of its concern that the Department's appraisal process does not conform to federal standards.

The Department has implemented a program to bring appraisals into conformity and the FHWA has completed an initial review of the results. While it is encouraged by the improvements, it is leaving the sanctions in place until it becomes satisfied that the results reflect a program change and are not just isolated instances of improvement.

Disadvantaged Business Enterprises (DBE)

Setting minority subcontracting goals has been a federally required part of the DOT road and bridge construction program since the mid 1970s. The program has remained basically unchanged in that a small percentage of certified minority contractors still perform the bulk of the work subcontracted to meet DBE goals.

The subcommittee finds that strengthening of the DBE program is sorely needed. Reason: It is not achieving its intended goal of ensuring that an appreciable number of minority companies become certified and gain experience in highway and bridge construction programs – thereby allowing them to grow, prosper and compete with non-minority companies on an equal basis.

Recommendations

The subcommittee recommends that the Department of Transportation:

- By July 1989, identify reasons why the Disadvantaged Business Enterprises program is not satisfactorily achieving the goal of helping minority contractors grow and compete with non-minority companies. For example, a bond and training program authorized by the 1984 Legislature has never been funded for implementation. The absence of this hurts the DBE program.
- Determine the ability of minority contractors to undertake each category of work that DBEs are eligible to perform. This can be accomplished through review of applications for the DBE program.
- Increase the number of projects set aside exclusively to be bid on by minority contractors beginning with the Spring 1989 lettings.

The Department has developed a legislative proposal for the 1989 General Session that seeks to improve this

Strengthening the Disadvantaged Business Enterprises program is sorely needed.

By July 1989, the Department should identify reasons why this program is not achieving its intended goal of ensuring that an increasing number of minority companies compete with non-minority companies on an equal basis.

$20 billion worth of highway/airport trust funds should not be withheld from the states simply to help Washington politicians appear that they are reducing the federal deficit.

Federal political gamesmanship on the highway/airport trust fund issue is in direct conflict with the letter and spirit of the laws that established these trust funds to help the states and local governments with their transportation problems.

program. The subcommittee supports the following changes:

- Require DBE expenditures to be a percentage of the funds in the State Transportation Trust Fund which are spent on construction and maintenance contracts.
- Consider expanding certification criteria to include the capability of a firm to perform work required by the Department. This would allow a more realistic assessment of participation goals and "supply" of qualified DBE's. A determination of whether this would significantly increase the Department's liability should be made.
- Provide limited law enforcement authority to investigative officers in the DOT Inspector General's office to deal with DBE fraud and contract crime.

Impoundment of Federal Highway/Airport Trust Funds

The combined balance of the Federal Highway Trust Fund and the Airport Trust Fund is approximately $20 billion. These funds have been generated over the years from "user" fees such as gas tax monies and airline ticket tax revenues, to be returned to the states and local governments for construction and maintenance of roads and airports.

Large surpluses in both trust funds indicate that, although these funds are collected solely from users, the monies deposited are not being fully returned to the states. Florida's lawful claim on these funds amounts to over $500 million, substantially less than our proportionate share (based on population) due to a federal formula which shortchanges our state.

Given our status as the nation's fastest growing major state and our inadequate transportation infrastructure, Florida's need for these funds is immediate and significant.

Because of the ongoing budgetary battles between Congress and the White House and failure to balance the federal budget, numbers games are being played with Highway/Airport Trust Funds (and others such as Social Security) to make the budget deficit appear less severe than it actually is.

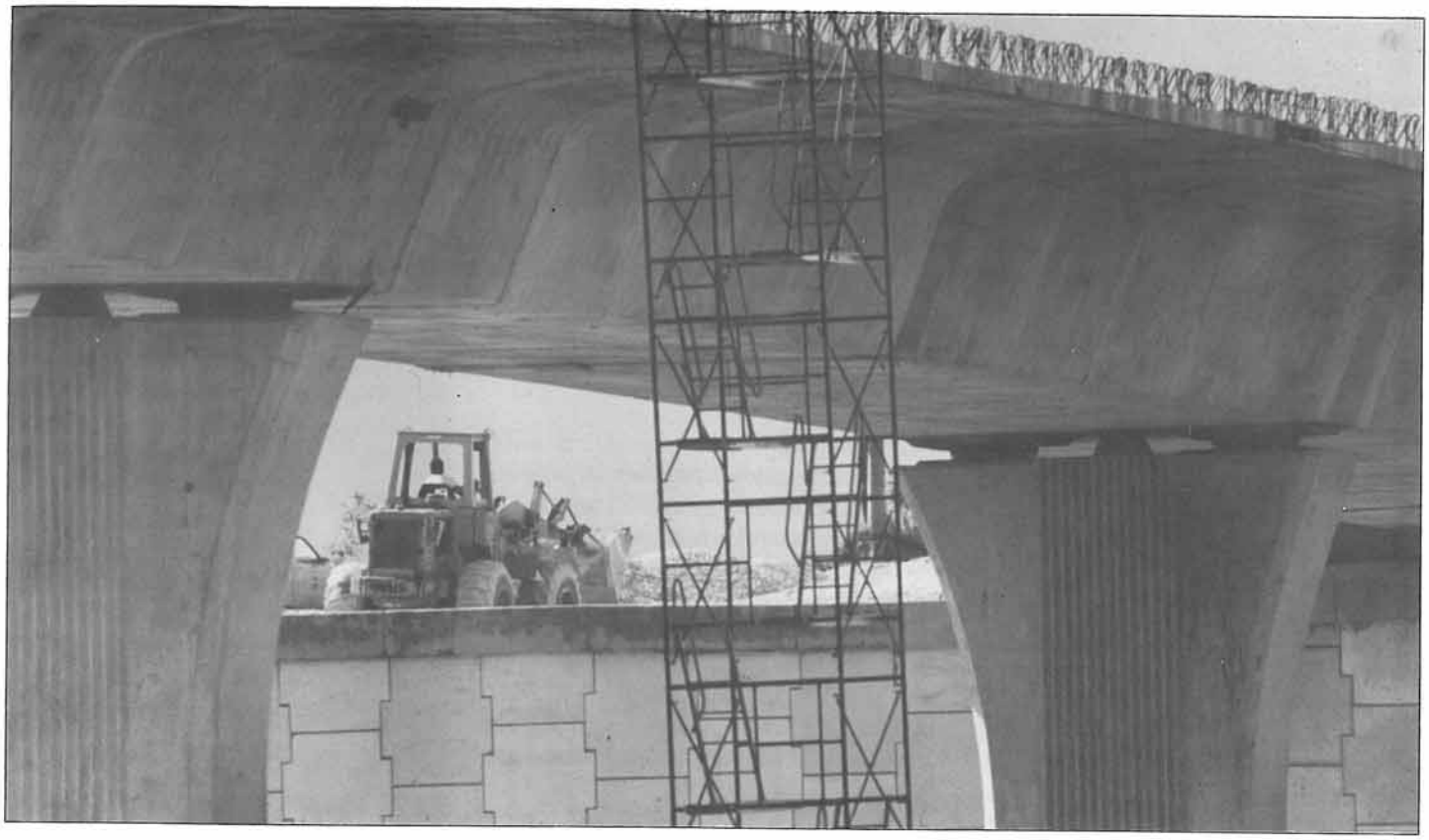
Highway/airport trust funds should not be withheld from the states simply to help Washington politicians appear that they are reducing the deficit. Such political chicanery is in direct conflict with the letter and spirit of the laws that established these funds to help the states and local governments with their transportation problems. It is unfortunate that federal political gamesmanship more adversely affects rapidly growing states such as Florida than slower growing states which can more adequately meet their transportation needs.

Recommendation

The subcommittee recommends that the Governor's Office and the Florida Congressional delegation, with all the available resources at their command, should work vigorously to release impounded trust funds for prompt and legal distribution to the states. Simultaneous with this effort, highway lobbying groups should insist that these highway/airport monies be dispersed immediately for their intended use.

The Governor's Office, the Florida Congressional delegation and highway lobbying groups should insist that these highway and airport monies be lawfully dispersed for their intended use.

Privatization



Opportunities for improved competition, efficiency and productivity, as well as cost savings, make the use of privatization worth pursuing. For example, privatization of complex road plan design, review and approval of selected shop drawings – as well as inspection and approval of selected construction work – may save the state's road building program considerable money and time. Privatization of road maintenance may also yield savings.

In each case, however, competitive selection is absolutely essential to achieve the greatest service and greatest savings. Privatization should not be a shill for greater profit to private firms working with the DOT.

The subcommittee recommends elevation of this important and wide ranging topic for further study by the Partners in Productivity Task Force during the coming year.

Background

During the past several years, the Department of Transportation has increased the use of design and general management consultants. In 1987-88, the Department let 225 contracts worth $150 million (versus $104 million in 1986-87 and $55 million in 1985-86).

The trend in Florida is clearly toward greater privatization of road building. The subcommittee notes, however, that another megatrend state – California – is a recognized transportation leader (particularly in freeway design) which historically has made minimal use of privatization.

Privatization Initiatives

Preliminary Engineering

A Department study regarding privatization of preliminary engineering suggests that the DOT is getting good value for consultant work. In FY 1987-88, half of the preliminary engineering was done outside the Department.

The subcommittee recommends that the level of effort required by in-house personnel on work performed by consultants

should be analyzed to determine whether it is necessary. A change in the scope of consultant work to require less in-house review, as well as use of general consultants for review of other consultants, should be explored with the goal of re-allocating in-house resources as the use of consultants increases.

