

Matanuska-Susitna Borough  
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September 29, 2021

# ROAD MAINTENANCE

## SERVICES AND COST ANALYSIS

*How does the Borough provide road maintenance services and is there a more cost effective method?*

# ROAD SERVICE CONTRACTS ANALYSIS

## BACKGROUND

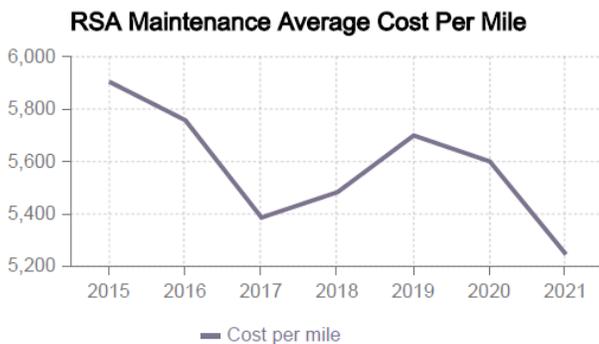
The Matanuska-Susitna Borough (MSB) awards road service contracts in five-year increments with one contract for each of the 16 Road Service Areas (RSAs). The five-year contract term is intended to provide some stability for contractors who require capital financing to procure equipment. The costs of the contract are evaluated annually for a cost-of-living adjustment which includes changes to the cost of fuel.

The intent of these contracts is to provide safe, courteous, competent year-round road maintenance services. The contracts are structured as a fixed, firm price on a cost-per-mile basis. During the Assembly strategic planning special meeting on February 20, 2021, the Assembly discussed road maintenance costs and there was interest in analyzing the cost of road maintenance and potentially exploring a time and materials structure in lieu of a cost-per-mile structure. A more detailed discussion on the merits of both structures is addressed later in the report.

MSB oversees all 16 RSA contracts with three road maintenance superintendents. These superintendents work in the Public Works Department and have road maintenance and construction backgrounds. These individuals serve as a liaison with the RSA Boards, address community concerns and complaints, and ensure contract compliance.

The MSB average cost per mile for RSA maintenance contracts for fiscal year 2021 was \$5,249, down slightly from \$5,603 the previous year.

## ROAD COST PER MILE



Average decrease of 2% in contract cost per mile between 2015 and 2021

Over \$8 million expended annually for road maintenance

# ROAD SERVICE CONTRACTS ANALYSIS

## CONTRACT COMPARISON

The following table depicts the key differences between a cost-per-hour and cost-per-mile construct. Key differences include who bears the risk and what type of oversight and monitoring that are required. In a cost-per-mile construct, the contract is a fixed, firm price regardless of the amount of maintenance required whereas the total contract cost in a cost-per-hour contract would vary based on the amount of work required (e.g. heavier snowfall year would cost more than a lighter year).

<b>TIME AND MATERIALS (COST-PER-HOUR)</b>	<b>FIXED PRICE (COST-PER-MILE)</b>
Pay based on actual time and materials	Set price provides budgeting predictability
MSB calls out contractor as needed	Contractor responsible for monitoring and self-callout
Does not incentivize cost control or labor efficiency	Incentivizes efficiency
Considerably more oversight / monitoring required by owner	Requires effective monitoring to ensure contract standards are met; spot checking compliance is effective for most standards reducing oversight requirements
More risk born by owner	Risk largely owned by contractor
Pay only for what service is provided	Set rate regardless of maintenance required

The following compares MSB road maintenance contract structures with two other boroughs in Alaska. The Fairbanks North Star Borough (FNSB) currently has over 100 road service areas with RSA commissioners who are responsible for day-to-day maintenance operations. FNSB currently utilizes 426 commissioners for road/sewer/street light service areas.

The Kenai Peninsula Borough (KPB) is in the process of transitioning to an annual cost-per-mile contract similar to the model used by the MSB to include monitoring and self-dispatching. Previous KPB contracts were based on unit pricing and equipment hours. Contractor selection was based on a combination of pricing, qualifications and involved scoring equipment (age, size, driveline etc.) and past performance. The selection method was described as “cumbersome” and “convoluted” and had too

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many “human elements.” In addition to looking for a more effective and competitive contract delivery method, this transition was done in an effort to gain efficiency and cost control.

Data from KPB contracts were obtained for the three initial service areas bid this year under an annual cost-per-mile construct. These contracts were previously bid as time and material contracts and were chosen by KPB based on expiration dates of previous agreements. Throughout the initial year of these agreements, any needed changes will be made for the next round of solicitations (12 areas to be bid in 2022).

