

Office of the
Legislative Fiscal Analyst

FY 2003 Budget Recommendations

Joint Appropriations Subcommittee for
Transportation and Environmental Quality

Utah Department of Transportation
Engineering Services

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1.0 Department of Transportation - Engineering Services

Summary

The Preconstruction Division, the Planning and Programming Division, and the Right of Way Division were combined several years ago into one line item called Engineering Services.

These programs are responsible for developing Utah highways from an idea stage through the planning and engineering stages until a project is to the point where a contract for construction is awarded to build the highway.

	Analyst FY 2003 Base	Analyst FY 2003 Changes	Analyst FY 2003 Total
Financing			
General Fund	170,000		170,000
Transportation Fund	13,112,600	12,400	13,125,000
Transportation Fund, One-time		100,000	100,000
Federal Funds	7,617,700		7,617,700
Dedicated Credits Revenue	603,500		603,500
Total	\$21,503,800	\$112,400	\$21,616,200
Programs			
Safety Operations	2,033,400	12,400	2,045,800
Traffic Safety	1,941,700		1,941,700
Program Development	6,158,100	100,000	6,258,100
Preconstruction Administration	1,005,400		1,005,400
Structures	2,075,700		2,075,700
Materials Lab	3,332,600		3,332,600
Engineering Services	2,267,500		2,267,500
Right-of-Way	1,686,400		1,686,400
Research	1,003,000		1,003,000
Total	\$21,503,800	\$112,400	\$21,616,200
FTE/Other			
Total FTE	262		262

2.0 Issues: Engineering Services

2.1 Location Reference Engine Systems Development

UDOT has a number of agency management systems that have been developed over time that have incorporated numerous location reference numbering conventions and identification parameters. A sampling of these systems is the Pavement Condition System, Maintenance Management System, Traffic Accident Data, Bridge Management System, and Features Inventory. Currently, there are over twenty variations to reference those information sources.

If there was a system that allowed these various information systems to share and analyze data across systems, time and effort now requiring a manual processes could make UDOT employees much more efficient. For example, UDOT could compare accident data in a particular location with pavement condition data and combine it with information on pavement treatments for a particular segment of highway to create a better highway. The Department is requesting funding to create a Location Reference Engine project to create this cross referencing system. It is anticipated that this system will require three years to develop at a cost between \$1 and \$1.5 million. The Analyst is recommending \$100,000 of one-time Transportation Funds that will be combined with \$200,000 of Federal Funds to initiate the first phase of this project.

2.2 Performance Management Initiative Internal Plan

Intent statements have been included in the past several years appropriation bills directing the Department to implement adjustment improvements in the Department. The Department is nearing completion of this reorganization. Budget recommendations for the urban regions and Department headquarters show the continuing progress toward those adjustments.

Because restructuring continues throughout the Department the Analyst recommends including the following intent statement that directs the Department to complete the adjustments and report to the Legislature the results of the restructuring:

It is the intent of the Legislature that the Department of Transportation continue to implement the adjustment improvements contained in their Performance Management Initiative Internal Plan. This plan will continue to be updated and coordinated through the Performance Management Team, with the approval from and implementation directed by the Department's Executive Director.

It is the intent of the Legislature that the Department make a report to the Interim Executive Appropriations Committee and Transportation Interim Committee prior to the General 2002 Legislative Session, indicating the efficiencies and cost reductions that have been achieved and those that are anticipated as a result of implementing these improvement actions.

It is the intent of the Legislature that the Department of Transportation, in conjunction with these improvement initiatives, be given authorization to adjust the assignment of FTE positions between line items as may be necessary in order to achieve the objectives of this plan. Such reassignments of FTE positions will be included in the report to the Interim Executive Appropriations Committee and Transportation Interim Committee and any transfer of funding will be facilitated through a supplemental appropriations request in the 2002 Session.

3.1 Safety Operations

Recommendation

The Legislative Fiscal Analyst recommends that an operating budget of \$2,045,800 be appropriated by the Legislature for the Safety Operations program of the Engineering Services Division. Reflected in this recommendation is \$1,831,400 to fund the salaries and benefits for 31 FTE positions. The Analyst's recommendation also includes \$32,900 for travel, \$333,500 for current expense items. The Division will receive approximately \$152,000 in reimbursements for signs and signal services from local governments during FY 2003.