Maintenance

During FY 1986-87, the Department awarded 273 maintenance and operations contracts worth more than $20 million. In some cases, the primary justification for awarding contracts was a lack of state personnel to perform the identified function. Therefore, a cost analysis/justification was not prepared.

Other activities such as highway lighting have neither a Department cost history nor experienced personnel to perform the required maintenance. Contracts for these services, like all others, should be awarded on a competitive basis. This is the only way to keep quality and costs in check.

DOT's Maintenance and Operations Contracts Program is divided into four sub-programs: Rest Area Maintenance, Drawbridge Operations, Routine Highway Maintenance and Roadway Lighting Maintenance. A 1986-87 comparison of mid-range annual salaries and benefits of state employees performing these functions vs. contracting them out showed substantial savings in some areas and inconclusive results in others.

In 1983, the Jacksonville Transportation Authority entered into a contract with a private firm to provide full maintenance on the JTA facility. The Department of Transportation's estimate for performing routine maintenance on the facility in FY 1982-83 was $404,464, whereas the contractor's bid price was $344,000. The net result was an estimated first year savings of $60,464 or approximately 15%.

Toll Facilities

An initiative to privatize DOT collection of tolls is in the early stages. A private consultant is slated to be selected to prepare a feasibility study which should be completed in FY 1989.

The subcommittee recommends that such a study might better be conducted by the DOT's Inspector General or the Auditor General to check a natural incentive for a private consultant to show the positive feasibility of this approach.

Records Storage

Florida statutes require that a significant amount of Department of Transportation data be retained in storage. Contracting the Department's microfilming needs could generate modest savings. *The subcommittee recommends further study to determine whether this is a cost saving opportunity.*

District Six Experiment

The 1978 Legislature approved creation of the Department of Transportation's sixth district (comprised of Dade and

Privatization is a tool which can be used effectively or poorly. How and where it is used makes the difference.

Competitive selection of contractors is absolutely essential to achieve the greatest service and greatest savings from privatization. It should not be a shill for greater profit to private firms working with the DOT.

PRIVATIZATION BENEFITS NEED FURTHER STUDY

Function	Savings From Contracting Out (1986-87)
Rest Area Maintenance	
With facilities	12.2%
Without facilities	37.1%
Drawbridge Operations	24.8%
Routine Highway Maintenance	Results vary/needs further study
Roadway Lighting Maintenance	Results vary/needs further study

Source: Florida Department of Transportation and Florida TaxWatch, Inc., October 1988

The Florida Turnpike is a sleeping giant. It now has bonding capacity of up to $1 billion.

A pilot program involving the Florida Turnpike is modeled after the Orange County Expressway Authority, where a skeletal staff is maintained and consulting engineers are hired on a project-by-project basis to design and inspect road construction work.

Monroe Counties). From the beginning, benefits of heavy reliance upon the private sector for handling major components of the new district's programs were realized.

Rather than attempting to compete with the private sector for experienced transportation engineers or technicians, District Six hired consultants to accomplish a major portion of design and pre-construction activities. This strategy was expanded to include using consultants to handle a major portion of the district's construction engineering and inspection work.

Experience gained by District Six illustrates that the concept of privatization can work well in public road building. However, while promising, this experiment is too limited in scope to draw extensive conclusions. Consequently, the subcommittee concludes that the balance point which maintains the Department's capability to execute its statutory responsibilities while maximizing the use of privatization can only be determined through further experience.

Pilot Project Underway

The Florida Turnpike has been labeled a sleeping giant. It has bonding capacity of up to $1 billion and has not been subjected to any significant operational changes over the past 20 years. The 1988 Legislature provided the potential to expand the turnpike statewide and approved $220 million worth of bonds with additional bond sales to follow as soon as projects become economically feasible. The turnpike's operating structure is also being overhauled to accommodate the new bonding initiative.

A pilot program involving the Florida Turnpike will include privatization of engineering for plan design, review and approval of shop drawings, as well as inspection and approval of the work. It is modeled after the Orange County Expressway Authority, where a skeletal staff is maintained and consulting engineers are hired on a project-by-project basis to design and inspect road construction work. Essentially, the Turnpike will act as a separate DOT district with statewide responsibility. The volume of contracting will be much larger than any single district as the Department anticipates issuing bonds worth close to $1 billion over the next five years.

This pilot program represents a dramatic change from current methods of operation. DOT has seven district offices which supervise numerous resident engineer offices. These engineering offices supervise numerous project engineers,

inspectors, etc. Most laboratory testing of road building materials is done by project engineers and staff in the district offices. As stated in the first section of this report on reducing the time to build roads, more of this function should be done by private firms. District offices would select engineering and testing firms from a prequalified list in much the same manner as they currently select consultants for plan preparation.

Issuing maintenance contracts and inspection of this work is currently largely accomplished out of the DOT district offices. Under the pilot program, it will be bid to contractors in the same manner as road contracts are now let.

The subcommittee recommends that the Department prepare a report on the Turnpike project by July 1990 that analyzes its applicability to other districts for future implementation.

The Bottom Line

Privatization is a tool which can be used effectively or poorly. How and where it is used makes the difference. While privatization holds much promise for cost savings and efficiencies in many areas of government, it is not a panacea. The Department of Transportation should refine its methodology for comparing public/private costs. It is likely that for complex specialized design and construction, private contracting will be cheaper. Conversely, more routine work probably can be handled in-house in a more cost effective fashion.

The subcommittee is concerned that the Department of Transportation strike the appropriate balance between healthy cost saving competition in the private sector versus maintenance of necessary in-house expertise to monitor and exert reasonable control over road building functions.

We recommend elevation of this important and wide ranging topic for further study by the Partners in Productivity Task Force during the coming year.

The Department must strike an appropriate balance between healthy cost saving competition for private sector services vs. maintenance of necessary in-house expertise to monitor and exert reasonable control over road building functions.

Procurement

A key word in procurement is *streamline*. Consolidating contract advertisements, using express mail to speed the contract award process and expediting contract delays prompted by bid protests,are just a few of the tools available to improve DOT procurement. Data base expansion would make historical cost data more readily accessible for negotiating contractual services. And eliminating cumbersome written proposals for non-technical projects would cut proposal preparation and evaluation time.

Increased savings incentives are also crucial. Florida TaxWatch has provided practical ideas on how to provide incentives and reward government employees who seek out ways to curb expenditures. See particularly TaxWatch's *Building A Better Florida: A Management Blueprint To Save Taxpayers Over $1 Billion,* December 1986.

Background

The Department of Transportation's procurement activities involve road and bridge contracts, consultant contracts for design work and materials and supplies (in-house purchases). In 1987-88, the Department of Transportation let almost $1 billion worth of contracts for road and bridge design, construction and other services.

Road and Bridge Contracts

The road and bridge contracting process is governed principally by Chapter 337, Florida Statutes. This process is also structured by DOT Rule 14-22 and the Department's Road and Bridge Contracts Administration procedure dated April 1984.

In 1987-88, approximately $691 million or 72 percent of the Department's procurement was performed by the Contracts Administration Office in Tallahassee. Additionally, about $33 million worth of contracts under $250,000 were handled directly by the districts.

Written advertisements of upcoming projects are placed in newspapers and notices are forwarded to pre-qualified

contractors. Item descriptions of material that will be needed are forwarded to contractors who respond to the advertisement or who are on a Department subscription list of contractors. Concurrently, bid blanks by bid item and required documents are prepared, gathered and reproduced in preparation for future use in the bidding process.

Orders for plans and the bid package are received from interested contractors. Before the plans and bid package are sent to them, contractors are checked for the type of work they have been pre-qualified by law to perform and whether their name appears on a delinquency list.

Bidding contractors then submit their bids, a formal bid opening or letting occurs, and the bids are made public. The bids are checked for accuracy and for necessary documentary inclusions. They are then analyzed and the low bidder is identified.

Availability of funds is checked with the Office of the DOT Comptroller. On federal aid projects, the Federal Highway Administration (FHWA) is also contacted and provided the bid tabulation of the lowest bidder and an acknowledgement that this contractor has provided necessary non-collusion affidavits. The contract is then awarded, almost always to the lowest contractor.

The subcommittee has reviewed a Department of Transportation re-write of Chapter 337 Florida Statutes. We support the following improvements:

- A statutory provision requiring advertisement of road building jobs of more than $250,000 in the *Florida Administrative Weekly* should be eliminated. Under the current statute, only legally pre-qualified contractors may bid on the larger contracts and they are already notified by separate mailing.
- Express mail services should be used for notification of decisions or intended decisions. Current law specifies U.S. Mail. This change will expedite the contract award process.
- The Department should be allowed 30 days following entry of a final judgement or arbitration order to pay the amount owed before interest is charged.

Contractual Services

The Department of Transportation executed contracts for services in 1987-88 totaling about $180 million. These contracts fall into two general types:

Contracts for professional engineering, architecture, surveying and landscape architecture services. Last year, approximately 225 contracts were executed for these services totalling nearly $150 million. Each District is

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Prior to 1988 legislative action, professional engineering, design and landscape architecture and surveying services were competitively bid for quality and price. Under a newly authorized negotiated process, will taxpayers get lower quality or higher cost?

responsible for selecting consultants and negotiating and executing contracts.

Prior to a change made by the 1988 Legislature, these services were competitively bid for quality and price. Under a newly authorized negotiated process, will taxpayers get lower quality or higher cost?

