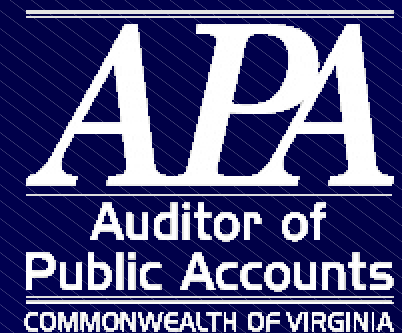


Cash Management
and
Capital Budgeting Practices
of the
Department of Transportation

Commonwealth Transportation
Board Workshop
July 17, 2002



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Study Origin

In February 2002, the Governor requested the Auditor of Public Accounts to perform a performance and operational review of the Department of Transportation.

Objectives

1. Determine whether Transportation's cash flow analysis and projection procedures are adequate.
2. Determine whether Transportation's automated systems can provide the information required for management to make informed financial and operational decisions.
3. Document and review all of Transportation's funding streams, their uses, restrictions, and other encumbrances including the Federal Highway Reimbursement Anticipation Notes, the Priority Transportation Fund, and the Transportation Equity Act for the 21st Century.

Objectives

4. Determine whether Transportation has a process to accumulate, compile, and assess the feasibility of the cost of projects in relation to funding availability before sending out the Request for Proposal and, if they do, whether the process is adequate.
5. Document, review, and determine the adequacy of Transportation's policies and procedures to decide which construction and maintenance projects to fund.
6. Document, review, and determine the adequacy of Transportation's process to commit to construction and maintenance contracts and to determine what role funding plays in this process.

Objectives

7. Review and determine the adequacy and propriety of the Commonwealth Transportation Board's role in the contract commitment process and determine what information Transportation provides the CTB members when awarding contracts.
8. Assess the need for legislation to govern Transportation's construction and maintenance contract commitment process by requiring a funding commitment before signing a contract.

Background

- Cash flow issues occurred in 1999 due to a mild winter and passage of TEA-21.
- Transportation conserved cash by restricting construction project expenses and occasionally operating at a deficit cash balance until revenues began flowing in again.

Background

- Cash flow issues surfaced again at the end of fiscal year 2001, specifically in the Highway Maintenance and Operating Fund due to gas tax law changes and other factors identified throughout our report.
- Transportation handled this through interfund borrowing, drastic reductions in construction project expenses, and eventually revising the Six Year Program, cutting over \$3 billion in projects.

Summary

- We found that Transportation's recent cash shortages resulted from a lack of cash and project management and not matching construction projects in the Six Year Program to available resources.
- We found that Transportation does not have a systematic way to identify its maintenance needs, and therefore cannot reasonably determine or quantify these maintenance needs.
- We also found that compounding these issues is a complex collection of automated systems that do not consistently exchange data, and do not provide timely and accurate information to support Transportation's management needs.

Summary

- Our report provides background on processes and controls relating to cash and financing sources, allocations, the Six Year Program, the construction process, the maintenance process, and the systems environment.
- We provide recommendations on how to improve these processes where necessary specifically in relation to cash and project management.
- We provide a Best Practices Model on how to implement our recommendations.

Presentation Outline

- We will discuss six major areas during this presentation
 - ✓ **Cash and Financing Sources**
 - Allocations
 - Six Year Program
 - Systems Environment
 - Construction
 - Maintenance

Revenue Forecasting

- The Department of Motor Vehicles forecasts all motor vehicle related revenues.
- The Department of Taxation forecasts the ½ percent sales and use tax dedicated to transportation.
- Transportation forecasts all other revenues that it collects, including federal revenues.

Motor Vehicles Revenue Forecasting

- Collections for transportation revenues have exceeded the forecast since 1996 supporting the fact that Motor Vehicles conservatively under estimates revenues.
- We found that the closer to the actual date of the forecast, the more accurate the forecast became.
- In conclusion, we found that Motor Vehicles transportation revenue estimates have not negatively impacted Transportation's planning process.

Federal Revenue Forecasting

- Transportation receives federal revenues mainly from the Federal Highway Administration under the Federal Aid Highway Program and TEA-21.
- Transportation has consistently over estimated federal revenues by budgeting for full apportionment authority, which has exceeded obligation authority by approximately 13 percent.
- Beginning in fiscal year 2003, Transportation plans to budget federal revenues using obligation authority instead of full apportionment.