	2001	2002	2003	Est/Analyst
Financing	Actual	Estimated	Analyst	Difference
Transportation Fund	1,797,200	1,871,400	1,885,700	14,300
Federal Funds	214,200	137,200	139,900	2,700
Dedicated Credits Revenue	9,000	20,200	20,200	
Transfers - Within Agency	(67,200)			
Total	\$1,953,200	\$2,028,800	\$2,045,800	\$17,000
Expenditures				
Personal Services	1,609,700	1,826,800	1,831,400	4,600
In-State Travel	9,000	9,000	9,000	
Out of State Travel	23,900	23,900	23,900	
Current Expense	349,400	321,100	333,500	12,400
DP Current Expense	102,600			
DP Capital Outlay	48,300			
Other Charges/Pass Thru	(189,700)	(152,000)	(152,000)	
Total	\$1,953,200	\$2,028,800	\$2,045,800	\$17,000
FTE/Other				
Total FTE	31	31	31	

Purpose

The responsibility of the Safety Operations Program is to install or modernize the traffic signals and other control devices on the state highway system.

During FY 2001 the sign section of Safety Operations fabricated approximately 5,000 signs. This represents approximately 40 percent of the Department of Transportation sign requirements. The remaining 60 percent is purchased from the Utah Correctional Industries.

In conjunction with the rebuild of I-15 in the Salt Lake Valley and with approval of the Legislature the Department of Transportation built a Traffic Operations Center adjacent to the Region Two headquarters. This center is designed to assist the department in managing traffic flows throughout the valley. The facility is now operational.

The Department has developed a section in the Traffic Safety Program to coordinate this system and other Intelligent Traffic System services throughout the Department. These systems include but are not limited to support for Advanced Traveler Information Systems (ATIS), Incident Management technologies, Commercial Vehicle Operations, and 2002 Olympics.

3.2 Traffic Safety

Recommendation

A FY 2003 operating budget of \$1,941,700 is recommended by the Analyst for the Traffic Safety program of the Safety Division. The Analyst's recommendation includes \$1,707,400 for salaries and benefits, \$27,000 for travel, and \$205,100 for current expenses. The anticipated budget for data processing current expense is \$2,200.

	2001	2002	2003	Est/Analyst
	Actual	Estimated	Analyst	Difference
Financing				
General Fund	62,000	62,000	62,000	
Transportation Fund	1,539,200	1,578,900	1,580,900	2,000
Federal Funds	116,300	262,300	263,500	1,200
Dedicated Credits Revenue	30,300	34,800	35,300	500
Transfers - Within Agency	103,000			
Total	\$1,850,800	\$1,938,000	\$1,941,700	\$3,700
Expenditures				
Personal Services	1,598,600	1,701,800	1,707,400	5,600
In-State Travel	13,000	13,000	13,000	
Out of State Travel	16,000	15,900	14,000	(1,900)
Current Expense	220,700	205,100	205,100	
DP Current Expense	2,500	2,200	2,200	
Total	\$1,850,800	\$1,938,000	\$1,941,700	\$3,700
FTE/Other				
Total FTE	30	30	30	

Purpose

The function of the Traffic Safety section is to see that the statewide highway system meets the traffic control specifications set up by the Federal Highway Administration. It is also their responsibility to see that all safety funds allocated by the federal government for the purpose of accident studies, railroad crossing studies, etc. are used as intended.

This program oversees traffic studies to monitor signals, speed limit tolerances, school zones and ramp metering, to name a few. They also develop accident reports for accidents on State highways and submit an annual report to the Federal Highway Administration. The section also has responsibility for railroad and tram inspections.

3.3 Program Development

Recommendation

It is recommended that \$6,258,100 be appropriated by the Legislature for Program Development in FY 2003. Reflected in this recommendation is \$108,000 from the General Fund. The General Fund appropriation is for matching money for rural mass transportation grants, for Federal rail planning grants, and for "pass-through" funds to the Association of State and Local Governments. These funds are used to help secure approximately \$200,000 in Federal nonhighway grants for this program. There is also included in the plan of financing \$2,310,200 in Transportation Funds, \$3,731,900 from Federal Funds, and \$8,000 in Dedicated Credits.

