

State of Alaska FY2007 Governor's Operating Budget

Department of Transportation/Public Facilities Design and Construction Results Delivery Unit Budget Summary

Design and Construction Results Delivery Unit

Contribution to Department's Mission

Improve the transportation system in Alaska and protect the health and safety of the people of Alaska by developing transportation and public facilities projects and constructing safe, environmentally sound, reliable and cost effective highways, airports, harbors, docks, and buildings.

Core Services

Design: The planning of a project requires engineering, environmental and estimating services. Starting with the initial funding of a project, Design 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, Design staff 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.

Design also 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.

Construction: Administers construction contracts, provides field inspection and construction oversight, provides quality assurance that construction documentation and materials are in conformance with contract requirements during construction and closeout of projects, and reports Disadvantaged Business Enterprises/Minority Business Enterprise activity on construction projects.

Contracts: Reviews construction documents, provides bid packages, advertises and awards contracts, prepares certified bid tabulations, and helps resolve bidding disputes. This unit also coordinates, solicits, selects, prepares and administers professional services agreements.

Project Control: Coordinates and programs project funding; administers state and federal grants; provides engineering management support; prepares and manages the component's operating budget; develops, enhances, maintains Oracle management reporting system for capital projects; provides regional network administration and desktop computer support; and processes time and equipment charges to projects.

End Results	Strategies to Achieve Results
<p>A: Improve DOT&PF efficiency.</p> <p><u>Target #1:</u> Reduce the percent of administrative and engineering costs to 30% or less of total project costs. <u>Measure #1:</u> Percentage of administrative and engineering costs when compared to total project costs.</p> <p><u>Target #2:</u> Advertise 75% of new highway and aviation construction project funding by April 30th. <u>Measure #2:</u> Percentage of highway and aviation construction project funding (determined by engineer's</p>	<p>A1: Reduce design and engineering costs.</p> <p><u>Target #1:</u> Maintain design engineering (PE) averages at 15% or less of total project costs. <u>Measure #1:</u> Design engineering (PE) as a percentage of total project costs.</p> <p><u>Target #2:</u> Improve the percentage of projects that exceed \$1 million having formal pre-authorization scope meetings to 75%. <u>Measure #2:</u> The percentage of projects (with estimated</p>

<p>estimate) advertised by a given date.</p> <p><u>Target #3:</u> Reduce the percentage difference between bid and final contractor payments to 8%.</p> <p><u>Measure #3:</u> The percentage difference between contractor bids and final contractor payments.</p>	<p>construction bid amount over 1 million dollars) having formal pre-authorization scope meeting as compared to total projects receiving authority to proceed.</p> <p>A2: Reduce construction project costs.</p> <p><u>Target #1:</u> Maintain construction engineering (CE) costs at 14.5% or less of total contractor payments.</p> <p><u>Measure #1:</u> Construction engineering (CE) as a percentage of total contractor payments.</p> <p>A3: Accelerate project closeouts.</p> <p><u>Target #1:</u> Close out 80% of construction contracts within the next fiscal year following the project completion date as stated in the Project Completion Letter.</p> <p><u>Measure #1:</u> Percentage of contracts completed (i.e. Letter of Final Acceptance issued) by the end of the fiscal year following the project completion date.</p>
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Major Activities to Advance Strategies

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| <ul style="list-style-type: none"> • Design roads to appropriate standards • Minimize in-house costs for preconstruction services • Manage consultant contracts in a cost effective manner • Timely close-out of construction projects • Compare and contrast cost of in-house CE with consultant CE • Cross training between Design and Construction | <ul style="list-style-type: none"> • Involve Construction in design process from project scoping • Explore innovative contracting methods • Greater use of technology in the field • Create electronic tools to increase efficiency creating Project Development Authorizations (PDAs) • Capture information electronically from PDAs so that double entry into other databases is not required • Permit tracking and electronic signatures to be used in the project control process |
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FY2007 Resources Allocated to Achieve Results

FY2007 Results Delivery Unit Budget: \$90,033,400	Personnel:	
	Full time	743
	Part time	227
	Total	970

Performance Measure Detail

A: Result - Improve DOT&PF efficiency.

Target #1: Reduce the percent of administrative and engineering costs to 30% or less of total project costs.
Measure #1: Percentage of administrative and engineering costs when compared to total project costs.