## Bid results:

E1 Region (Cooper Landing area) 5.164 miles	\$12,082 per mile
E3 Region (North Seward and Lowell Point) 31.659 miles	\$11,660 per mile
W3 Region (Kasilof) 20.039 miles	\$4,192 per mile

The newly reconfigured contracts, which now include contractor monitoring as well as dispatch, are a slight reduction from FY 2021 costs for all three areas, although these reductions may not be related to the contract type. It is important to note that in addition to the new monitoring and dispatch services, the new contract structure may allow for a reduction in staff time needed to monitor and call out the contractor, and provide cost certainty and more reliable budgeting.

	<u>FY2020</u>	<u>FY2021*</u>	<u>New Contract</u>
E1	\$38,866	\$67,247	\$62,400
E3	\$212,406	\$371,619	\$369,133
W3	\$104,864	\$93,533	\$84,000

FY2021 costs represent 11 month reporting, June numbers are not yet reported.

NOTE: Regions E1 and E3 are heavy snow regions with very “disconnected” roads, adding to the cost of maintenance. Region W3 is more connected with lower annual snow volume. Road miles in these service areas are much smaller than most RSAs in MSB which also contributes to higher per-mile cost.

# ROAD SERVICE CONTRACTS ANALYSIS

## CONTRACT OVERSIGHT/INSPECTION

The total annual cost for road maintenance includes the maintenance contract costs discussed above as well as road service administration. Road service administration includes the following items: 1) oversight/inspection for road maintenance superintendents; 2) allocation across all RSAs for road crew support for signage, thawing, and pothole repairs on pavement; and 3) the administrative overhead shared across all RSAs.

For fiscal year 2022, the average budgeted cost for road service administration is \$2,887 per mile. This cost per mile would be added to the RSA maintenance contract cost for each RSA to determine the total annual cost for road maintenance.

As previously discussed, MSB oversees all 16 RSA contracts with three road maintenance superintendents. These individuals serve as a liaison with the RSA Boards, address community concerns and complaints, and ensure contract compliance. The costs for these personnel are shared across RSAs.

The KPB generally utilizes one full-time inspector/superintendent for each unit within their road service areas. This requires 28 personnel to provide contract oversight. This equates to one full-time employee, on average, per 23 road miles. If MSB were to use a metric of one superintendent per 100 road miles that would require a total of 11 full-time employees or eight additional full-time employees above current staffing.

The average cost for an MSB full-time road maintenance superintendent, including wages and benefits, is approximately \$150,000 annually, not including overtime. Eight additional employees would add \$1,200,000 annually which would bring the cost of road service administration to approximately \$3,953 per mile.

As KPB transitions from a time and material contract to a fixed price contract, it is reducing contract costs only slightly. However, the resulting reduction in staffing needed to oversee the fixed fee contract may produce significant savings. If MSB transitioned to time and material contracts, we should expect increases in staff costs.

# ROAD SERVICE CONTRACTS ANALYSIS

## SCOPE COMPARISON

<b>Matanuska-Susitna Borough</b>	<b>Kenai Peninsula Borough</b>	<b>Fairbanks North Star Borough</b>
<b>Duration</b> 5 years	3 years with up to two 1-year renewals, for a total of 5 years	1 year with up to four 1-year renewals, for a total of 5 years
<b>Bid Type</b> Per-mile price Bid price adjusted annually (around 1 November) for inflation	Per-mile price Bid price adjusted annually (around 1 March) for inflation	Per-item, per mile or hour, price
<b>Response</b> Respond without callout	Respond without callout	Callout-based
<b>Responsibilities</b> Summer maintenance <ul style="list-style-type: none"> <li>• Gravel roads</li> <li>• Paved roads</li> <li>• Vegetation control</li> <li>• Drainage</li> </ul> Freeze-Up Winter maintenance (level 1) <ul style="list-style-type: none"> <li>• Gravel roads</li> <li>• Paved roads</li> <li>• Snow removal</li> <li>• Drifting</li> <li>• Icing Conditions</li> </ul> Break-Up Miscellaneous	Summer maintenance <ul style="list-style-type: none"> <li>• Gravel roads</li> <li>• Paved roads</li> <li>• Drainage</li> </ul> Freeze-Up Winter maintenance <ul style="list-style-type: none"> <li>• Gravel roads</li> <li>• Paved roads</li> <li>• Snow removal</li> <li>• Icing conditions</li> </ul> Break-Up Miscellaneous	Clearing & grubbing Excavation & embankment Aggregate base & surface course Reconditioning Subbase Asphalt pavement repair Culvert & storm drains Ditch lining Sign installation Geotextile Snow removal Sanding of roadways Street sweeping Aggregate surface maintenance Drainage system maintenance Roadway vegetation maintenance