Recommendation

Transportation should continue to budget federal revenues based on obligation authority and the growth rate of motor fuels consumption, but should also include projected reimbursements to help bring the projection more in line with actual reimbursements. Transportation should document this process and adopt the policy.

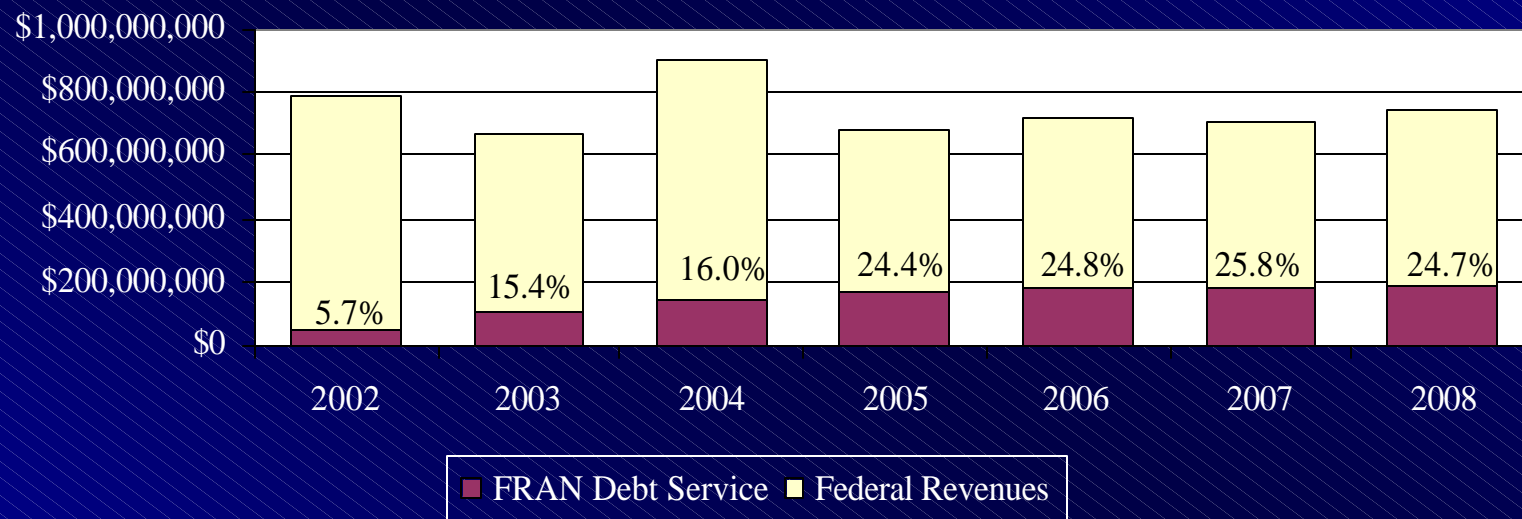
Federal Reimbursement Anticipation Notes

- Transportation has turned to the issuance of FRANs as a method to provide current resources for construction.
- However, the issuance of FRANs is only a short-term solution to a long-term problem and can actually make the cash flow situation worse in the future.

Planned FRAN Issuances

Fiscal Year	Series	Issue Amount	Outstanding Principal at Fiscal Year End
2001	Series 2000	\$375,000,000	375,000,000
2002	-	-	375,000,000
2003	Series 2002A & B	495,950,000	870,950,000
2004	Series 2003	241,500,000	1,078,845,000
2005	Series 2004	139,500,000	1,142,955,000
2006	Series 2005	68,000,000	1,112,320,000
2007	Series 2006	30,500,000	1,028,145,000
2008	-	-	902,460,000
Total		<u>\$1,350,450,000</u>	