Other services including management consulting, training, automated systems development and equipment maintenance. These are acquired through competitive bidding. Last year, the Department executed approximately 1500 of these contracts totalling nearly $30 million. This process will be fully decentralized by January 1989.

The subcommittee recommends the following improvements in contractual services procurement:

- Restore competitive selection of architects and engineers. Price consideration should be allowed as one factor in making consultant selections. The DOT should not be forced to always select the cheapest price, but rather should be given the flexibility to justify accepting a slightly higher price for a much better product.
- Eliminate the requirement for lengthy written technical proposals for routine, non-complex transportation projects. Interviews should be conducted with the top ranked firms to evaluate their qualifications and approach. This will reduce the time required to prepare and evaluate proposals and expedite the process.
- By July 1989, develop a contractual services data base design to provide for on-line access to historical cost data. This will improve contract negotiations, contractor performance data to assist in ranking selection, and pre-qualification information on consultant firms.

Price consideration should be allowed as one factor in making consultant selections. The DOT should not always select the cheapest price, but rather it should justify accepting a slightly higher price for a much better product.

In-House Purchasing

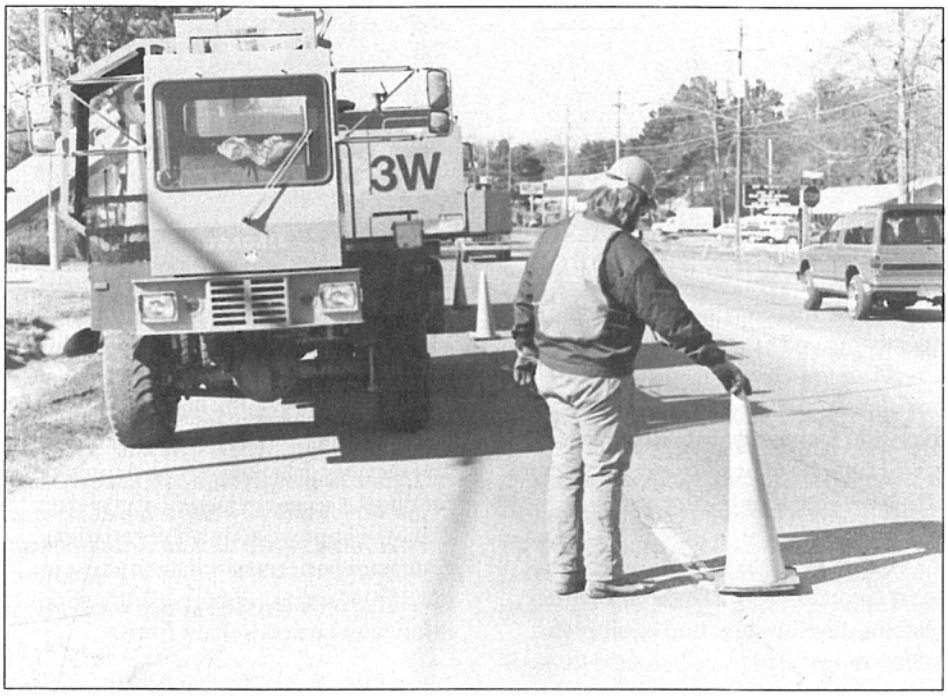
State statutes and administrative rules strictly limit the flexibility of state agency purchasing. For example, all purchases in excess of $3,000 require written, sealed bids containing a specified time and date for public opening. Purchases in excess of $6,000 also require public advertising. The Department of Transportation's purchasing office handles aproxmately $40 million worth of these purchases annually.

The subcommittee finds that these purchases could be handled more productively through implementation of the following recommendations.

- The 1988 Legislature enacted Chapter 88-384, Laws of Florida, which requires vendors to post a bond when contesting Department of General Services

term contracts. The bond is forfeited if the vendor loses the challenge. The subcommittee recommends extension of this provision to cover major bids let by the Department of Transportation and other state agencies.

- Computerized purchasing should replace manual procedures wherever possible. Currently, DOT district paper flow to the Tallahassee central office is largely non-automated. Computerization could speed up delivery of construction materials to work sites.
- A final recommendation should be implemented not just in the DOT Purchasing Office, but throughout state government. It involves the fact that no major incentives are presently in place to encourage state agencies to save appropriated and budgeted money. In fact, a virtual savings *disincentive* system is all too apparent, along with an unwritten policy to "spend it or lose it." Needless to say, this rationale does nothing to curb expenditures, but encourages spending on non-essential items.



The Transportation subcommittee vigorously endorses the 1/3-1/3-1/3 incentive initiative articulated by organizations such as Florida TaxWatch. Under this well-conceived plan, at least 1/3 of any money saved would be returned to the state's General Revenue Fund, up to 1/3 would be used to enhance the work place environment of the saver, and up to 1/3 would be available for worker bonuses.

A virtual savings disincentive system is all too apparent in state government. The motto is "spend it or lose it."

Needed: An incentive savings plan that rewards work units and individual employees who boost productivity to save a portion of their budget without cutting service levels.

Policy and Procedures Review

The Department of Transportation is working to simplify internal policies and procedures by revising outdated, counterproductive policies, cutting out unnecessary procedures, eliminating obsolete documents and combining similar forms. Several additional initiatives relating to decentralization involve streamlining construction contracts and field administration, developing procedures to electronically transmit and receive documents, developing a computerized program for forms control and evaluating the effectiveness of current forms.

Background

Secretary Henderson has determined that obsolete, confusing and counterproductive internal policies and procedures constitute a major stumbling block to improving the Department of Transportation's productivity and efficiency.

The Secretary has directed that the Tallahassee central office work with the DOT districts to examine existing policies, procedures and forms with an eye toward developing new ones to expedite departmental decentralization. To effectively coordinate this process, a Procedures and Forms Control Unit has been established in the Department.

This unit has set a goal of updating, modifying, reissuing or eliminating an inventory of over 855 department policies, procedures and directives by the end of 1988. It is also examining the use of DOT forms, auditing form distribution lists to eliminate unnecessary copies and deleting obsolete forms.

The subcommittee has worked with the DOT Inspector General's office in reviewing existing departmental guidelines and policies with the goal of facilitating revision or deletion of those determined to be obsolete or counterproductive.

Observations

Due to decentralization and the need for additional guidelines as the Tallahassee central office transfers decision-making authority and functions to the districts, new procedures must meet criteria

outlined in the Secretary's memorandum on this subject dated November 1987.

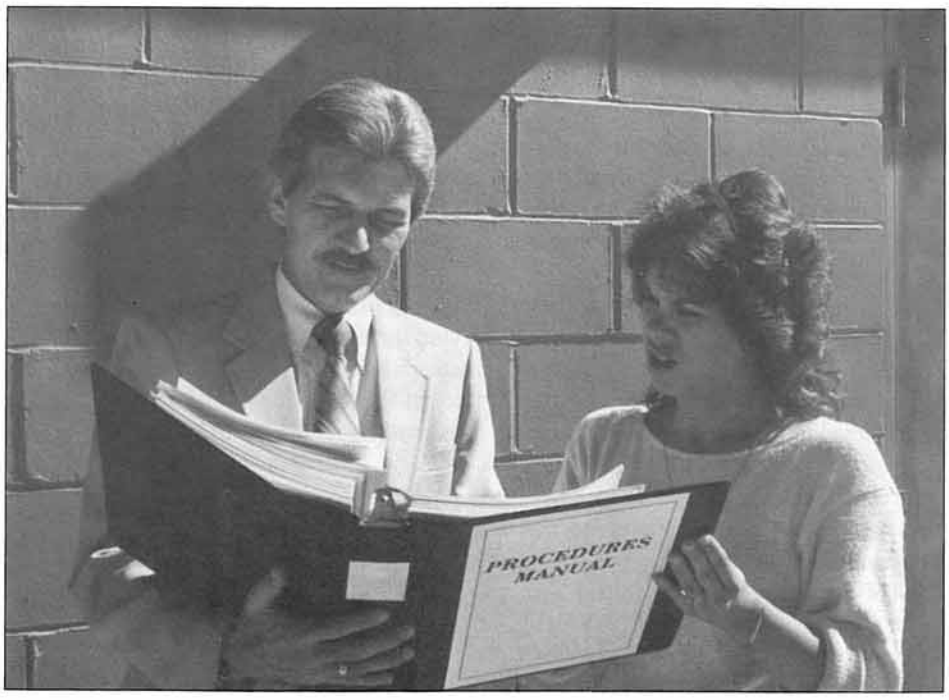
Thus far, the Department's review has resulted in eliminating more than 100 obsolete documents and combining over 25 documents with others relating to the same subject. Although there appears to be some slippage from the overall schedule to date, the Procedures and Forms Unit does not foresee any problems in completing this project on time. Secretary Henderson has directed that the construction industry have more opportunity to review and comment on draft procedures which impact contractors. This may extend the time for complete review of all construction related procedures.

The subcommittee notes the following additional initiatives that are currently underway:

- Secretary Henderson has requested tighter control over formal adoption of FDOT construction policies, procedures, specifications and rules in an effort to allow time to streamline and simplify field administration of construction contracts.
- A procedure is being developed to provide computerized access of current documents from DISOSS, which is an electronic system for sending and receiving documents through the Department's mainframe computer. It has the advantage of allowing employees, department-wide, to retrieve and print current documents.
- A computerized program is being developed to inventory all forms and modify/delete obsolete ones.
- A system is being developed to review all current and proposed forms to determine:
  - Whether the data which the form is intended to collect is available from an existing form;
  - Whether an existing form can be changed to capture the data instead of creating a new form; and
  - Whether one or more similar or closely related existing forms can be combined with any new form(s).