The recommendation includes 64 FTE with funding for personal services at \$4,154,300. Travel for the program is recommended at \$74,000 with sixty-seven percent projected to be used for in-state travel.

Current expense is recommended at \$762,800. Capital outlay is recommended at \$50,000. An appropriation of \$1,206,000 in the other expenditures is federal funds that are passed through to local governments by the Department of Transportation.

	2001	2002	2003	Est/Analyst
	Actual	Estimated	Analyst	Difference
Financing				
General Fund	108,000	108,000	108,000	
Transportation Fund	2,449,500	2,351,200	2,310,200	(41,000)
Transportation Fund, One-time			100,000	100,000
Federal Funds	5,375,300	3,717,900	3,731,900	14,000
Dedicated Credits Revenue	1,600	8,000	8,000	
Transfers - Within Agency	156,900			
Beginning Nonlapsing		115,000		(115,000)
Closing Nonlapsing	(115,000)			
Total	\$7,976,300	\$6,300,100	\$6,258,100	(\$42,000)
Expenditures				
Personal Services	4,303,200	4,129,300	4,154,300	25,000
In-State Travel	44,100	44,000	44,000	
Out of State Travel	48,100	32,000	30,000	(2,000)
Current Expense	505,700	662,800	762,800	100,000
DP Current Expense	(35,700)	11,000	11,000	
Capital Outlay	94,800	215,000	50,000	(165,000)
Other Charges/Pass Thru	3,016,100	1,206,000	1,206,000	
Total	\$7,976,300	\$6,300,100	\$6,258,100	(\$42,000)
FTE/Other				
Total FTE	64	64	64	

Purpose

The Transportation Planning Program is responsible to plan and program what highway projects will be built in the State. The plan includes the projects currently being built, one year projections and five year projections. Careful planning is essential to put available revenue to the highest priority highways.

The Policy and Systems Planning office studies future transportation needs, develops long and short range plans and determines the funding requirements for a specific highway construction project. This office also develops capital improvement programs for the Department of Transportation, coordinates federal construction and state construction projects with participating city and county governments. This office also monitors State aid programs such as the "B and C" road fund.

2.1 Location Reference Engine Systems Development

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If there was a system that allowed these various information systems to share and analyze data across systems, time and effort now requiring a manual processes could make UDOT employees much more efficient. For example, UDOT could compare accident data in a particular location with pavement condition data and combine it with information on pavement treatments for a particular segment of highway to create a better highway. The Department is requesting funding to create a Location Reference Engine project to create this cross referencing system. It is anticipated that this system will require three years to develop at a cost between \$1 and \$1.5 million. The Analyst is recommending \$100,000 of one-time Transportation Funds that will be combined with \$200,000 of Federal Funds to initiate the first phase of this project.

3.4 Preconstruction Administration

Recommendation

The Analyst recommends a FY 2003 appropriation for Preconstruction Administration of \$1,005,400. These funds cover personal services and operating expenses of the 12 FTE who operate this program.

	2001 Actual	2002 Estimated	2003 Analyst	Est/Analyst Difference
Financing				
Transportation Fund	799,400	876,700	878,400	1,700
Federal Funds	81,500	125,800	127,000	1,200
Transfers - Within Agency	119,500			
Total	<u>\$1,000,400</u>	<u>\$1,002,500</u>	<u>\$1,005,400</u>	<u>\$2,900</u>
Expenditures				
Personal Services	695,200	861,600	864,500	2,900
In-State Travel	2,000	1,900	1,900	
Out of State Travel	11,500	11,400	11,400	
Current Expense	66,100	64,600	64,600	
DP Current Expense	225,600	63,000	63,000	
Total	<u>\$1,000,400</u>	<u>\$1,002,500</u>	<u>\$1,005,400</u>	<u>\$2,900</u>
FTE/Other				
Total FTE	11	12	12	

Purpose

The responsibility of the Preconstruction Division encompasses those design and engineering activities necessary to advance highway projects after funds are programmed for a project to the point where a contract for construction is awarded to a successful bidder. The Preconstruction Division provides administrative oversight for the Project Management System, Hydraulics, Roadway Design, Structures Design, Materials and Testing, Engineering Services, and Right of Way sections.