FRAN Debt Service as a % of Federal Revenues



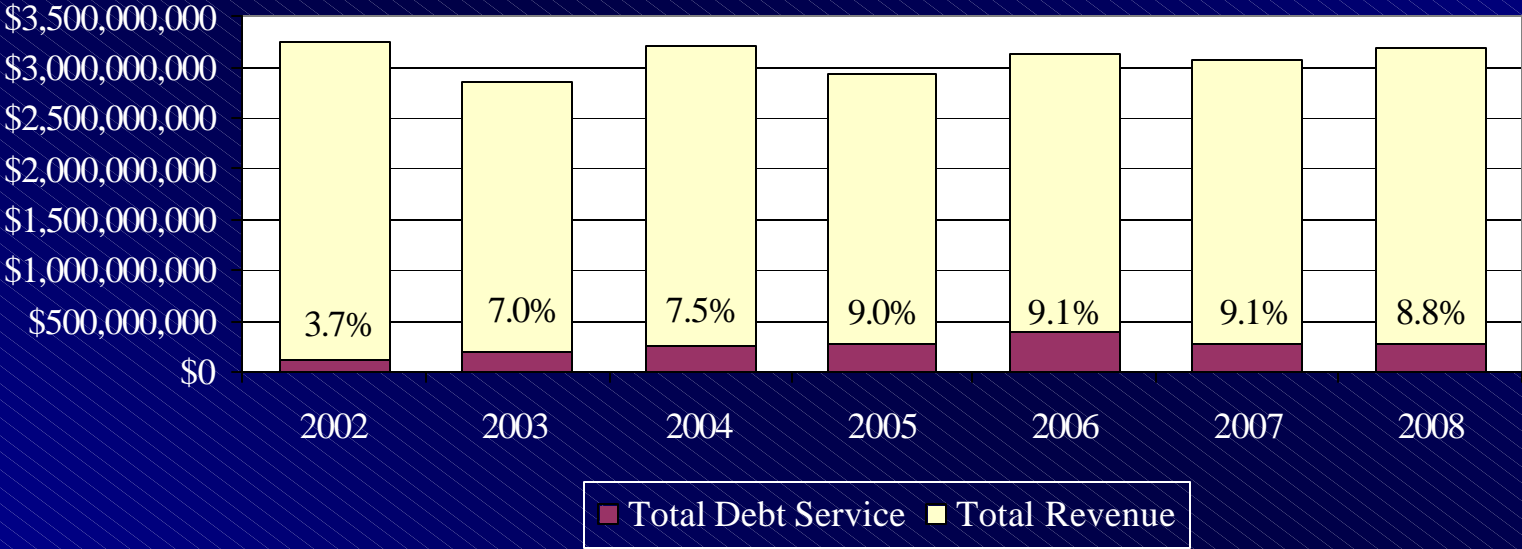
Transportation Debt

- FRANs require Transportation to continue spending on federally approved construction projects so that they can receive federal reimbursement to meet debt service requirements.
- Transportation will have to commit funding for those projects that receive federal funding and direct state funds to these projects to make up for the federal reimbursements that will go to pay FRAN debt service.

Transportation Debt

- Transportation has other forms of debt supported by dedicated revenue streams.
 - For example, Route 58 and Route 28 bonds supported by local recordation taxes.
 - Bonds issued to build toll roads are supported by toll revenues.
- The issue surrounding debt is not whether debt is an appropriate funding mechanism, but rather how much of total revenue should be committed to debt service.

Debt Service as a % of Total Transportation Revenue



Recommendations

Transportation should establish a policy on how to decide when and if to issue future FRANs. This policy should consider the amount of any proceeds remaining from previous FRAN issues, the readiness of projects to use the funds, and the impact the issuance has on current and future revenue streams.

The General Assembly and the Governor may wish to consider having the Debt Capacity Advisory Committee review and recommend guidelines for Transportation to follow when issuing debt.

Presentation Outline

- We will discuss six major areas during this presentation
 - Cash and Financing Sources
 - ✓ **Allocations**
 - Six Year Program
 - Systems Environment
 - Construction
 - Maintenance

Allocations

In order to distribute estimated revenues, Transportation begins with a pool of funds consisting of transportation revenues and uses the allocation process to distribute revenues to the various transportation agencies, highway maintenance program, administrative and support functions, highway systems, construction districts, counties, municipalities, and finally, individual highway construction projects.

Allocations

- Transportation is statutorily required to fund highway maintenance first, and then general and administrative expenses.
- Once Transportation covers these expenses, they must use the remaining funds for road construction.
- “Crossover” occurs when there is not enough designated revenues to fund maintenance needs and Transportation must use construction revenues to fund maintenance costs.