The Department currently has 1,620 official forms. As of this report, review of approximately half of these has resulted in 84 eliminations. This has resulted in a cost savings of $1078 attributed to eliminating current stocking cost at the central warehouse and avoiding restocking. The subcommittee suggests a goal of cutting or consolidating 300 more forms, a modest 20 percent reduction.

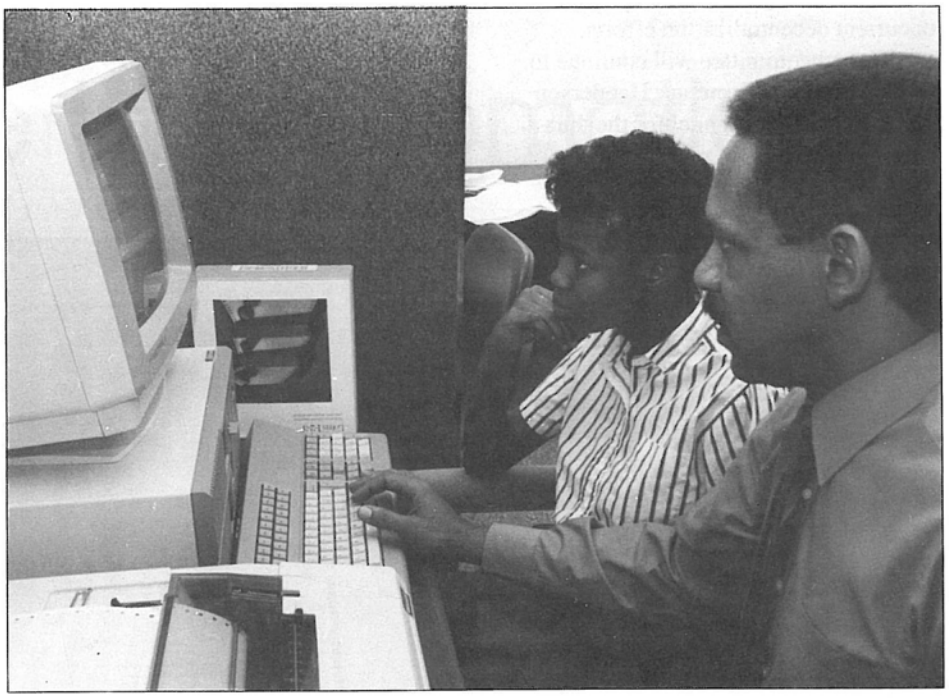
Implementation of these initiatives for improving procedures and forms will make it easier for employees to locate and access the most current policies and operating instructions of the Department. Providing a centralized source of inventory and control to ensure that these



Obsolete, confusing and counterproductive internal policies and procedures constitute a major stumbling block to improving the Department of Transportation's productivity and efficiency.

The Department currently has 1,620 official forms. It should eliminate or consolidate at least 300 of them.

The Department should develop forms design expertise in-house with existing staff and within existing budget.



Monitoring conducted by the DOT central office units of their district counterparts provides an excellent opportunity to examine procedures and forms with the objective of simplification, clarification or elimination.

documents are periodically reviewed, updated and readily available will enable employees to more efficiently and consistently perform their duties without going directly to management. Management will, in turn, be able to more effectively monitor compliance and performance to ensure that the Department's programs are carried out in the most efficient and effective manner.

Recommendations

• By July 1989, the Department should determine the cost effectiveness of an Automated Document Retrieval system. This system should have graphics capabilities using an optical character reader. This would overcome the deficiencies of current methods used to electronically access documents.

A great deal of time and money is spent by the Department in filing, maintaining and transmitting "hard" copy documents. Greater use of automation and computerized access should improve accessibility and reduce costs associated with rules, procedures, policies, directives and forms.

• The Department should develop forms design expertise within the Procedures and Forms Control unit. Although the unit is responsible for processing forms, little expertise currently exists to efficiently design new forms and redesign old ones. The Department can implement this with existing budget and staff. Training should start in the Spring of 1989, with the expertise developed by the Summer.

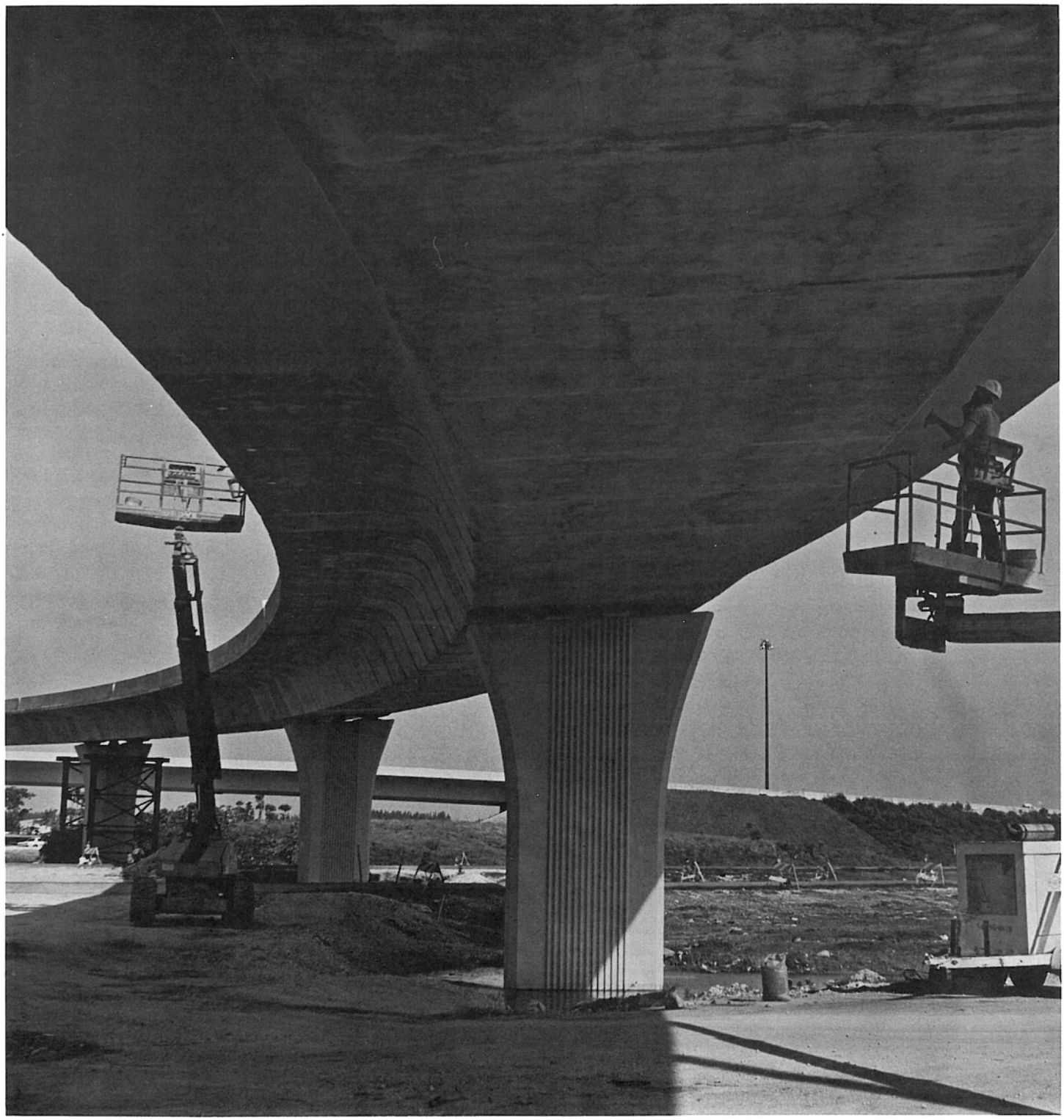
• The Secretary should act immediately to better control the number of forms used within the Department. Any unit can presently generate its own form without going through the Procedures and Forms Unit in the Central Office. Consequently, a number of unofficial forms exist. Although each major office should be authorized to issue forms which only affect it, a form which affects other Department operations should be centrally processed with form number and effective date.

• By April 1989, the Department should incorporate in its monitoring plan an element to review the adequacy and efficiency of current procedures and forms used by operational units. Monitoring conducted by the central office units of their district counterparts provides an excellent opportunity to examine procedures and forms with the objective of simplification, clarification or elimination.

• Improvements resulting from the procedures and forms review process should be implemented within the

guidelines arising from the Department's concurrent decentralization efforts.

The subcommittee will continue to work closely with Secretary Henderson and Department personnel for the duration of this procedural review.



Engineering Automation

While many of the Department of Transportation's engineering functions utilize computer technology, tremendous potential exists for increased productivity if these advances are applied more intensively in all DOT districts. Computer Aided Design and Drafting (CADD) alone could double drafting productivity while increasing engineering efficiency and accuracy. Increased computer automation could also lead to better record keeping and expedite large volumes of paperwork.

Instructional information for engineering programs should be regularly updated to make the latest engineering applications readily available. CADD should be expanded to improve design quality and enhance design training, and this equipment should be used two shifts per day at all DOT locations. Where appropriate, personal computers should be used in lieu of larger, more costly work stations.

