FY 2020 / FY 2021 BUSINESS CASE

Agency: Utah Department of Transportation

Request Title: Lane Miles

Request Amount & Source:

FY 2020 One-time	FY 2021 One-time	FY 2021 Ongoing	Total Request
$0	$0	$343,506	$343,506

Performance Improvement Specialist & Contact Information: Alana Spendlove

1. What system or program is the focus of this request?

The primary program that is the focus of this request is the Maintenance and Operation of Utah Roadways program, commonly called the UDOT Code One Budget. The Code One Budget supports roadway daily operation and maintenance such as:

- snow and ice removal;
- pavement repairs and pothole patching;
- sign, guardrail, fence, and other roadside appurtenance repairs;
- drain cleaning;
- pavement striping;
- roadside vegetation and erosion control;
- litter control and sweeping; and
- other upkeep as needed.

Following the philosophy that "good roads cost less," one of UDOT's primary purposes is to proactively preserve and maintain in a state of good repair Utah's network of state roads. To maintain state roads, UDOT establishes target performance levels to be maintained for each roadway in the state. These target service levels are based on traffic volume, safety considerations, and roadway integration into the overall state transportation system. A key element of system preservation is proactive maintenance. Proactive maintenance consists of those activities, as mentioned above, done on a routine basis to keep the road network functioning safely.

2. What are the current performance metrics for the system or program, including a measure for QT/OE? [*Cabinet agencies are required to identify the system's quality, throughput, and operating expenses (QT/OE) for all requests. QT/OE measures must be specified below, but don't have to be entered in SMIS until the funding request is approved. Note that QT/OE measures should be defined at the system level, which may include a broader range of activities than those addressed by this specific request.]*

See attached form at the end of this business case.

3. Summarize the current budget for this system or program. If this is a new system or program, summarize the current budget for the line item and appropriation code(s) in which this new system or program will operate.

For FY-2020, the budget allocated to the regions for maintenance activities is $119,675,400.

4. What problem would be solved with additional funding? Show historical data to support and quantify problem statement.

Current Problem to be Solved with Additional Funding

The cost to maintain Utah's state highways is the sum of costs related to maintaining each roadway's features (pavement, signs, striping, guardrail, and so forth) at a level that is consistent with current performance measures. Because of recent and proposed additions to the highway system, maintenance requirements have increased and will continue to grow. To maintain the level of service on the new highway sections that UDOT has maintained on the existing highway system, additional funding is needed.

To support these lane-mile increases, UDOT requests an ongoing statewide maintenance budget increase of $343,506 for FY-2021. When added to the current base budget, this amount will support labor costs, equipment usage costs, material costs, and contracted maintenance costs for the equivalent of 85.80 added lane miles. These added 85.80 lane miles include road capacity increases both from projects funded by sources other than the Transportation Investment Fund (TIF) and from two road-ownership transfers to UDOT from local governments.

TIF-funded projects will also add lane miles; however, because the TIF includes funding for ongoing maintenance of these lane miles, no additional funding is needed.

The requested budget increase will allow UDOT to proactively maintain new construction, reconstruction, betterments, and capacity enhancement projects at acceptable service levels.

Distribution of Added Lane Miles and Associated Funding Needs

Region	Lane Miles Added	One-Time Need	Ongoing Need	Total
2	32.94	$0	$121,039	$121,039
3	41.31	$0	$180,318	$180,318
4	11.55	$0	$42,148	$42,148

Total	85.80	$0	$343,506	$343,506

The specific locations where new lane miles will be added and estimated annual costs to maintain the new lane miles are shown below:

Additions to the System That Will Require Maintenance Beginning in FY 2021

REG.	PIN	CATEGORY	PROJECT DESCRIPTION	ADDED LANE MILES	UNIT COST	TOTALS
2	15615	High Vol/Urban	SR-190 to NB I-215 (Knudsen's)	0.16	$ 4,365	$ 698
2	15202	High Vol/Urban	SR 201; 7200 W to 8000 W (Frontage Road)	0.18	$ 4,365	$ 786
2	13775	High Vol/Rural	SR 36 - Shoulder Widening	6.00	$ 3,479	$ 20,874
2	12571	High Vol/Rural	SR-73 - Shoulder Widening	13.51	$ 3,479	$ 47,001
2	13150	High Vol/Rural	SR-32 - Shoulder Widening	2.69	$ 3,479	$ 9,359
2	13585	High Vol/Urban	SR-151; 10600 South - Redwood to South Jordan	6.93	$ 4,365	$ 30,249
2	13463	High Vol/Rural	SR-36; SR-73 to 3 O'clock Drive	3.47	$ 3,479	$ 12,072
			Reg. 2 Totals	***32.94***		***$ 121,039***
3	15275	High Vol/Urban	SR-68; Village Pkwy. to Grandview in Saratoga Spgs	7.30	$ 4,365	$ 31,865
3	N/A	High Vol/Urban	SR-129 (North County Blvd) ; US89 to SR-92 (from Utah County -36 Lane Miles UDOT Transferred SR-146	22.60	$ 4,365	$ 98,649
3	N/A	High Vol/Urban	SR-135; Pleasant Grove Blvd. (from Pleasant Grove	4.50	$ 4,365	$ 19,643
3	N/A	High Vol/Urban	SR-241; MP.416 to US-89	5.91	$ 4,365	$ 25,797
3	10265	High Vol/Urban	SR-198; Woodland Hills Dr to Arrowhead Trail in SF	1.00	$ 4,365	$ 4,365
			Reg. 3 Totals	***41.31***		***$ 180,318***
4	14366	High Vol/Urban	SR-9; Passing Lanes, Midway to Rockville	2.47	4365	$ 10,782
4	13411	High Vol/Rural	US-191; Extend SB Passing Lane, MP 78.8 to 79.2	1.95	3479	$ 6,784
4	13664	High Vol/Rural	SR-10; 3200 South to 1150 South, Price	3.96	3479	$ 13,777
4	16307	High Vol/Rural	SR-14; Bicycle Safety Project	2.46	3479	$ 8,558
4	14321	Low Vol/Rural	SR-128; MP 20.31 - 44.56	0.71	3165	$ 2,247
			Reg. 4 Totals	***11.55***		***$ 42,148***
			STATEWIDE TOTAL	***85.80***		***$ 343,506***

High Vol/Urban	**51.05**
High Vol/ Rural	**34.04**
Low Vol/ Rural	**0.71**
Total	**85.80**

The estimated costs in the table above were derived by examining the costs for all maintenance activities in the three most recent years for which data are available. In this case, costs for maintenance activities for high-volume urban roads, high-volume rural roads, and low-volume rural roads from fiscal years 2019, 2018, and 2017 were used to develop an average cost per lane mile. Please note these estimates do not account for inflation, and because this request is for Fiscal Year 2021, the estimated cost is roughly three years behind the projected cost. Therefore, the costs above represent a conservative estimate of the actual need.

Historical Data

The problem of stretched resources due to an ever-expanding road network can be illustrated by historic data for Region 2. In Region 2, there are 142 staffed FTEs in the maintenance force to take care of 4,798 lane-miles (a lane-mile is an area 12-feet wide by 1-mile long). That equates to 33.79 surface areas per FTE. With the addition of 32.94 lane miles for FY-2021, that ratio increases to 34.02 surface areas per FTE.

While there have not been any FTEs added to the Region 2 workforce in the last ten years, the number of surface areas has continually increased, as shown in the following table:

Region 2 Surface Areas and Surface Areas/FTE

Year	2012	2014	2016	2018
Surface Areas	3,617	3,808	3,869	4,798
SA/FTE	25.47	26.82	27.24	33.79

The table also shows a steady increase in the ratio of surface areas per FTE (SA/FTE). The budget increase UDOT is requesting will not reduce the ratio to historic levels.

5. What has been done to solve this problem with existing resources? What were the results?

UDOT Maintenance is constantly striving to find ways to accomplish an ever-increasing workload (due to system growth) using the existing available labor and equipment resources. Drawing on the results of various methods studies and research studies, UDOT has implemented several initiatives that have successfully saved time, materials, and money. A few of these initiatives are listed below.

- Anti-icing by pre-treating roads and pre-wetting salt.
- Using enhanced equipment such as wing plows and tow plows that allow more road surface area to be cleaned in a single pass.
- Performing preventative pavement maintenance.
- Implementing an automated vehicle location system in snow plow trucks to allow managers to view in real time where effort is being deployed, and respond quickly when other areas require more resources.
- Establishing snow and ice performance metrics based on level-of-service measures and road classifications to help focus resources on priority routes.