Construction Allocations

There are two allocation processes set out in the Code of Virginia.

- **Modal** allocations distribute estimated revenues to the various modes of Transportation.
 - Airports 2.4%
 - Ports 4.2%
 - Rail 14.7%
 - Highways 78.7%
- **Formula** allocations distribute the 78.7% allocated for highways in the modal allocation to the road systems.
 - Primary 40%
 - Secondary 30%
 - Urban 30%

Formula Allocation

- Primary Roads
 - Allocated to each of the nine districts based on primary roads by weighted factors of 70% for vehicle-miles traveled, 25% for lane miles, and 5% for need.
- Secondary Roads
 - Allocated to each county 80% for population and 20% for land area.
- Urban Roads
 - Allocated to cities and towns with populations over 3,500 in proportion to their percent of the total population of all eligible cities and towns.

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Six Year Program

Issues:

- Transportation has not considered cash flow projections when developing the SYP.
- Transportation has never attempted to match project allocations and estimated project cash payouts.

Recommendation

Transportation's programming divisions should incorporate estimated monthly project payouts and estimated monthly cash flow information into the project allocation process. This would allow Programming and Scheduling to match project allocations to a project's cash needs and would mitigate the cash drain that the mismatch of cash and allocations has on Transportation's cash account.

Disconnect Between Cash Flow, Expenses, and Allocations

- There is no relationship between the allocation of revenues, the timing of cash inflows, and the budgeting of construction payouts.
- Because projects are long-lived and will not spend their allocation within one year but instead over several years, Transportation has not attempted to match allocations to expenses on an annual basis.

Disconnect Between Cash Flow, Expenses, and Allocations

- Once authorized and awarded, a project spends funds at its own rate without regard for its allocation.
- In many cases total project cost will not equal total allocations because Transportation does not
 - Budget or restrict projects to planned expenses each year,
 - Properly estimate project costs, and
 - Provide allocations equal to 100% of a project's cost by completion.

Recommendation

Transportation must carefully monitor and link the timing of cash receipts and expenses to all projects currently authorized. This may result in increased cash balances as Transportation matches their current and anticipated road construction expenses to forecasted cash. To accomplish this, Transportation will need to budget for construction projects.

Recommendation

Transportation should begin the systematic process of budgeting for the Construction Program. The budget should consider anticipated contract payout against anticipated cash flow. Transportation's Six Year Program should be a six-year capital budget. This process will be central to Transportation's success in developing a deliverable, financially constrained construction program based on statewide needs and priorities.

SYP Implementation Issues

- The CTB approved inclusion of projects in the SYP with little or no allocations and advanced those projects to advertisement and award.
- Many of the decisions to start or add projects appear to have been motivated more by a project's popularity or the desire to begin as many projects as possible.
- Abandonment of the 70% Rule resulted in Transportation having no methodology for determining when to advertise and award construction contracts.
- Transportation does not have a policy or reliable process to fully fund projects by year of completion.

Recommendation

Transportation must develop a financially constrained Six Year Program based on anticipated project payouts.

To do this, Transportation should develop a method to ensure that the projects added to the Six Year Program have sufficient allocations to complete planned work each year and that the full cost of the project has been allocated to it by the year of project completion.

The method should allocate revenues to projects based on expected project payouts each year and should be reconciled to anticipated cash flow.

Recommendation

Transportation should only add new projects to the extent that there is sufficient cash to pay for them.

When developing the Six Year Program, Transportation should begin with a district's, county's, or municipality's allocation, remove any outstanding debt service, and subtract anticipated existing project payouts.

Transportation can use the remaining funds, if any, to add new projects as long as project payouts do not exceed cash in flows.

Recommendations

During development and implementation of the new process, Transportation should determine an appropriate minimum cash balance to maintain as a reserve. The cash reserve is necessary for economic downturns where revenues are less than anticipated as well as to provide a cushion for Transportation while they work to develop and refine new processes.

The General Assembly may wish to create a Transportation Revenue Reserve Fund that would act like a Rainy Day Fund for the Transportation Trust Fund. Additionally, the General Assembly may wish to restrict availability of these funds for other uses.