Percent of Project Costs Attributed to Administrative and Engineering Costs

Fiscal Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	21%	26%	23%	22%	30%
FFY 2005	20%	22%	23%	21%	30%

Analysis of results and challenges: Percentages are calculated by summing up all administrative and engineering costs – i.e., all costs that are not direct construction payments, right-of-way acquisition/relocation payments, or utility relocation payments – and dividing those administrative and engineering costs by the total of all project costs. The aim is to reduce the overhead that accompanies public project development, to get more of each capital dollar into construction or other related fieldwork that directly benefits the private sector and the traveling public.

Target #2: Advertise 75% of new highway and aviation construction project funding by April 30th.

Measure #2: Percentage of highway and aviation construction project funding (determined by engineer's estimate) advertised by a given date.

Percent of construction contracts advertised by April 30th

Fiscal Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2005	31%	42%	51%	38%	75%

Analysis of results and challenges: Percentages are calculated by summing the engineer's estimates for all federal and general fund construction projects advertised by the target dates, then dividing that total by the total engineer's estimate amount of construction projects advertised in that federal fiscal year.

Regional project development will be accelerated to meet this target. Once the department has reached this goal, maintaining it will be little different in terms of work production than what is experienced today. The acceleration phase could result in a temporary increase in inflated construction costs due to less competition among already busy contractors.

The state's general fund program grew substantially in 2005 and is expected to account for a larger portion of the overall highway program for the next several years. The measurement of this target has been revised to include all funding sources. Delay in passage of the current highway transportation bill, SAFETEA-LU, and the subsequent decrease in federal funding levels has created uncertainty in the FFY06 construction program which will hamper the ability to attain this goal.

Target #3: Reduce the percentage difference between bid and final contractor payments to 8%.

Measure #3: The percentage difference between contractor bids and final contractor payments.

Difference between contractor bids and final contractor payments

Fiscal Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	14%	29%	9%	18%	8%
FFY 2005	15%	12%	6%	13%	8%

Analysis of results and challenges: Simply apportioning more of each capital dollar to the private sector is not by itself more efficient. Poorly designed projects and subsequent costly change orders can pour money into the private sector yet be a waste of public funds. The challenge will be to increase the proportion of payments to contractors without sacrificing the quality of engineering and contract administration. This target addresses that concern.

This measure will be determined after a construction project is closed and the final contract amount is known. It will help determine how effective the department is in engineering and administering construction projects. Project cost overruns typically result from quantity overruns, change orders that correct design errors and address unforeseen conditions, and changes to project scope made after contract award. Although elimination of all cost overruns is unrealistic and even cost-prohibitive, they can be controlled by efficient designs, improved

negotiation skills, and disciplined scope management.

FFY04 results for Northern Region reflect two Dalton Highway projects that encountered problems during construction. The gravel pits were determined to contain hazardous waste contamination and unsuitable quality material. This created vast overruns.

A1: Strategy - Reduce design and engineering costs.

Target #1: Maintain design engineering (PE) averages at 15% or less of total project costs.

Measure #1: Design engineering (PE) as a percentage of total project costs.

Percent of Design Costs to Total Project Costs

Fiscal Year	Central Region	Northern Region	Southeast Region	RDU Total
FFY 2004	9%	10%	8%	9%
FFY 2005	7%	8%	9%	8%

Analysis of results and challenges: Ratios are calculated by summing the final design costs of all highway and aviation construction projects that receive final acceptance in a given state fiscal year, then comparing the total to the total project costs.

To provide design engineering services at 15% of the total project costs is a measure of the department's efficiency in the delivery of bid documents. The number is trending upward. The increasing complexity of the design process requires more effort than in previous years. Examples include public involvement demands, regulatory agency constraints, utility relocation costs, right of way costs, and the higher cost of utilizing consultants.

Target #2: Improve the percentage of projects that exceed \$1 million having formal pre-authorization scope meetings to 75%.

Measure #2: The percentage of projects (with estimated construction bid amount over 1 million dollars) having formal pre-authorization scope meeting as compared to total projects receiving authority to proceed.

Percent of Projects having Scope Meetings

Fiscal Year	Central Region	Northern Region	Southeast Region	RDU Total
FFY 2004	47%	0%	50%	37%
FFY 2005	74%	44%	100%	64%

This performance measure was established in the Governor's FY06 budget.

Northern Region reporting for FFY05 reflects using the "one step" process for scoping meetings.

Analysis of results and challenges: Ratios are calculated by summing the number of projects with formal scoping meetings against the total projects receiving authority to proceed.

Bringing all of the department's stakeholders together to discuss all aspects of the project prior to authorization leads to more efficient project development. People view scoping of projects as inconvenient. They may have other high, time sensitive priorities, but it is important to the overall project development efficiency to reach a consensus on the project scope.