6. How will new funding be utilized? What operational changes will be made to maximize new resources? Also, please summarize any legislation needed in conjunction with this incremental

budget change request. [*Cabinet agencies must coordinate all legislation through the Governor's general counsel.*]

If this budget increase request is approved, the funding will be utilized generally to support the increased need for materials, equipment use and rental, and labor costs. Some or all of the funding may also be used to pay for increased procurement contracts to accomplish some activities. The region-wide maintenance performance will not be diminished.

7. What are the anticipated results or outcomes of how the new funding will be utilized? What measure(s), including quality, throughput, and costs, will be used to track the change over time? Is data currently available to support these measures?

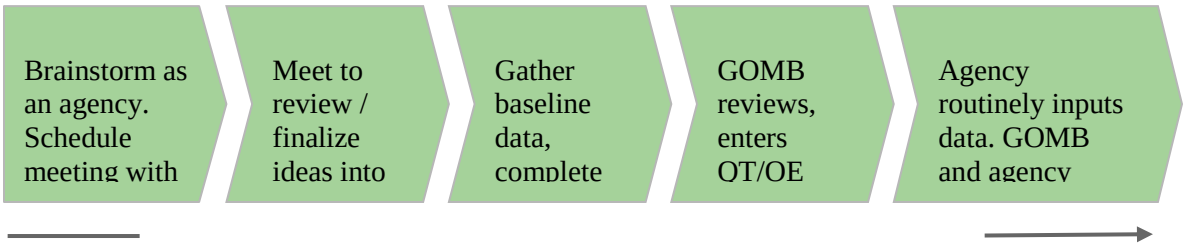
If this request is funded, the performance on Utah roads will be maintained and maintenance resources will not be overtaxed. The increased funding will allow for the purchase and/or use of the additional materials, labor, equipment, and procurement contract resources needed to maintain levels of service at existing levels. For the measures for quality, throughput, and costs can be seen on the QT/OE form.

8. What are potential negative effects if the funding is not received?

New pavements, safety features, bridges, and roadside appurtenances will require service, and existing roads will continue to require maintenance. If the proposed maintenance budget is not funded, maintenance crews will have to spread existing work hours, equipment, and funding to cover more lane-miles, resulting in decreased service levels. Recovering these roads and features after they have experienced decreased service levels would be more costly than funding the preventative maintenance as proposed.

QT/OE FORM

You'll work with GOMB throughout this process to generate a **QT/OE** metric for your system:



Agency: *Utah Department of Transportation*
Division / Sub-Division: *Maintenance planning*
System / Sub-System: *State roadway system*
Goal: *Continue to preserve our state roadway system for the traveling public.*
Measure Reporting Interval: *Fiscal annual*
Measure Contact: *Kendall Draney, Kdraney@utah.gov*

Throughput Definition (#): *The Total lane miles that UDOT owns and maintains*
How does this align with the system goal? *This is the total amount of lane miles that is owned and maintained by the Department*
Throughput Data Source: *Mandli Collection Data*
Helpful Calculation Notes: *This number is a direct measurement of the number of surface area miles as measured by the Mandli Data collection efforts. This measurement resides with the Central Materials – Pavement Management Division*

Quality Definition (%): (Qi/QA) = (*The ideal number of FTE's that it takes to maintain a Surface area mile) this number is then divided by the Surface area miles per actual number of FTEs.*
How does this align with the system goal? *Equates to the ideal number of FTE's that it takes to maintain the system in a state of good repair.*
Quality Data Source: *UDOT surface area per FTE spreadsheet*
Helpful Calculation Notes: *Takes each sheds average lane miles per FTE and averages that number for a statewide calculation.*

Operating Expenses ($): UDOT Region Maintenance funding
OE Data Source: *Operations Maintenance System Expenses*
Does the OE correspond with an appropriation code? *Yes, XDC* **Pass through funds?** *No*

Baseline Period: (one year preferable) *July 2018 - June 2019*
Total Baseline Throughput: 24,497 **Quality: (***40/48*) = 83.3% **OE:** *$126,956,710 / year*

Provide a spreadsheet to GOMB with the OE baseline data and calculations.