Background

Technological advancements have created many new opportunities for improving productivity and efficiency through the use of automation. Computer automation can substantially increase transportation engineering output without having to increase staff. It is a tool which can help the Department of Transportation successfully meet the challenge of increasing productivity while reducing the time required to complete its engineering tasks.

Drafting can consume up to 50 percent of the man hours required to prepare an average size set of highway construction plans. Computer Aided Design and Drafting has the potential to increase drafting productivity by 2:1 or more. CADD can also increase design engineering efficiency and *accuracy.*

Similarly, automation in field offices provides efficiencies that translate into increased productivity in processing the large volume of paperwork associated with construction engineering inspection. Costs associated with engineering automation can be offset by increased

production of design plans at current staffing levels.

Observations

- The Department currently sends bid information to contractors on floppy disks, complete with a program for computing, entering and editing unit price information and total bid price. The disk is then returned to the Department for automatic bid tabulation. This process speeds handling of bid information for both the Department and the contractor.
- The Department has distributed a standard civil engineering package to maintenance and construction offices which is identical to software running on the Department's mainframe computer. This creates uniformity throughout the various hardware systems used by field engineers.
- The Department acquired many of its engineering software applications from other state departments of transportation and research institutes. Fewer than 25 percent of these programs have been updated since implementation nearly a decade ago.
- While tremendous potential for increased productivity and efficiency in engineering automation exists, it will not be fully realized unless advances are applied proportionately in all DOT districts.

Recommendations

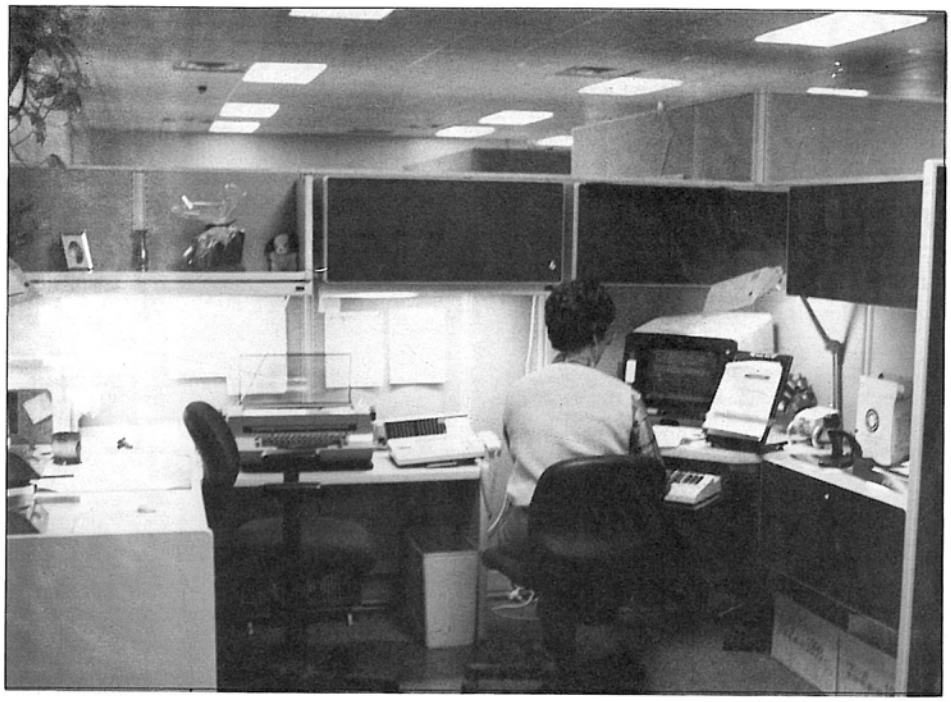
The subcommittee recommends that the Department of Transportation should:

- By July 1990, complete updating and initiate training on instructional documentation for users of engineering programs. Currently, information on how to use a particular application is passed down from engineer to engineer on a need-to-know basis.
- By July 1989, begin updating currently outmoded engineering applications that have been in use for many years.
- As production requirements dictate, use existing Computer Aided Design and Drafting (CADD) equipment two shifts per day at *all* DOT locations, beginning no later than July 1989.
- Expand CADD capability to include a significant increase in the quantity and quality of training for CADD designers. A training plan should be implemented by July 1990.
- Use current year and 1989-90 funds to expand the use of personal computer-based CADD systems costing approximately $15,000 in lieu of Intergraph work stations costing approximately $50,000. While the PC work stations do not provide all the functionality of the Intergraph units, the Department acknowledges that many engineers do not need the larger units. Moreover, one of the

The Department should use its Computer Aided Design and Drafting (CADD) equipment two shifts per day at all DOT locations.

The DOT should expand the use of personal computer-based CADD systems costing about $15,000 in lieu of more elaborate work stations costing approximately $50,000.

The Department operates a computer network that supports 1,500 terminals and serves over 4,000 users who generate more than two million transactions and 140,000 batch jobs each month.



The DOT estimates productivity losses of over $1 million occurred during a six-month period in 1987-88 when computer transaction response time exceeded ten seconds, with some remote locations experiencing delays of 20 minutes or more.

selection criteria for the PC work stations is compatibility with the Intergraph systems.

- Continue to convert appropriate engineering programs to a personal computer format, including redesigned data entry/output and proper documentation, where appropriate. A schedule should be developed by July 1989 to accomplish this on a phased-in basis over the next two to three years.

Office Automation

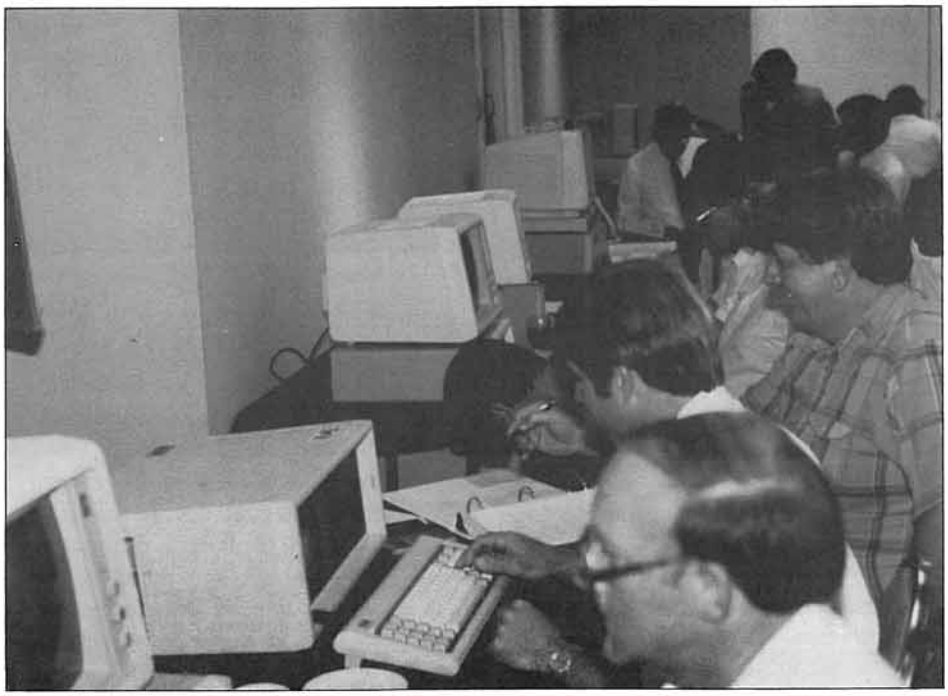
Office automation has made great strides in recent years. It has moved far beyond just word processing capability. Now money, messages, memos, computer generated files and calendars for scheduling meetings are sent electronically.