3.5 Structures

Recommendation

The Analyst recommends an appropriation of \$2,075,700 for the Structures program of Preconstruction. Funding includes \$1,191,400 from the Transportation Fund, and \$884,300 from Federal Funds. The appropriation funds 26 FTE positions at a cost of \$1,925,300 coupled with \$20,000 in travel costs, and \$105,400 for current expenses.

	2001	2002	2003	Est/Analyst
	Actual	Estimated	Analyst	Difference
Financing				
Transportation Fund	1,116,500	1,187,100	1,191,400	4,300
Federal Funds	1,218,000	878,700	884,300	5,600
Transfers - Within Agency	(354,900)			
Total	<u>\$1,979,600</u>	<u>\$2,065,800</u>	<u>\$2,075,700</u>	<u>\$9,900</u>
Expenditures				
Personal Services	1,775,500	1,915,400	1,925,300	9,900
In-State Travel	17,300	17,100	17,100	
Out of State Travel	3,300	2,900	2,900	
Current Expense	156,900	105,400	105,400	
DP Current Expense	25,800	25,000	25,000	
Capital Outlay	800			
Total	<u>\$1,979,600</u>	<u>\$2,065,800</u>	<u>\$2,075,700</u>	<u>\$9,900</u>
FTE/Other				
Total FTE	26	26	26	

Purpose

The Structures Section of the Department of Transportation has the responsibility for preparing complete plans, specifications, and estimates for all structures required in connection with the State highway system.

The Federal Highway Administration is placing emphasis in three areas; bridge scour, earthquake, and bridge management. The Division has inspected approximately half (1,350) of the bridges in the State this past year. With much of the Interstate System being over twenty-five years old, greater emphasis will be required to maintain the bridges to safety standards.

Performance Measures

During FY 2001, Structures inspected bridges on the local system throughout the State. They also reviewed bridges designed by consultants. Ten box culverts were designed and detailed. Projects were prepared involving thirty-five structures providing for joint closure and replacement, deck repair and general maintenance.

3.6 Materials Lab

Recommendation

An appropriation of \$3,332,600 is recommended for the Materials Section of the Preconstruction Division. Reflected in this figure is \$1,919,500 from the Transportation Fund, \$873,100 in Federal Funds, and \$540,000 in dedicated credits (recovery of expenditures for services and materials). Included in the Analyst's recommendation for the Materials Lab is \$2,602,400 for salaries and benefits, \$46,000 for travel, \$458,500 for current expense, and \$225,000 for capital outlay. The capital outlay budget is to replace worn and obsolete equipment in the materials lab.

	2001	2002	2003	Est/Analyst
	Actual	Estimated	Analyst	Difference
Financing				
Transportation Fund	1,889,800	1,937,700	1,919,500	(18,200)
Federal Funds	709,800	871,300	873,100	1,800
Dedicated Credits Revenue	887,800	520,000	540,000	20,000
Transfers - Within Agency	(5,400)			
Beginning Nonlapsing	18,000			
Lapsing Balance	(333,100)			
Total	\$3,166,900	\$3,329,000	\$3,332,600	\$3,600
Expenditures				
Personal Services	2,511,500	2,596,600	2,602,400	5,800
In-State Travel	34,900	32,200	30,000	(2,200)
Out of State Travel	16,000	16,000	16,000	
Current Expense	459,000	458,500	458,500	
DP Current Expense	400	700	700	
Capital Outlay	145,100	225,000	225,000	
Total	\$3,166,900	\$3,329,000	\$3,332,600	\$3,600
FTE/Other				
Total FTE	41	40	40	

Purpose

The Materials Section is responsible for the following essential functions:

1. Testing of materials in the laboratory to insure that materials properties are adequately evaluated before being incorporated into construction.
2. Design of materials, including pavement thickness design, structure foundation design, slope stability design, and landslide repair.
3. Inspection of materials in manufacturer's fabricating shops prior to shipment to the projects to insure specification compliance.
4. Certification of laboratory technicians in the district and field laboratories to insure that technicians are able to satisfactorily perform required test procedures.
5. Certification of laboratory equipment in the central, district and field laboratories to insure the equipment is in proper working condition.