The table below illustrates the breakdown of key services within MSB and how each service is provided to RSAs. MSB maintains a road crew with thawing equipment, signage and pavement repair equipment which is leveraged to provide services to all RSAs. This is done for efficiency where each RSA contractor is not required to

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maintain additional specialized equipment (e.g. steam truck, signage shop, infrared asphalt repair equipment, etc.). Funding for the full-time road crew is apportioned between all RSAs based on the percentage of total road miles maintained and capital funds allocated each year. RSAs pay only for actual hours worked within that RSA for on-call temporary road crew members.

<b>Contractor</b>	<b>Services</b>	<b>Borough</b>
*	Monitor conditions & respond	
	Address complaints	*
*	Submit monthly reports	
	Pavement potholes	*
*	Gravel potholes	
	Signage	*
*	Crackseal (Borough-wide contractor)	
*	Ditching	
*	Grading	
*	Dust control	
*	Sand & chip	
*	Plowing	
	Thawing	*

When maintenance is required outside the scope of the base contract, MSB may solicit quotes from the RSA contractor. This work may be sole sourced to the RSA contractor if the contractor is performing well; is caught up on contract maintenance; and the amount does not exceed \$15,000. This typically includes the following type of work: drainage upgrades, culvert installation and repair, importing surfacing material, ditch reclamation or maintenance, site distance clearing above contract requirements, repair of road failures, asphalt overlays, surface and subbase modification using a crusher, water and compact gravel roads using a Borough owned roller, improve road width and shouldering, snow hauling or blower operations, emergency repairs during flooding and earthquakes, and other road maintenance operations not included in the contract.

# CONCLUSION

## CONTRACT STRUCTURE

The existing fixed price contract structure largely transfers risk to the contractor and as a firm price provides predictability in what remaining funding is available in an RSA for capital improvements. In a time and materials structure, the total cost would not be determined until after work is completed.

MSB currently provides for three road maintenance superintendents to oversee RSA contracts. In a time and materials structure, MSB would be responsible for calling out contractors from 16 RSAs on a daily basis and for increased monitoring and response. This will entail hiring additional staff members to properly administer these contracts and the geographic separation of the Borough makes it significantly more challenging than administering this type of contract as it would be within a small municipality or geographic area.

## AREAS FOR IMPROVEMENT

As with any system, there is room for improvement. MSB upgrades and improves the RSA maintenance contract each time it is bid out. Improvements often include increases in the level of service provided, addition or clarification of standards and language adjustments to facilitate enforcement of the standards. Staff have identified a couple of areas for improvement in future contracts:

1. **Start-up Inventories.** The start-up inventories section of the contract is poorly written and over stated in the current version. Most contractors discuss the exact expectations with the Superintendent before executing so they do not waste time performing unnecessary tasks. However, the way this section is currently written creates some confusion over what exactly is required and why. The next version of this contract will clarify this section and limit it to only those tasks that are necessary and prudent. For example, the requirement to check culverts for existing damage is key to protecting MSB and a new contractor from disputes over repair costs and will be retained. Requirements to catalogue road widths are neither necessary nor a prudent expenditure of funds because MSB already knows where the road width is inadequate.
2. **Roadway Traction.** The section of the contract on roadway traction is difficult to enforce and encourages excessive use of traction material because the

# CONCLUSION

requirement to maintain adequate traction is not specific and measurable. In previous years, equipment to measure traction was expensive and reserved for use on airport runways. However, advances in computing and Global Positioning Systems (GPS) have made precise measurement of roadway traction possible at a relatively low cost. MSB's Operations and Maintenance Division has equipment designed to measure actual road conditions including traction and is developing new precise traction standards to be included in the next version of the contract.

## PILOT PROGRAM

If the Assembly would like to further explore a time and materials contract structure, administration is requesting an Assembly member sponsor legislation to direct the Manager to establish a pilot program in one RSA preferably within the requesting Assembly member's District. Staff would then work to evaluate the viability of this contract structure on a larger scale. The rationale for this approach is due to the staff time required to prepare and socialize this change with various stakeholders and the additional staff oversight that will be required to administer a time and materials contract.