

**State of Alaska
FY2005 Governor's Operating Budget**

**Department of Transportation/Public Facilities
Design and Engineering Services
Results Delivery Unit Budget Summary**

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Design and Engineering Services Results Delivery Unit

Contribution to Department's Mission

The mission of Design and Engineering Services is to develop projects that improve Alaska's transportation and public facilities infrastructure. D&ES also provides a wide range of technical services to the Department, other state and federal agencies, local governments and the public.

Core Services

The planning of a project requires engineering, environmental and estimating services that are provided to planning staff by Design and Engineering Services. Starting with the initial funding of a project, D&ES has primary responsibility for a project through the completion of a bid-ready set of plans, specifications for the legal and technical contract terms, and an engineer's estimate for the cost of construction. Accompanying the project plans and specifications, D&ES prepares geotechnical reports for the project site and materials sources, obtains the necessary interests in lands for the project, obtains the environmental clearances and project permits and prepares plans and obtains agreements with utility companies for any utility relocations that may be required. The D&ES staff then provides technical assistance during bidding and construction.

The Division provides a wide range of technical support functions to the department, other state and federal agencies, local governments, and the public. Examples include design assistance, traffic speed studies, bridge inspections, materials testing, the processing of utility, right of way and traffic permits, preparation of environmental documents, a full research program and the Local Technical Assistance Program (both funded by the Federal Highway Administration). The Design and Construction Standards section develops standards that are in use throughout the state.

End Results	Strategies to Achieve Results
<p>(1) Improve DOTPF efficiency.</p> <p><u>Target:</u> Reduce design costs compared to total project costs by 5%.</p> <p><u>Measure:</u> Percent change in ratio of design costs to total project costs as compared to 5-year average.</p>	<p>(1) Get construction projects out on the street faster and cheaper.</p> <p><u>Target:</u> Improve the difference between engineer's estimate and construction bid award by 5% from the prior 3-year average.</p> <p><u>Measure:</u> Percent change between engineer's estimate and actual construction bid award as compared to prior 3-year average.</p>

Major Activities to Advance Strategies

- Design roads to appropriate standards
- Minimize in-house costs for preconstruction services
- Manage consultant contracts in a cost effective manner

FY2005 Resources Allocated to Achieve Results

FY2005 Results Delivery Unit Budget: \$41,479,400	Personnel:	
	Full time	437
	Part time	48
	Total	485

Performance Measure Detail

(1) Result: Improve DOTPF efficiency.

Target: Reduce design costs compared to total project costs by 5%.

Measure: Percent change in ratio of design costs to total project costs as compared to 5-year average.

Percent of Design Costs to Total Project Costs

Year	Quarter 1	Quarter 2	Quarter 3	Quarter 4	YTD Total
2003	not available	not available	not available	not available	not available

Analysis of results and challenges: Ratios are calculated by summing the final design costs of all highway construction projects that are closed in a given federal fiscal year, then comparing the total to the total project costs (not including utilities relocation and right of way). It is anticipated that design costs could be reduced through training.

(1) Strategy: Get construction projects out on the street faster and cheaper.

Target: Improve the difference between engineer's estimate and construction bid award by 5% from the prior 3-year average.

Measure: Percent change between engineer's estimate and actual construction bid award as compared to prior 3-year average.

Percent Change Between Engineer's Estimate and Actual Construction Bid Award

Year	Quarter 1	Quarter 2	Quarter 3	Quarter 4	YTD Total
2003	not available	not available	not available	not available	not available

Analysis of results and challenges: Ideally project estimates should accurately predict bids. These estimates are also used for developing the STIP and the capital budget. Within the total program, project costs increase during construction. Appropriations need to reflect the anticipated total cost so that a project is funded through completion. Our estimates, therefore, reflect total cost and are typically higher than bids.

Design and Engineering Services has a consultant under contract, constructing a bid analysis and estimate program. The software development is complete. Training and implementation are expected soon. The program tracks both the engineer's estimate and all of the bid prices allowing for comparison of them. We will use this tool to improve our final project estimates by using historic information to prepare our estimates.

Key RDU Challenges

- Section 1309 of the Transportation Equity Act for the 21st Century calls for a coordinated environmental review process to expedite federal highway and transit projects. Environmental streamlining efforts are underway nationwide. Negotiations for the state's streamlining agreement is taking place. The initiative has two major areas of emphasis: protecting and enhancing environmental quality and reducing project delays.
- Continual improvements in technology, equipment, education and training are making the process of designing and constructing projects easier and more efficient. At the same time the processes related to obtaining the necessary

approvals to build a project are becoming more difficult. Changes in public values related to how transportation decisions affect the natural environment and a community's quality of life call for a new and more adept approach. Nationally state DOT's are embracing environmental stewardship concurrent with Environmental Streamlining as a more informed and effective approach to obtaining public and agency support for projects. The department is reviewing how we do business from a stewardship perspective.