6. Review of all preconstruction materials work performed by the districts.
7. Evaluation of data generated by testing cores taken from failed pavements to develop strategies for pavement rehabilitation.
8. Certification at the completion of projects that the materials used on the projects have met specification requirements.
9. Purchasing of test equipment for the central, district, and field laboratories.

3.7 Research

Recommendations

The Analyst recommends a FY 2003 appropriation for the Research Program of \$1,003,000. These funds will cover personal services and operating expenses of the 9 FTE who operate this program. The recommendation also includes \$100,000 to continue to contract with Utah State University for research at their Center for Advanced Transportation Studies.

	2001	2002	2003	Est/Analyst
	Actual	Estimated	Analyst	Difference
Financing				
Transportation Fund	633,000	651,600	652,900	1,300
Federal Funds	1,678,500	348,600	350,100	1,500
Transfers - Within Agency	205,200			
Total	\$2,516,700	\$1,000,200	\$1,003,000	\$2,800
Expenditures				
Personal Services	676,500	716,400	719,200	2,800
In-State Travel	1,800	1,900	1,900	
Out of State Travel	16,000	16,100	16,100	
Current Expense	1,810,500	265,800	265,800	
DP Current Expense	7,100			
Capital Outlay	4,800			
Total	\$2,516,700	\$1,000,200	\$1,003,000	\$2,800
FTE/Other				
Total FTE	9	9	9	

Purpose

The Research and Development Program was separated from the Materials Lab Program in FY 1993. Their function in the Department is to research problems confronting the Department that requires more than a routine investigation to resolve. They evaluate new products, procedures, test methods and experimental features, and determine the usefulness and practicality before adoption by the Department.

The Research Program has a working relationship with the universities throughout the state to conduct research that can best be accomplished with the expertise of those research institutions.

3.8 Engineering Services

Recommendation

The Analyst recommends a FY 2003 budget for Engineering Services of \$2,267,500. The personal service budget for 29 FTE's is recommended at \$2,108,700. Travel is recommended at \$15,600. The current expense projection is \$141,900 with a big portion being expended on printing and copying of plans prepared for the advertising process.

	2001	2002	2003	Est/Analyst
	Actual	Estimated	Analyst	Difference
Financing				
Transportation Fund	1,549,800	1,574,200	1,575,000	800
Federal Funds	529,400	690,100	692,500	2,400
Transfers - Within Agency	(94,100)			
Total	<u>\$1,985,100</u>	<u>\$2,264,300</u>	<u>\$2,267,500</u>	<u>\$3,200</u>
Expenditures				
Personal Services	1,877,900	2,105,500	2,108,700	3,200
In-State Travel	5,200	5,200	5,200	
Out of State Travel	10,200	10,400	10,400	
Current Expense	90,600	141,900	141,900	
DP Current Expense	1,200	1,300	1,300	
Total	<u>\$1,985,100</u>	<u>\$2,264,300</u>	<u>\$2,267,500</u>	<u>\$3,200</u>
FTE/Other				
Total FTE	30	29	29	

Purpose

The Engineering Services Program is part of the Office of Preconstruction and is responsible for standards and specifications, consultant services, project advertisements, and value engineering and special studies.

Standards and specifications is responsible for the development, coordination and implementation of specifications, supplemental specifications, special provisions and standard drawings. They also maintain files, design updates, and revisions, and distribute all types of specifications.

Consultant services is responsible for managing the use of engineering consultants for the Department, Districts, and Divisions in obtaining and using consultants. The major activities include directing the consultant selection process; negotiating contracts, managing contracts; reviewing, approving, and assisting with consultant contracts on state highway projects.

Advertising is responsible for the preparation and assembly of approved construction plans and contract proposals and for their advertisement and distribution.

The Value Engineering unit coordinates value engineering studies to determine cost benefits of highway development throughout the State of Utah.

3.9 Right of Way

Recommendation

The Analyst recommends \$1,686,400 to the Right-of-Way Division for FY 2003. There is reflected in the Analyst's recommendation \$1,289,900 for salaries and benefits, \$8,100 for travel, and \$385,400 for current expenses.