Observations

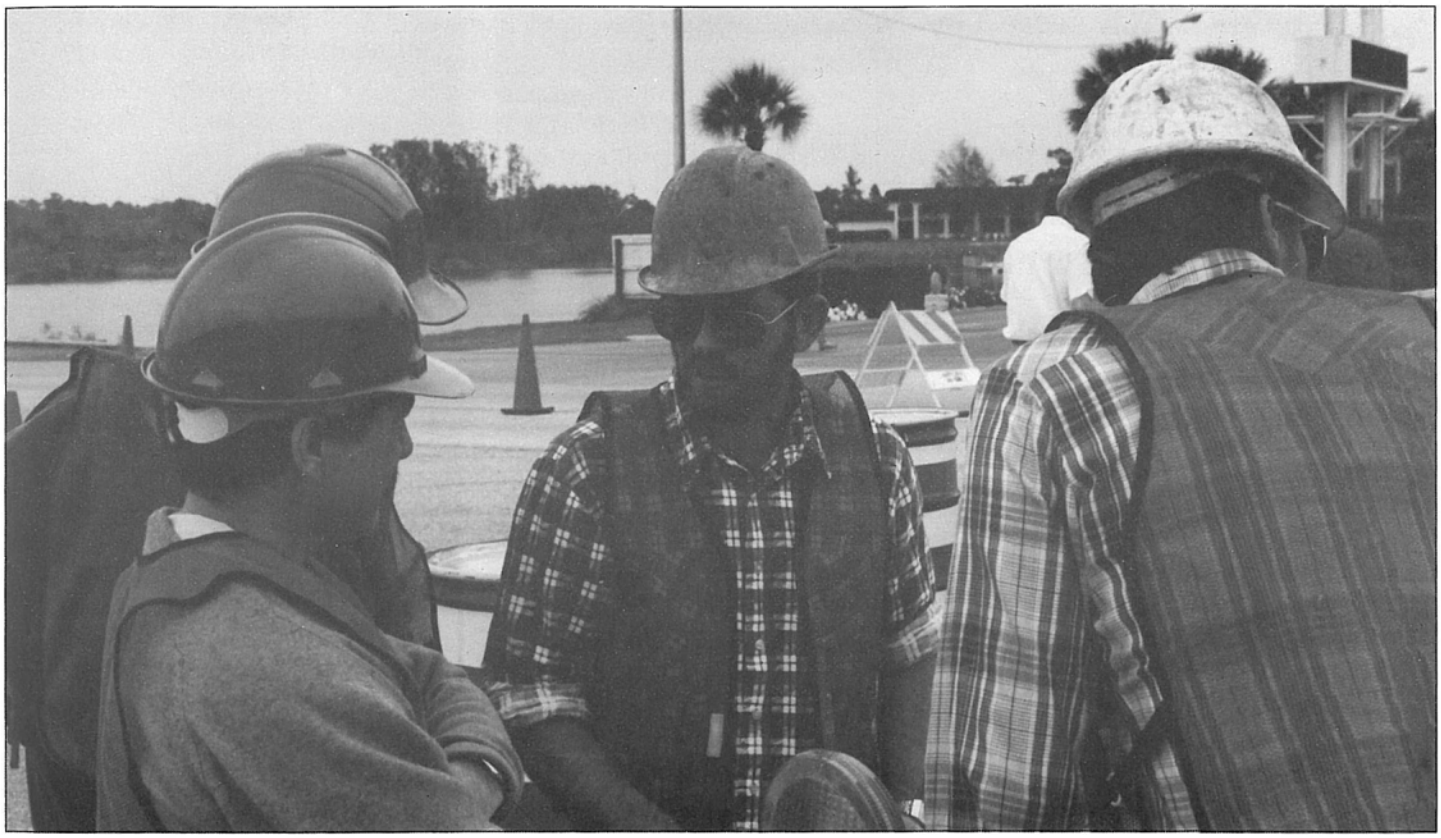
- The Department of Transportation operates a computer network that supports 1,500 terminals and serves over 4,000 users who generate more than two million transactions and 140,000 batch jobs each month.
- Significant disparities exist between the seven DOT districts as to their word processing capacity. In July 1988, the number of personal computers in each district ranged from 34 to 85, and the number of terminals from 16 to 104.
- The Department has set a standard for computer transaction response time averaging two seconds system wide. When computer and/or network capacity is exceeded and this response time standard is not met, the impact on productivity is dramatic. For example, if average response time takes twice as long, from two seconds to just four seconds, the Department's employees spend an extra 1,300 hours a month waiting for the computer to respond. At an average hourly rate of $30 (salaries, benefits and administrative costs) that adds up to $39,000 per month or $468,000 per year.
- The Department estimates that productivity losses of over $1 million occurred during a six-month period in 1987-88 when response time exceeded ten seconds, with some remote locations experiencing delays of 20 minutes or more.
- Some districts have remote offices with no automation capabilities at all. Personnel in these offices must travel to another site to use personal computers.
- There is wide variation in office automation training available to DOT district personnel. Industry studies show that properly trained employees can improve efficiency by a factor of two to one with word processing capabilities.

Recommendation

The Department should analyze and rate its seven districts' current word processing capabilities with an eye toward raising them to the level of the more efficient districts over the next two years. This should be accomplished by tying increased funding of office automation to increased productivity and/or reduction of staffing levels.



Productive Management of State Personnel



Florida's career service system was designed to protect state employees from politically driven, arbitrary management decisions. But the system also protects the small number of state employees whose performance levels are unacceptable and whose attitudes are a detriment to improved productivity. This impedes the efforts of managers and staff members who are dedicated and willingly productive.

Increasing performance and productivity should be directly tied to incentives, which are sorely lacking in the state government system. Recognition and rewards for budget saving ideas and improved performance can help make state employees partners in productivity.

Background

Florida's career service system is designed to provide state government with a reliable, ongoing work force that is relatively insulated from major political changes and arbitrary management decisions.

As a result of the career service system, however, state managers – including those in the Department of Transportation encounter extreme difficulty in dealing with a small number of career service employees whose unacceptable level of performance adversely impacts day-to-day state government work and negatively affects fellow employees, making productivity improvements especially difficult.

Demoting, terminating and, in some cases, transferring these troublesome employees currently requires an extraordinary, time- consuming effort that typically accomplishes little. Any system, such as Florida's Career Service, that allows a small group to adversely impact productivity advancements should be reformed.

At the same time, managers and supervisors should establish a clear record that they diligently tried, albeit unsuccessfully, to improve, transfer or dismiss troublesome employees. Otherwise, management has not managed.

The subcommittee concludes that more effective procedures for dealing with chronically deficient employees are an

essential ingredient for improved productivity. Since the career service system extends to almost all state agencies and employees, it is recommended that this issue be elevated from the Transportation Subcommittee for consideration and further work by the entire Partners in Productivity Task Force.

Crucial Incentives

A fundamental paradox of the state incentive structure is that if you save money this year you are likely to lose it next year. This provides a disincentive for DOT employees to improve efficiency and promotes wasteful spending. Incentives for performance help reduce waste by reallocating resources to more productive pursuits.

An effective incentive system should include:

Profit Sharing. Recognize and reward DOT units that save the highest percentage of their budget for personnel, equipment and supplies without reducing the level of service. As noted in the section on Procurement, under this "profit sharing" approach, up to one-third of the savings would be used for bonuses and salary adjustments, up to one-third for investment in new state owned technology and at least one-third returned to the General Fund.

Bonuses. Allow DOT managers to award discretionary bonuses of up to 5 percent of salary for truly outstanding sustained performance and innovation, as soon as possible after it occurs. Written criteria for bonuses should be established and instituted. Bonus money would come from productivity savings or a budgeted bonus fund. Bonuses would be awarded on a one-time basis and would not become part of the employee's base salary.

It is important that a majority of employees have the opportunity to be financially rewarded for measurably improved performance to raise overall levels at the Department of Transportation. Stratified bonus categories should be established with the biggest bonuses going to the top five to ten percent productivity increase performers and smaller bonuses awarded to another 30 to 35 percent of employees who meet the established criteria.

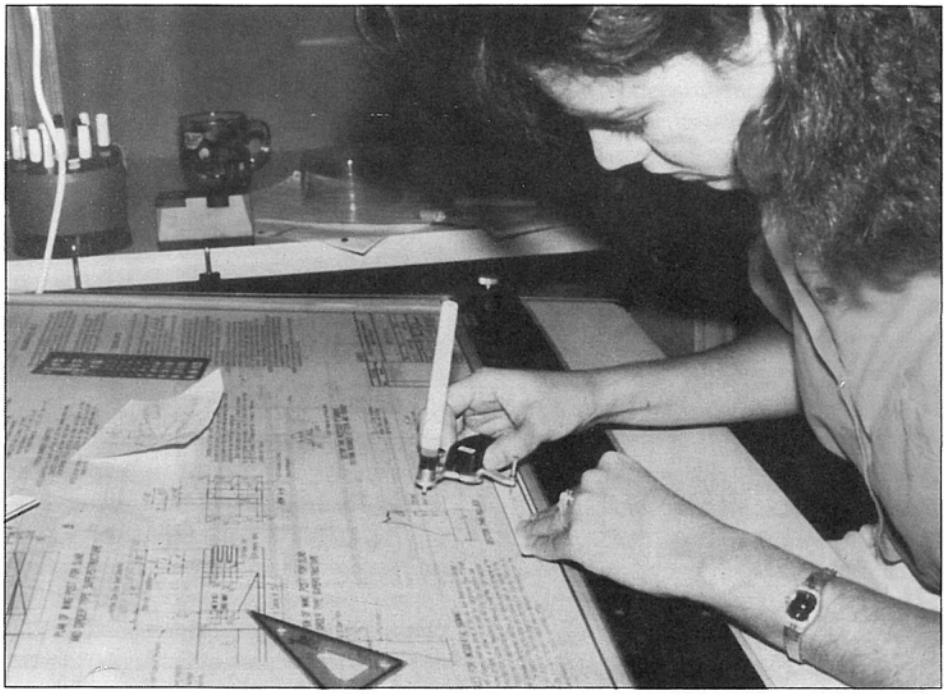
Merit increases. Award merit increases at a different time of the year from when across-the-board raises are given. Outstanding employees would receive two raises a year and a clearer connection would be established between a meritorious service raise and the annual cost of living adjustment (COLA) raise.

The state should carefully consider awarding merit increases as a one-time bonus that recognizes meritorious service. Building the merit increase into

Florida's career service system was designed to protect state employees from politically driven, arbitrary management decisions. But the system also protects the small number of state employees whose performance levels are unacceptable and whose attitudes are a detriment to improved productivity.

Increasing performance and productivity should be directly tied to incentives, which are sorely lacking in the state government system.

In the final analysis, all activities that are accomplished by the Department of Transportation are done through people. There is a continuing need to uplift the general attitude of the Department's personnel.



the base has the effect of rewarding the employee every year after it is given, regardless of whether he or she continues to provide meritorious service.

Other rewards. Give state employees a pre-established fixed percentage of what they identify in contractor and vendor overcharges to the State, with independent verification.