A2: Strategy - Reduce construction project costs.

Target #1: Maintain construction engineering (CE) costs at 14.5% or less of total contractor payments.

Measure #1: Construction engineering (CE) as a percentage of total contractor payments.

Construction Engineering Expressed as a Percentage of Total Contractor Payments

Fiscal Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	10.2%	11.1%	12.1%	10.6%	14.5%
FFY 2005	13.0%	11.4%	11.1%	12.3%	14.5%

Analysis of results and challenges: This measure will be accurately determined after a construction project is closed and all construction charges are accounted for. It will not include Indirect Cost Allocation Plan (ICAP) charges. Contract administration costs over the past several years have run at about 14.5%; however, the state's growing capital program is straining department resources and forcing the department to outsource more of its CE work to other agencies as well as the private sector. Outsourced CE tends to be more expensive, so maintaining this target will be a challenge.

This measure is also a challenge because of the remoteness of most of the projects (increasing travel and transportation costs), and because the requirements of the federal funding agencies and the expectations of the traveling public tend to increase over time. All of these factors drive administrative costs up. This measure will change from year to year based on the type and size of projects completed. Small urban projects may require the same level of oversight, i.e., staff, as large rural projects. Projects that consist primarily of asphalt paving are typically completed in a short time resulting in low engineering costs compared to the contract value.

A3: Strategy - Accelerate project closeouts.

Target #1: Close out 80% of construction contracts within the next fiscal year following the project completion date as stated in the Project Completion Letter.

Measure #1: Percentage of contracts completed (i.e. Letter of Final Acceptance issued) by the end of the fiscal year following the project completion date.

Percent of Construction Contracts Closed Before End of Next Fiscal Year

Fiscal Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	28%	52%	81%	45%	80%
FFY 2005	41%	60%	79%	59%	80%

Analysis of results and challenges: Project closeouts are a paperwork chore. The burden of closing out a project largely falls on the same people who must prepare for their next construction assignment or who are already actively engaged in other construction projects. Nevertheless, timely closeout of projects is an important cost-savings benefit to the state as the task itself will be done more efficiently and in some cases its completion will permit leftover construction funds to be released to fund other projects.

Percentages are calculated by dividing the number of projects completed as stated in the Project Completion Letter, which certifies the completion of physical work, in a given federal fiscal year by the number of projects receiving Final Acceptance, or the contract closure, by the end of the following federal fiscal year.

Key RDU Challenges

- Implementing the terms of the new federal transportation bill, *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU), will take considerable effort by senior staff to establish internal policies and procedures. SAFETEA-LU allows the department to assume authority of the federal environmental process on certain projects.
- The aviation program must meet the challenges of changing federal airport program requirements including an expanded role in developing navigational system design plans. The Federal Aviation Administration (FAA) at the regional and national levels has increasingly restricted timeliness for delivery of both environmental approvals and project funding grants. We also continue to increase our discretionary funding beyond baseline entitlements by developing early delivery of high priority projects.
- A key challenge continues to be to retain experienced engineers, right-of-way agents, and environmental analysts. Many are reaching retirement age. It is difficult to find and retain qualified engineering staff willing to take long-term

assignments to remote sites, often requiring exhaustive overtime and on-site presence for up to six months during the summer with little time off.

- Increased security and safety concerns have increased the demands of our Radiation Safety Program. Required Safety Conscious Work Environment training for all construction employees and additional training for the regional radiation safety officers have increased. Greater attention is required for security of nuclear densometers.
- Central Region's main building on Aviation Avenue has insufficient space to accommodate personnel and storage needs. This problem will become more acute when the Gosnell Building, which serves as a satellite office for construction personnel, is demolished in May 2006. Options and funding for new office space will need to be identified. As a result in the growth of the transportation program in recent years, analysis of office space in Fairbanks and Juneau is necessary as well.

Significant Changes in Results to be Delivered in FY2007

We anticipate delivering a much larger state-funded program in FY07.