	2001	2002	2003	Est/Analyst
	Actual	Estimated	Analyst	Difference
Financing				
Transportation Fund	1,063,700	1,128,400	1,131,000	2,600
Federal Funds	318,900	554,600	555,400	800
Transfers - Within Agency	(63,200)			
Total	<u>\$1,319,400</u>	<u>\$1,683,000</u>	<u>\$1,686,400</u>	<u>\$3,400</u>
Expenditures				
Personal Services	1,098,400	1,286,500	1,289,900	3,400
In-State Travel	3,000	3,100	3,100	
Out of State Travel	6,200	7,000	7,000	
Current Expense	210,800	385,400	385,400	
DP Current Expense	1,000	1,000	1,000	
Total	<u>\$1,319,400</u>	<u>\$1,683,000</u>	<u>\$1,686,400</u>	<u>\$3,400</u>
FTE/Other				
Total FTE	20	21	21	

Purpose

The Right of Way Division of the Department of Transportation is responsible for acquiring access to properties designated for planned state highway construction, and insures that the State has clear title to acquired properties. After plans for new highway construction have been formulated, the Right-of-Way Division begins the process of land acquisition. This entails appraisal of the property, negotiating on the purchase price, and settling any claims for relocation and assistance. If litigation is required to obtain access to designated properties, members of the Right-of-Way staff are qualified to assist in Eminent Domain proceedings.

4.0 Additional Information: Engineering Services

4.1 Funding History

	1999	2000	2001	2002	2003
	Actual	Actual	Actual	Estimated	Analyst
Financing					
General Fund	170,000	1,023,000	170,000	170,000	170,000
Transportation Fund	10,300,300	9,724,800	12,838,100	13,157,200	13,125,000
Transportation Fund, One-time					100,000
Federal Funds	9,148,400	10,281,700	10,241,900	7,586,500	7,617,700
Dedicated Credits Revenue	568,800	540,300	928,700	583,000	603,500
Transfers - Intergovernmental	(248,300)				
Transfers - Within Agency	248,400	157,600	(200)		
Beginning Nonlapsing			18,000	115,000	
Closing Nonlapsing		(18,000)	(115,000)		
Lapsing Balance	(393,300)	(67,000)	(333,100)		
Total	\$19,794,300	\$21,642,400	\$23,748,400	\$21,611,700	\$21,616,200
Programs					
Safety Operations	1,755,900	1,573,900	1,953,200	2,028,800	2,045,800
Traffic Safety	1,732,600	1,827,800	1,850,800	1,938,000	1,941,700
Program Development	6,986,200	8,292,000	7,976,300	6,300,100	6,258,100
Preconstruction Administration	521,100	570,300	1,000,400	1,002,500	1,005,400
Environmental	450,600				
Structures	1,638,600	1,813,600	1,979,600	2,065,800	2,075,700
Materials Lab	3,101,000	3,113,600	3,166,900	3,329,000	3,332,600
Engineering Services	870,900	1,310,800	1,985,100	2,264,300	2,267,500
Right-of-Way	1,189,000	1,246,800	1,319,400	1,683,000	1,686,400
Research	1,548,400	1,893,600	2,516,700	1,000,200	1,003,000
Total	\$19,794,300	\$21,642,400	\$23,748,400	\$21,611,700	\$21,616,200
Expenditures					
Personal Services	14,491,000	14,738,600	16,146,500	17,139,900	17,203,100
In-State Travel	108,800	115,300	130,300	127,400	125,200
Out of State Travel	93,700	104,400	151,200	135,600	131,700
Current Expense	2,923,300	3,170,100	3,869,700	2,610,600	2,723,000
DP Current Expense	40,400	219,000	330,500	104,200	104,200
DP Capital Outlay			48,300		
Capital Outlay	462,200	454,000	245,500	440,000	275,000
Other Charges/Pass Thru	1,674,900	2,841,000	2,826,400	1,054,000	1,054,000
Total	\$19,794,300	\$21,642,400	\$23,748,400	\$21,611,700	\$21,616,200
FTE/Other					
Total FTE	251	246	262	262	262