- In this next fiscal year we intend to add utility permitting to the on-line permitting system. We have begun a review of our utility regulations, policies and procedures and will be making any needed improvements concurrent with the on-line utility permitting. (<http://www.dot.state.ak.us/permits/index.html>)
- The Department continues to support various methods to reduce pavement rutting. D&ES is responsible for improved pavement designs. The review of the Department's current practice is ongoing.
- As the department continues to increase reliance on private sector consultants, services previously provided by D&ES staff must be looked at for possible private sector contracting.
- D&ES continues to evaluate designs and design standards to reduce maintenance costs of the completed capital improvement. Capital projects are an effective way to reduce maintenance costs by replacing or refurbishing worn or outdated public facilities. There is an opportunity to assist the maintenance program by incorporating low maintenance design features.
- The department will refine the strategy to deal with \$15 million plus in backlog of harbor deferred maintenance requirements for 44 harbors that are likely to remain state owned.
- The department will renegotiate harbor management agreements for remaining state owned harbors - increase moorage rates to cover required maintenance. The goal is to increase the level of maintenance and reduce unfair competition with locally owned/operated harbors by eliminating state subsidized maintenance for state owned/locally managed harbor facilities.
- The department will begin the process of updating harbor policies, statutes and administrative codes; many are decades out of date. Local governments depend on these documents for harbor management and enforcement guidance.
- The division has been tasked with delivering a slate of projects funded by GARVEE and general obligation bonds totaling \$194.8 million. This is in addition to the normal federally funded highway and aviation programs.
- We continue to experience difficulties in recruitment and retention of engineer's. It is difficult to compete with the private sector salaries. Innovative approaches and developing original programs to specifically address work force issues are necessary.

Significant Changes in Results to be Delivered in FY2005

The most significant change will be the decentralization of Design and Engineering Services. On October 1, 1997 Statewide Design and Engineering Services was created for a central management structure to increase the ability to provide project development services for a much larger transportation program. Decentralization of the design function will allow Regional Directors to oversee the complete process from project development, design through construction. This can facilitate cradle-to-grave project management teams. It is anticipated that the reorganization to decentralize will be in place prior to FY05.

Major RDU Accomplishments in 2003

- The Division delivered a comprehensive program of bid ready designs and contract documents for projects across the state. The Division's performance placed the Department in a position to receive an additional \$3.2 million in Federal Highway Administration funding. The additional funds were available because other states were unable to obligate their full allocations of federal-aid.
- Negotiating the permit for the filling of wetlands (Corps permit) in recent years has become time consuming and mitigation requirements of the permit are often expensive. The Division participated in the execution of a multi-agency agreement streamlining the process for Corps permits for DOT/PF airport projects. In addition, the agreement stabilized mitigation requirements.
- The quality of aggregate for road construction is variable across the state. As a consequence, projects do not realize the project life expected and the department is often in the position of enforcing spring weight restrictions. The division developed a treated base policy neutralizing substandard aggregate materials, which will address reduced design life and weight restrictions.

- The department transferred previously state owned harbors to the City & Borough of Juneau, Cordova, Klawock, Petersburg, and Wrangell. Signed transfer agreements totaling \$20 million for deferred maintenance projects at these locations, committing 63% of the \$32 million G.O. bond money available for harbor projects.

Contact Information
<p>Contact: Gary Hogins, P.E., Acting Chief Engineer Phone: (907) 465-2960 Fax: (907) 465-2460 E-mail: Gary_Hogins@dot.state.ak.us</p>

**Design and Engineering Services
RDU Financial Summary by Component**

All dollars shown in thousands

	FY2003 Actuals				FY2004 Authorized				FY2005 Governor			
	General Funds	Federal Funds	Other Funds	Total Funds	General Funds	Federal Funds	Other Funds	Total Funds	General Funds	Federal Funds	Other Funds	Total Funds
Formula Expenditures												
None.												
Non-Formula Expenditures												
SW Design & Engineering Svcs	882.6	0.0	7,666.0	8,548.6	716.0	0.0	8,148.0	8,864.0	591.4	0.0	7,125.9	7,717.3
Central Design & Eng Svcs	144.0	0.0	12,538.2	12,682.2	133.1	0.0	12,830.5	12,963.6	159.5	0.0	15,114.4	15,273.9
Northern Design & Eng Svcs	135.5	0.0	10,138.0	10,273.5	113.4	0.0	11,047.8	11,161.2	113.4	0.0	11,230.6	11,344.0
Southeast Design & Eng Svcs	252.2	0.0	6,365.2	6,617.4	201.8	0.0	6,510.3	6,712.1	201.8	0.0	6,942.4	7,144.2
Totals	1,414.3	0.0	36,707.4	38,121.7	1,164.3	0.0	38,536.6	39,700.9	1,066.1	0.0	40,413.3	41,479.4

**Design and Engineering Services
Summary of RDU Budget Changes by Component
From FY2004 Authorized to FY2005 Governor**

All dollars shown in thousands

	<u>General Funds</u>	<u>Federal Funds</u>	<u>Other Funds</u>	<u>Total Funds</u>
FY2004 Authorized	1,164.3	0.0	38,536.6	39,700.9
Adjustments which will continue current level of service:				
-SW Design & Engineering Svcs	-26.4	0.0	-942.1	-968.5
-Central Design & Eng Svcs	26.4	0.0	2,283.9	2,310.3
-Northern Design & Eng Svcs	0.0	0.0	182.8	182.8
-Southeast Design & Eng Svcs	0.0	0.0	432.1	432.1
Proposed budget decreases:				
-SW Design & Engineering Svcs	-98.2	0.0	-80.0	-178.2
FY2005 Governor	1,066.1	0.0	40,413.3	41,479.4