SYP Monitoring Issues

- Transportation does not monitor the progress of the projects in the SYP.
- Transportation does not report on the progress and success or failure of the SYP to anyone, resulting in them not being held accountable.

Recommendation

The Governor and the General Assembly may wish to consider amending the Code of Virginia to require Transportation to report on the progress and success or failure of the SYP to the Transportation and Finance committees annually.

Project Cost Estimates

- Transportation's project cost estimates contained in the SYP understate the true cost of the SYP.
 - Initial project cost estimates are the most inaccurate, but the most crucial because they are the basis for initial funding decisions and initial project allocations.
 - Estimates become more accurate as the design and planning progress.

Project Cost Estimates

- Reasons for inaccurate estimates:
 - Inconsistencies in sources, preparation process, and contingency inclusion
 - Lack of preliminary site work and project specifications
 - SYP development and approval process

Recommendation

We recommend that Transportation complete basic preliminary engineering work, such as scoping, soil tests, environmental permitting, and surveys, prior to approving projects and placing projects in the SYP.

We concur with the Governor's Commission on Transportation Policy's recommendation that Transportation should create a mechanism for funding scoping work on projects before CTB approval for inclusion in the program.

However, we do not recommend the creation of a separate fund receiving separate appropriations. We believe the creation of a cost center or a budgetary "pool" of funds would be the most practical choice.

Recommendation

Preliminary work before project approval would allow for more realistic initial project estimates and the CTB would benefit by having more information available for decision-making purposes.

Prior to authorization, Transportation could eliminate projects that are not feasible or whose estimated costs are too high to be practical.

Recommendation

We concur with Transportation's own Research Council recommendation that Transportation should develop and employ a more rigorous cost estimation process, and allocate more resources to the development of cost estimates during the planning process, thereby yielding more refined and more accurate project concepts. We believe Transportation has taken a step in the right direction with the formation of the group to study cost estimates. We strongly urge Transportation to closely monitor their progress and ensure the development and application of a reasonable, realistic, and consistent cost estimation method.

Commonwealth Transportation Board and the Six Year Program

There are 16 legally required duties including:

- Location of routes
- Approval of all construction contracts
- Coordinating the planning for financing of transportation needs as provided in §33.1-23.03 of the Code of Virginia
- Administration, distribution, and allocation of funds in the TTF as provided by law
- Approval of all maintenance contracts equal to or greater than \$250,000

Commonwealth Transportation Board and the Six Year Program

Project prioritization requirements:

- The CTB should recommend objective criteria to use in selecting transportation projects to be advanced from the feasibility to the construction stage.
- The CTB should develop and update a Statewide Transportation Plan covering a 20 year planning horizon, in accordance with federal transportation planning requirements.

General Assembly Intent

- “It is the intent of the General Assembly that this plan (Statewide Transportation Plan) assess transportation needs and assign priorities to projects on a statewide basis, avoiding the production of a plan which is an aggregation of local, district, or modal plans.”
- Transportation does not have policies or procedures to address this request from the General Assembly.

Recommendation

The Commonwealth Transportation Board should immediately establish and implement objective criteria for construction project selection and prioritization. Both the Transportation Research Council and the Governor's Commission on Transportation Policy have recommended project selection and prioritization criteria.

Recommendation

The General Assembly may wish to re-examine the use of allocations for setting construction project priorities and funding. While the General Assembly has established that the Commonwealth Transportation Board must establish a method for setting statewide priorities, the General Assembly may wish to provide them some guidance on factors that the CTB should consider in establishing this process.

Recommendation

Transportation may not be able to achieve a program based on statewide needs and priorities using the current method for project allocation to districts, counties, and cities and towns. The General Assembly may wish to amend the Code of Virginia to change the current allocation system so that Transportation can truly base their priorities and criteria on statewide needs rather than by district, county, and city.

Recommendation

The focus of the Six Year Program should remain on the statewide needs of the Commonwealth as a whole; it should not focus on districts. The current process of presenting individual district's tentative plan to the Board members from those districts distracts from the statewide focus and instead encourages the district focus. Transportation and the CTB should focus on statewide needs, as is statutorily required of the CTB, when reviewing and approving the Six Year Program. Transportation and CTB should change their presentation and review process.