Top Level Long-Term Support Is Critical

An effective incentive system for DOT and all of State Government must have the long-term support of the Governor, the Cabinet and the Legislature. It is essential to have continuity over at least a five to seven year period. If the program develops problems, it should be modified and adjusted along the way, not scrapped.

Summary of Recommendations

IMPROVING PERFORMANCE TO CUT ROAD BUILDING TIME IN HALF

• In reducing the time to produce, it is very important not to significantly increase road building costs. The Department of Transportation should act to ensure that incentives to road builders do not exceed benefits derived from having projects completed sooner. It should also issue bids more evenly throughout the year rather than just during a two to three month period.

Decentralization

The Department of Transportation should develop policies concerning the following decentralization issues:

• The optimum dollar amount of contracts that should be issued by the DOT districts vs. in Tallahassee (the present limit is $250,000).

• The degree of authority of District Secretaries to execute project condemnation agreements.

• The degree of decentralization of complex bridge design.

• The appropriate balance between centralized economies of scale vs. greater management flexibility and faster response time through decentralization.

Concurrent Activities

• The Department should stress early starts and concurrent activities in its road and bridge construction/maintenance program.

• The right-of-way acquisition process – which includes title search, mapping, preparation of legal documents, appraisal, acquisition, relocation, suit preparation and eminent domain – should be shortened by accomplishing certain events concurrently. For example, title searches on alternative road alignments should be conducted early in the preliminary engineering phase, as determined by the contract manager.

• The Department should continue to work on alternative road and bridge designs on federally funded projects during the mandatory federal review process.

Certification Acceptance

• The Department of Transportation should negotiate with the Federal Highway Administration (FHWA) for certification acceptance. Under this arrangement, the FHWA can waive many steps in the development of federal aid projects by accepting Florida's guarantee to use equivalent state laws, rules and standards in lieu of federal ones.

Mitigation Land Banking

• Department of Transportation District 7 (Tampa Bay area) is conducting a time and potential money saving test program under which it pre-acquires parcels of land. Its purpose is to satisfy federal and state requirements concerning road and bridge construction through wetlands and drainage basins. This program should be carefully reviewed for statewide implementation by July 1990.

Computer Aided Design and Drafting (CADD)

• All road and bridge design plans by consultants should be required to be developed on computer aided design and drafting (CADD) equipment to take advantage of the increased productivity afforded by this technology, and so that necessary revisions can be made more efficiently.

• The Department should use its CADD equipment two shifts per day at all DOT locations as production needs dictate.

Contract Time

• An early completion financial incentive clause should be included in road building contracts whose primary purpose is to enhance road capacity for motorists. This provision is especially beneficial when toll revenue collections are anticipated to start by a certain date to retire debt from bond issues.

• Impose more meaningful penalties when a contractor is late in performance of a project. A scale ranging from $750 to $3000 per day (plus an equal amount of liquidated damages) is recommended.

• Creative techniques such as allowing bidders to include both contract time and price as part of the competitive bidding process should be used. There is no better qualified party to establish the minimum time needed to economically complete a construction project than the contractor himself. The point is that time is big money.

Supplemental Agreements to Construction Contracts

- The Department and contractors should set a goal of reducing time consuming supplemental agreements by a minimum of 10 percent annually for each of the next five years.
- There should be no agreements to supplement work orders or changes unless they significantly increase the quality of the project and do not have an untowards impact on cost.
- Changes recommended by the contractor should not provide additional profit but should be billed at cost plus a fixed administrative fee. This will keep contractors from abusing the state and make the DOT better define the necessary scope of work up front.
- By July 1989, the Department should prepare an evaluation of the time required to complete supplemental agreements before and after decentralization to document any time savings realized by this change and to pinpoint where additional efficiencies can be achieved.

Issuance of Work Orders

- The Department should compare its present rules and procedures (which cause an approximately 100 day delay between the time a low bidder is selected until a work order is issued) with those of other states that accomplish this in as few as 30 days. This review should take place by February 1, 1989 in order to recommend any needed statutory changes to the 1989 Legislature. The Department's goal should be to reduce this time by as much as 50 percent by July 1989.

Shop Drawing Review and Approval

- By July 1989, the Department should determine which road and bridge building areas that presently require submittals can be handled more expediently in the districts while still assuring that the design intent of contract documents is adhered to and the quality of the final product is maintained.
- The Department should develop procedures by July 1989 for producing bridge components from standard drawings and more detailed contract drawings, where feasible, rather than from shop drawings.
- By July 1989, the Department should conduct an evaluation of time and cost savings generated by decentralization compared to centralized shop drawing review and other time and cost saving changes in traditional shop drawing procedures.

Pre-purchased Long Lead Construction Materials

- The Department should conduct a pilot project by July 1990 to determine whether time and money can be saved by the DOT itself pre-purchasing some materials and products needed for construction. In such cases, contractors would then submit bid amounts less the materials to be supplied by the Department. Based on the results of the pilot project, the Department should implement this concept, where applicable, on a statewide basis.

Utilities Relocation

- The Department should make certain that a road project will be initiated as scheduled before requesting a city or utility company to move utility lines.
- Contracts for right-of-way clearing should be bid earlier so utility companies will know when the clearing will be completed and a more reasonable schedule for line relocation can be set.
- DOT should require contractors to be responsible for handling certain classes of utility work for which they can qualify (i.e., water and sewer) and have the utility reimburse the Department for improvements made.
- The prime contractor for a road or bridge project should be authorized to hire the subcontractor for utility relocation so that accountability will be clear.

Private CEI Contracts

- The Department of Transportation should increase its use of private engineering firms to handle Construction Engineering and Inspection (CEI). Incentive/penalty clauses should be included in such contracts to encourage early completion.

Commercial Testing Laboratories

- The Department of Transportation should increase its contracts with commercial labs for testing road building materials in order to meet expanding program needs and to save time in sampling, transporting and reporting processes.

Soil Base Inspection Procedures

- Instead of requiring DOT lab technicians to schedule time and travel to work sites, allow DOT project personnel, CEI consultants or contractors under their supervision to perform quality acceptance inspection services for all soil aggregate bases.

Limerock Bearing Ratio Test

- The Department should identify alternatives to the Limerock Bearing Ratio Test that is used to verify compliance with design strength specifications for sub-grade materials during construction. Using less time consuming tests or doing predesign testing of sub-grade materials to reduce the frequency of testing are strategies that should be pursued. Additionally, pre-designed mixes using commercial materials to establish a subgrade working platform should be utilized.

DESIGN/BUILD: AN INNOVATIVE ROAD BUILDING EXPERIMENT

The Department of Transportation should:

- Determine how the initial design criteria provided to design/build teams can best be structured so that subsequent plans and bids are compatible with the bidding process while allowing maximum creativity by the design/build team.
- Determine how the initial design criteria and contract can best place the burden on the contractor for such items as utilities relocation, drainage, permits, etc.

• Determine how the design/build method can improve the process of right-of-way acquisition, to save both time and money. For example, a major obstacle to obtaining some right-of-way is to illustrate *necessity.* Perhaps this can be established earlier by using the design/build approach.

• In areas where healthy cost saving competition is limited, consider subsidizing – through a system of stipends – part of the cost of preparing proposals on complex projects. Such a system should be limited to the second and third place bidders, and may provide for as much as $10,000 on multi-million dollar projects. This has worked well with other agencies using design/build, and the Department may realize cost savings in staffing and consultant fees, plus an increased level of competition for the work. A follow-up evaluation should be conducted by the Department by July 1990 to determine by how much competition has been increased and at what cost.

• In cases where designs presented are not technically accurate and/or cost proposals are not comparable and all must be rejected, develop a re-bidding procedure to quickly generate the lowest bids based on the best plans.

• Determine the optimum stage of design (i.e. 30 percent of plan completion) at which the design/build contract should be awarded. This will involve a trade-off between time savings versus plan completeness.

• In the interest of time, the Department of Transportation should develop a policy to determine the extent to which construction can proceed prior to completion of final plans.

• Determine the optimum mix of responsibility and accountability between outside consultants and in-house engineers that the Department of Transportation needs to properly monitor and evaluate the construction process after a contract has been awarded. This will help prevent contractors from taking advantage of the system in order to make a short-term profit by reducing the quality of materials or workmanship.

REDUCING RIGHT-OF-WAY ACQUISITION TIME AND COST

• The constitutional amendment approved by the voters on November 8, 1988 to authorize bonding for right-of-way acquisition should be expeditiously implemented with proper controls.

• The Department should quickly implement 1988 statutory changes that provide for a strong program of advance right-of-way acquisition and clarify the authority of state and local governments to condemn right-of-way based upon preliminary engineering and documented need.

• The 1989 Legislature should further amend Sections 73.091 and 73.092, Florida Statutes, to tighten restrictions on payments to property owners' attorneys. The 1987 Legislature enacted a first-step limitation on payment of attorney fees. However, Florida's nationally recognized, liberal treatment of condemnation attorneys still encourages litigation and unnecessarily extends pre-construction schedules. According to the Department of Transportation, this costs our taxpayers at least $12 million annually.

• The 1989 Legislature should also amend Section 337.273, Florida Statutes, to require local governments to protect corridors and rights-of-way of city, county and state transportation facilities – consistent with protection of individuals' property rights.

• The 1989 Legislature should mandate development of coordinated and non-contradictory state transportation plans, local government comprehensive plans and land development regulations. These measures should promote consistency with adopted long-range plans of Metropolitan Planning Organizations.