Major RDU Accomplishments in 2005

- Transferred ownership of harbors from the state to the communities of Yakutat, Coffman Cove, Hoonah and Metlakatla. The division has now committed 98% of the \$32 million G.O. bond money available for harbor projects.
- Received \$466.2 million in federal highway and aviation construction authorization in FFY05.
- Prepared contract documents (plans, specifications and estimates) for the rehabilitation/construction of state-owned bridges.
- Completed runway, taxiway, lighting, environmental and safety improvements at rural airports in Alakanuk, Barrow, Bethel, Birchwood, Chenega, Deering, Hooper Bay, Clarks Point, Cold Bay, Ekwok, St. Paul, Stevens Village and Wales.
- Increased safety for the traveling public by intersection improvements on the Parks Highway at Seward, Huffman Road at Elmore Road, Tudor Road at Bragaw Street and Old Seward Highway, added a signalized 4-way stop in Sitka, installed a round-about in Juneau on Douglas Highway at the bridge, upgraded lighting on College Road in Fairbanks.
- Completed paving 23.3 centerline miles (46.6 lane miles) of gravel road in Central Region including Kodiak's Monaska Bay Road, Anton Larsen Bay Road, Pasagshak Road MP 0-2 and Chiniak Road MP 19-31, and Mat-Su's Chicaloon, Cascade, and Victory Bible Camp roads.
- Complete major upgrades at the Cordova and Whittier ferry terminals to accommodate new fast vehicle ferries.
- Added security improvements to all ferry terminals.
- Completed Americans with Disabilities Act (ADA) projects at the Cook Inlet Pre-Trial and Mat-Su Pre-Trial facilities, and curb ramp upgrades for pedestrians on Bragaw Street from DeBarr Road to the Glenn Highway, A Street and on Tudor Road from Minnesota Drive to 36th Avenue.
- Completed design/build project to replace the Alaska Psychiatric Institute in Anchorage with a new facility.

Contact Information

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**Design and Construction
RDU Financial Summary by Component**

All dollars shown in thousands

	FY2005 Actuals				FY2006 Management Plan				FY2007 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	0.0	0.0	0.0	0.0	750.8	0.0	7,631.7	8,382.5	674.0	0.0	8,074.5	8,748.5
Central Design & Eng Svcs	0.0	0.0	0.0	0.0	258.1	0.0	16,496.4	16,754.5	294.7	0.0	17,591.4	17,886.1
Northern Design & Eng Svcs	0.0	0.0	0.0	0.0	160.7	0.0	13,517.6	13,678.3	166.3	0.0	14,365.5	14,531.8
Southeast Design & Eng Svcs	0.0	0.0	0.0	0.0	253.6	0.0	7,993.2	8,246.8	276.1	0.0	8,718.0	8,994.1
Central Construction & CIP	0.0	0.0	0.0	0.0	188.2	0.0	17,493.2	17,681.4	192.0	0.0	19,509.3	19,701.3
Northern Construction & CIP	0.0	0.0	0.0	0.0	247.2	0.0	12,572.8	12,820.0	290.9	0.0	13,768.4	14,059.3
Southeast Region Construction	0.0	0.0	0.0	0.0	140.2	0.0	5,335.1	5,475.3	148.0	0.0	5,964.3	6,112.3
Totals	0.0	0.0	0.0	0.0	1,998.8	0.0	81,040.0	83,038.8	2,042.0	0.0	87,991.4	90,033.4

Design and Construction
Summary of RDU Budget Changes by Component
From FY2006 Management Plan to FY2007 Governor

All dollars shown in thousands

	<u>General Funds</u>	<u>Federal Funds</u>	<u>Other Funds</u>	<u>Total Funds</u>
FY2006 Management Plan	1,998.8	0.0	81,040.0	83,038.8
Adjustments which will continue current level of service:				
-SW Design & Engineering Svcs	-84.1	0.0	373.9	289.8
-Central Design & Eng Svcs	30.9	0.0	861.5	892.4
-Northern Design & Eng Svcs	2.8	0.0	716.3	719.1
-Southeast Design & Eng Svcs	19.1	0.0	651.2	670.3
-Central Construction & CIP	3.2	0.0	1,847.7	1,850.9
-Northern Construction & CIP	42.7	0.0	669.4	712.1
-Southeast Region Construction	6.6	0.0	278.7	285.3
Proposed budget increases:				
-SW Design & Engineering Svcs	7.3	0.0	68.9	76.2
-Central Design & Eng Svcs	5.7	0.0	233.5	239.2
-Northern Design & Eng Svcs	2.8	0.0	131.6	134.4
-Southeast Design & Eng Svcs	3.4	0.0	73.6	77.0
-Central Construction & CIP	0.6	0.0	168.4	169.0
-Northern Construction & CIP	1.0	0.0	526.2	527.2
-Southeast Region Construction	1.2	0.0	350.5	351.7
FY2007 Governor	2,042.0	0.0	87,991.4	90,033.4