CTB Accountability

- By prioritizing statewide transportation needs, designating projects for inclusion in the SYP, and approving the SYP, the CTB commits a considerable amount of Commonwealth resources for transportation programs.
- Without significant improvements in cash and project management, the CTB runs the risk of improperly committing the Commonwealth's resources in the future.

Recommendation

Since the actions of the Commonwealth Transportation Board significantly commit the resources of the Commonwealth, the General Assembly may wish to extend to the Commonwealth Transportation Board the provisions of the Appropriation Act, which clearly states the responsibilities of anyone who intentionally incurs a deficit or obligates the Commonwealth to the point that it will incur a deficit.

CTB Practices

CTB practices that are not statutorily required:

- Reviews all project designs and approves them, which adds 30 - 60 days to each project even though the CTB does not have the technical expertise to review designs.
- Approves all professional service contracts, which delays projects 30 – 60 days.

Recommendation

We concur with the Governor's Commission on Transportation Policy recommendation that the CTB should discontinue the practice of reviewing and approving design plans.

The CTB should discontinue the practice of reviewing and approving professional service contracts.

Presentation Outline

- We will discuss six major areas during this presentation
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 - Six Year Program
 - ✓ **Systems Environment**
 - Construction
 - Maintenance

Systems Environment

- Most systems within Transportation meet the individual needs and requirements of a division, while at the same time most of these systems cannot exchange or share basic information.
- Contributing to this data exchange issue are the multiple operating platforms, systems, and program configurations and networks that have evolved at Transportation.
- There is no common understanding of what basic information is necessary to operate the entire department and who has responsibility to gather and maintain this information.

Systems Environment

- Transportation has recognized that its ultimate goal is the need to create and address an enterprise-wide system approach.
- Transportation has created a Data Warehouse as an interim solution to satisfy the department's current needs since implementation of an enterprise system will be lengthy and expensive.

Recommendation

If the Data Warehouse is to provide a sound interim solution, management must, for each of these systems, assign and hold accountable the division responsible for gathering and maintaining this information. Without this accountability, inaccurate, untimely, and inconsistent information will very quickly compromise the usefulness of the Data Warehouse.

Data Warehouse

- In the interim period, to provide the information necessary for improving and maintaining cash management information, Transportation should include the following systems in the Data Warehouse:
 - Program Project Management System (PPMS)
 - Right of Way and Utilities Management System (RUMS)
 - Trns*Port
 - Financial Management System (FMSII)
 - Six Year Improvement Plan (SYIP) database
 - Secondary Six Year Plan database
 - Cash Forecasting database

Recommendation

Transportation should identify all of the critical data elements in the systems necessary for project and cash management. After identification, Transportation should implement a program of data integrity to ensure that the critical elements undergo update in all systems as needed. This program of data integrity should especially address those individuals that extract information from a system and use the data independently of the system.

Recommendations

Transportation should review the manual processes such as transferring information from the Six Year Improvement Plan database and consider developing an automated interface to update and exchange this information with other systems.

Transportation needs to establish policies regarding utilization of critical systems to ensure accuracy and completeness of source system data. The policies should address usage and update requirements.

Recommendations

Transportation should establish data standards and use these standards as the basis for future systems development. This will facilitate the transfer of information between systems.

Systems Development

- In the recent past, system users could make informal requests for new systems or changes to existing systems outside of Transportation's organization-wide development and implementation plan resulting in many systems in use that do not communicate.
- To address this problem, Transportation has developed a plan to be able to evaluate both its current and proposed investments in systems development and maintenance and to weigh them to determine the best fit to strategic needs and business improvement priorities.

Recommendations

Transportation should develop a department-wide information technology plan that focuses on what Transportation needs to accomplish its mission. Transportation should evaluate all system development requests against this plan. Transportation should only approve and fund systems and system changes that support Transportation's mission.

Recommendations

Transportation should implement a Development and Maintenance Plan that addresses how Transportation will handle system and information needs before implementing an enterprise system. Management should strictly enforce this policy by defining system development versus system maintenance projects and the procedures for each area.

Transportation, after addressing its interim needs, should complete its work on developing a systematic approach to addressing its enterprise information and systems needs.