• MPOs should not alter established state road project schedules except under extraordinary circumstances such as a documented reduction in need. If MPO plans are constantly changed, it becomes more costly and much more difficult for the Department of Transportation to make needed improvements on a timely basis.

UTILITIES RELOCATION

• Utilities should be relocated prior to the beginning of road construction where conditions permit.

• Highway contractors, rather than utility companies, should perform relocation work wherever feasible (i.e., on water and sewer facilities).

• The Department of Transportation should implement accountability measures such as penalties for failure to relocate utilities to meet agreed upon schedules. It should also use measures such as moratoriums on pending utility permit applications for other jobs in order to improve compliance with time limits for utilities relocation.

• Alternative utilities engineering and construction cost funding mechanisms should be explored. One such alternative is to allow the Department to assess a permit fee at the time of installation of utilities, then use this revenue as a means of financing subsequent utility relocation costs.

• Legislation is needed to make joint project agreements mandatory for utility relocations involving two or more units of government.

IMPROVED UTILIZATION OF FEDERAL FUNDS

• The current 73 separate state budget appropriations categories for Florida's highway construction program should be reduced to foster a more streamlined and efficient project development process, and more cost effective utilization of federal highway funds.

• The Department should adopt a strategy using a portion of available federal aid for the least complex road and bridge projects and/or where federal matching rates are highest.

• The Department's action plan on right-of-way should be fully implemented by July 1989 to lift a federal funding limitation.

The Department of Transportation should:

• By July 1989, identify reasons why the Disadvantaged Business Enterprises (DBE) program is not satisfactorily achieving the goal of helping minority contractors grow and compete with non-minority companies. For example, a bond and training program authorized by the 1984 Legislature has never been funded for implementation. Its absence hurts the DBE program.

• Determine the ability of individual minority contractors to undertake each category of work that DBE's are eligible to perform. This can be accomplished through review of applications for the DBE program.

• Increase the number of projects set aside exclusively to be bid on by minority contractors beginning with the Spring 1989 lettings.

• Require DBE expenditures to be a percentage of funds in the State Transportation Trust Fund which are spent on construction and maintenance contracts.

• Provide limited law enforcement authority to investigative officers in the DOT Inspector General's office to deal with DBE fraud and contract crime.

Impoundment of Federal Highway/Airport Trust Funds

• The Governor's Office and the Florida Congressional delegation should work vigorously to release Florida's more than $500 million share of impounded Federal Highway/Airport trust funds. Simultaneously, highway lobbying groups should insist that these highway/airport monies be dispersed for their intended use.

PRIVATIZATION

• Laboratory testing of road building materials should be expedited through increased use of local private firms rather than relying solely on regional DOT labs. The DOT districts should select firms from a pre-qualified list in the same manner as they currently select consultants for road and bridge plan preparation.

• The Department should refine its methodology for comparing public/private costs.

• The Department's Inspector General or the Auditor General (rather than a private consultant) should prepare a feasibility study on privatizing collection of tolls, in order to check a natural incentive for a private consultant to show the positive feasibility of this approach.

• Further study is needed to determine the cost effectiveness of contracting out microfilming of Department data and records required by state law to be retained for a long period of time.

• By July 1990, the Department should prepare a report on the success of privatizing the operation of the Florida Turnpike that analyzes its applicability for implementation in the seven DOT districts.

Note: *The issue of privatization should be studied in greater depth by the Partners in Productivity Task Force during the coming year. The subcommittee is concerned that the Department of Transportation strike the appropriate balance between healthy cost saving competition in the private sector versus maintenance of necessary in-house expertise to monitor and exert reasonable control over road building functions.*

PROCUREMENT

Road and Bridge Contracts

• The 1989 Legislature should delete a statutory provision requiring advertisement of road building jobs for more than $250,000 in the *Florida Administrative Weekly.* Under the current statute, only legally pre-qualified contractors may bid on these larger contracts and they are already notified by separate mailing.

• Permit "express mail" services to be used for notification of decisions or intended decisions. Current state law specifies U.S. Mail. This will expedite the contract award process.

Contractual Services

• Restore competitive selection of design and landscape architects, engineers and surveyors. Price consideration should be allowed as one factor in making consultant selections. The DOT should not be forced to always select the cheapest price, but rather should be given the flexibility to justify accepting a slightly higher price for a much better product.

• Eliminate the requirement for lengthy written technical proposals for routine, non-complex transportation projects. Interviews should be conducted with the top ranked firms to evaluate their qualifications and approach. This will reduce the time required to prepare and evaluate proposals, thereby expediting the road building process.

• By July 1989, develop a contractual services data base design to provide for on-line access to historical cost data. This will improve contract negotiations, contractor performance data to assist in ranking selection, and pre-qualification information on consultant firms.

In-house purchasing

• The 1988 Legislature enacted Chapter 88-384, Laws of Florida, which requires vendors to post a bond when contesting Department of General Services (DGS) term contracts. The bond is forfeited if the vendor loses the challenge. The subcommittee recommends extension of this provision to cover major bids issued by the Department of Transportation and other state agencies.

• Computerized purchasing should replace manual procedures wherever possible. Currently, DOT district paper flow to the Tallahassee central office is largely non-automated. Computerization could speed up delivery of construction materials to work sites.

• No incentive is presently in place to encourage state agencies to prudently save appropriated and budgeted money. In fact, a virtual savings disincentive system is all too apparent in an unwritten policy to spend it or lose it. The subcommittee vigorously endorses an incentive plan previously proposed by Florida TaxWatch under which up to 1/3 of any savings would be used to enhance the work place environment of the state agency, up to 1/3 would be available for worker bonuses and at least 1/3 would be returned to the state's General Revenue Fund.

POLICY AND PROCEDURES REVIEW

- By July 1989, the Department should determine the cost effectiveness of Automated Document Retrieval systems. A great deal of unnecessary time and money is currently spent by the Department in filing, maintaining and transmitting "hard" copy documents. Greater use of automation should improve accessibility and reduce costs associated with rules, procedures, policies, directives and forms.
- The Department should develop forms design expertise within its Procedures and Forms Control unit. Although the unit is responsible for processing forms, little expertise currently exists to efficiently design new forms and redesign old ones. The Department can implement this with existing budget and staff. Training should start in the Spring of 1989, with the expertise developed by the Summer.
- The Secretary should act immediately to better control the number of forms used within the Department. Any unit can presently generate its own forms without going through the Procedures and Forms unit in the Central Office. Consequently, a number of unofficial forms exist. Although each unit should be authorized to issue forms which only affect it, forms which impact other Department operations should be centrally processed with form number and effective date.
- By April 1989, the Department should incorporate in its monitoring plan an element to review the adequacy and efficiency of current procedures and forms used by operational units. Monitoring conducted by the Central Office units of their district counterparts provides an excellent opportunity to examine current procedures and forms with the objective of simplification, clarification or elimination.
- Improvements resulting from the procedures and forms review process should be implemented within the guidelines arising from the Department's decentralization strategy by July 1989.

ENGINEERING AUTOMATION/ OFFICE AUTOMATION

- All plans by professional consultants should be done on Computer Aided Design and Drafting (CADD) equipment so that revisions can be efficiently and expertly made through the use of this system.
- The Department should use its CADD equipment two shifts per day at all DOT locations, as production needs dictate, beginning no later than July 1989.
- The Department should use current year and 1989-90 funds to expand the use of personal computer-based CADD systems costing about $15,000 in lieu of Intergraph work stations costing approximately $50,000. While the PC work stations do not provide all the functionality of the Intergraph units, the Department acknowledges that many engineers do not need the larger units. Moreover, one of the selection criteria for the PC work stations is compatibility with the Intergraph system.
- The Department should convert as many engineering programs as feasible to a personal computer format, including redesigned data entry/output and proper documentation. It should develop a schedule by July 1989 to accomplish this on a phased-in basis over the next two to three years.
- The Department should take action by July 1989 to begin updating now outmoded engineering application programs that have been in use for many years.
- The Department should expand CADD capability to include a significant increase in the quantity and quality of training for CADD designers. A training plan should be implemented by July 1989.
- By July 1990, the Department should complete updating and initiate training on instructional documentation for users of engineering software programs. Currently, information on how to use a particular application is passed down from engineer to engineer on a need-to-know basis.
- By July 1989, the Department should analyze and rate its seven districts' word processing capabilities with the goal of raising them to the level of the more efficient districts over the next two years. This should be accomplished by tying funding of office automation to increased productivity and/or reduction of staffing levels.

BETTER PRODUCTIVE MANAGEMENT OF STATE PERSONNEL

- More effective means are needed to deal with a relatively small number of career service personnel whose unacceptable level of performance adversely impacts day-to-day state government work and negatively affects fellow employees, making productivity improvements especially difficult.
- Recognize and reward Department of Transportation units that save the highest percentage of their budget for personnel, equipment and supplies without reducing the level of service.
- Allow Department of Transportation managers to award discretionary bonuses of up to five percent of salary for truly outstanding sustained performance and innovation.
- Give employees a pre-established, fixed percentage of what they identify in contractor and vendor overcharges to the state, with independent verification.
- The state should carefully consider awarding merit increases as a *one-time* bonus that recognizes meritorious service. Building the merit increase into the salary base has the effect of rewarding the employee every year after it is given, regardless of whether he or she continues to provide meritorious service.

Note: *The Productive Management of State Personnel issue should be elevated from the Transportation subcommittee for further work by the entire Partners In Productivity Task Force in 1989.*

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