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Road Construction

Transportation's current culture and business practices do not support the processes to provide accurate project estimates, adequate quality assurance programs, continuous communications and coordination of information between all necessary divisions, and clear accountability for construction projects.

Design Quality

- Plan errors and omissions are the primary reason why construction costs exceed budgets.
- Design quality suffers due to quantity estimating errors, high demand for plans, low staffing levels and expertise, communication gaps between disciplines, and outdated plans.
- Location and Design has a quality control process but does not follow it to the extent that they must to ensure quality designs.

Project Management

- The culture of Transportation is for each division to assert control over their phase of the construction life cycle (preliminary engineering, right of way, and construction), complete the phase, and then turn the information over so that the next phase can be performed by another division, instead of working as a team.
- Location and Design manages a project during preliminary engineering, including right of way, and Construction manages it through completion.

Project Management

- The current project management process is compartmentalized and control, authority, and responsibility only exist within the individual divisions.
- The movement toward “cradle to grave” project management, in which an individual or group of individuals is responsible for the success or failure of a project, will establish accountability and, ultimately, result in more successful projects which result in a quality product, built on time and on budget.

Project Management

- Transportation has initiated concurrent engineering which promotes performing activities at the same time, with design disciplines beginning their work as soon as input information is available.
- However, this process only covers Preliminary Engineering and Right of Way phases.
- A hand off of the project still occurs when the project goes to construction and a communication gap continues to exist between the involved divisions.

Recommendations

Transportation should increase its efforts to implement the concurrent engineering process, develop ways in which to measure the impact of the process, and identify accountable parties. Transportation should also create a formal constructibility process to help reduce design errors and omissions.

Transportation should develop an aggressive plan to implement cradle to grave project management in an effort to establish accountability for and improve the quality of the entire construction process. This plan could involve single individuals as project managers, project management teams, or a combination of the two. Transportation should clearly define responsibilities and give the appropriate authority to the responsible individuals.

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 - ✓ **Maintenance**

Maintenance

- Transportation does not have a zero-based budgeting process for maintenance.
- Transportation develops the maintenance budget based on historical allocations and additional needs.
- Transportation does not have an objective method to determine maintenance needs and timing of those needs for individual specific assets and types of assets. Area Headquarters' personnel perform an individual assessment of area maintenance needs based on a visual inspection of the roadway surfaces, structures, and drainage items.

Maintenance

- Since there is no systematic way for Transportation to identify its maintenance needs, it is difficult to determine whether the maintenance program is truly under-funded or over-funded.
- The maintenance budget is not a needs based process, therefore, Transportation cannot accurately state that their needs are causing crossover.
- Crossover is the point at which maintenance will take dollars out of construction. Historically, maintenance and general and administrative expenses receive funding first and any excess revenues are transferred to construction.
- However, Transportation anticipates that crossover of \$147 million will occur in fiscal year 2003 and continue through fiscal year 2008 approaching a total of \$900 million for the six year period.

Recommendations

Transportation should implement an objective means of identifying and prioritizing maintenance needs, namely an asset management approach. Transportation should use an automated system to record data and should prioritize needs based on an objective set of criteria.

Transportation should implement asset management to determine the true maintenance needs of the Commonwealth's roads and the relative cost and to determine whether crossover actually exists and to what extent. Then, Transportation should determine how to handle crossover in the future, whether it be by obtaining additional funding or maintaining assets at a lower service level.

Maintenance Work

- Maintenance work is cyclical, primarily occurring during the summer months.
- Maintenance supporting revenues do not flow in the same pattern as the maintenance activities.
- The Maintenance division does not match the timing of cash inflows and expenses throughout the year.
- The Maintenance division does closely monitor its budget and expenses; however, it lacks cash management tools.

Project Management

- Transportation has no formal project management over maintenance activities.
- Maintenance managers and engineers stay involved with projects and track expenses for those projects; however, there are no formal guidelines to follow in doing so.
- There is no one person, or project manager, to see an entire project through to the end.
- Transportation does not have a documented plan in place for implementing project management over maintenance projects.

Recommendations

The Maintenance Division needs to consider cash flows when scheduling maintenance work and entering into maintenance contracts. The Maintenance Division should work with Financial Planning to monitor cash and expense cycles.

Transportation should implement a formal project management plan over maintenance activities, which would include cash management techniques. This could help alleviate the maintenance program's cash shortfalls.

Best Practices

Best Practices

- We believe Transportation's implementation of these recommendations would enable Transportation to better control and manage its cash flow, to use its limited resources more effectively, and to accomplish its primary mission of building and maintaining roads.
- Implementation of these recommendations will require substantial time and effort as well as the cooperation of the CTB, the General Assembly, the Governor, and other state agencies and institutions.

Best Practices

Six Year Program Development

- The CTB must have an objective process to balance resources against needs and desires which begins with a five-year needs assessment.
- From the five-year needs assessment, the CTB should develop a 20 Year Plan that is a financially constrained prioritized list of projects containing estimated project costs.
- The 20 Year Plan should be the foundation for statewide transportation planning and for the SYP.

Best Practices

Six Year Program Development

- Transportation should begin scoping and project design before project placement in the SYP to allow the CTB to determine project feasibility and provide a more realistic project estimate.
- Transportation should assign project management teams at the initial scoping and design of a project.

Best Practices

Six Year Program Development

- Transportation must determine its revenue streams before developing the SYP so that it can predict cash inflows and budget accordingly.
- Before issuing debt, such as the FRANs, Transportation should consider the impact that the issuance will have on current and future revenue streams and cash flows.

Best Practices

Six Year Program Development

- Transportation should carefully monitor and link the timing of cash receipts and payouts to all projects currently authorized.
- For each update cycle of the SYP, Transportation should update realistic cost and time estimates and estimate cash payouts for existing projects in the SYP.

Best Practices

Six Year Program Development

- Transportation should start with the allocated revenue, remove any debt services costs, subtract existing project payouts, and then add new projects as long as project payouts do not exceed cash inflows.
- Once the SYP goes through the public allocation hearing process, the CTB can finalize and approve the SYP.
- Transportation, and more specifically, the CTB should be accountable for achieving the SYP and reporting its achievements and failures.

Best Practices

Six Year Program Implementation

- Project management should continue throughout implementation of the SYP.
- Part of the Project Team's responsibilities is assisting Transportation in implementing a successful design review program that holds designers accountable for poor design quality and costly errors.
- Transportation should continue implementation of concurrent engineering to aid in the acquisition of right of way and utility relocation as early in the process as feasible.
- Before approving the Advertisement Schedule, Transportation should update the cash forecasting model to determine if cash is available to support the schedule.

Best Practices - Construction

- Project management is the key to accountability. Transportation must hold an individual, group, or team accountable for delivering projects on time and on budget.
- Transportation should clearly define roles and responsibilities, establish accountability, delegate necessary authority, and open critical lines of communication so that information flows.
- Transportation must develop and monitor construction project budgets.
- Transportation must consider funding availability and the impact any project changes has on funding.

Best Practices - Maintenance

- Transportation should make the implementation of asset management a priority.
- Transportation should continue its efforts towards this goal and should recognize that there is no way to appropriately fund its maintenance needs without an asset management system to provide sound data and decision-making tools.
- To implement asset management, Transportation must collect a complete inventory of its road systems, perform a condition assessment on these assets, and then identify its true maintenance needs on a statewide level.

Best Practices - Maintenance

- Transportation should prioritize the identified needs based on a set of objective criteria that includes, but is not limited to, safety, mandates, life cycle costs, return on investment, level of service, and user priorities.
- Transportation should develop its maintenance budget based on the prioritized needs and available revenues.

Best Practices - Maintenance

- Transportation should take into consideration the changing spending patterns of the maintenance program and the pattern of incoming revenues to help prevent cash shortfalls.
- As with the Construction process and the SYP, Transportation needs project management to establish accountability for contract and project management in this area.

Best Practices - Systems

- To make decisions properly, Transportation needs timely and accurate information.
- Transportation must have systems that can interact and exchange information.
- Data should be reliable and data fields designed for compatibility.
- Systems should be user friendly and provide management with timely, accurate, easily available management reports.
- Transportation has begun implementation of a Data Warehouse as an interim solution; however, the best practice is ultimately an enterprise solution.

Report Available

The report is available on our website at
www.apa.state.va.us