

State of Alaska Telecommunication System Deferred Maintenance

FY2010 Request: \$3,000,000
Reference No: 49387

AP/AL: Allocation **Project Type:** Deferred Maintenance
Category: Development
Location: Statewide **Contact:** Eric Swanson
House District: Statewide (HD 1-40) **Contact Phone:** (907)465-5655
Estimated Project Dates: 04/19/2010 - 06/30/2012
Appropriation: Statewide Deferred Maintenance Projects

Brief Summary and Statement of Need:

This request has been amended to adjust the prioritized list of projects. Enterprise Technology Services (ETS) maintains the State of Alaska Telecommunications System (SATS) which is a network of microwave and 2-way telecommunication sites throughout the state which supports day-to-day operations of state agencies and emergency responders state wide. Communication operations supported by SATS include telephone, computer wide area networks (WAN), 2-way radio, paging, video conferencing, Alaska rural communication system, and others. The infrastructure is in need of extensive maintenance and repair work.

| Funding: | <u>FY2010</u> | <u>FY2011</u> | <u>FY2012</u> | <u>FY2013</u> | <u>FY2014</u> | <u>FY2015</u> | <u>Total</u> |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
| Gen Fund | \$3,000,000 | | | | | | \$3,000,000 |
| Total: | \$3,000,000 | \$0 | \$0 | \$0 | \$0 | \$0 | \$3,000,000 |

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
| <input type="checkbox"/> State Match Required | <input type="checkbox"/> One-Time Project | <input type="checkbox"/> Phased - new | <input checked="" type="checkbox"/> Phased - underway | <input type="checkbox"/> On-Going |
| 0% = Minimum State Match % Required | | <input type="checkbox"/> Amendment | <input type="checkbox"/> Mental Health Bill | |

Operating & Maintenance Costs:

| | <u>Amount</u> | <u>Staff</u> |
|----------------------|---------------|--------------|
| Project Development: | 0 | 0 |
| Ongoing Operating: | 0 | 0 |
| One-Time Startup: | 0 | 0 |
| Totals: | 0 | 0 |

Additional Information / Prior Funding History:

\$1.5 million was appropriated for SATS maintenance in FY2006. \$2.7 million for SATS deferred maintenance was appropriated in FY2003.

Project Description/Justification:

Enterprise Technology Services (ETS) maintains the State of Alaska Telecommunications System (SATS) which is a network of microwave and 2-way telecommunication sites through out the state which supports day-to-day operations of state agencies and emergency responders state wide. Communication operations supported by SATS include: telephone, computer wide area networks (WAN), 2-way radio, paging, video conferencing, Alaska rural communication system, and others.

The daily reliability of the system, after years of deferred maintenance, has reached a point of regular and sustained periods of inoperability. The SATS network has degenerated into a "break and fix" state of reliability. The SATS system is at constant risk of failure and requires an immediate focus on deferred critical system upgrades and repairs. In addition, the SATS system has equipment that by FCC mandates must be upgraded within the next two years.

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If the system were to experience the kind of failure that is now very possible, given its current condition, telephone and e-mail communication would be impacted and could very likely fail.

Examples of known critical deferred maintenance include:

1. Communication shelter repair (leaks, doors that don't close, ventilation replacement) and shelter replacement.
2. Battery plant replacement (most sites operate on remote power).
3. Generator repair or replacement (generators well beyond useful life).
4. Tower repair (guy wires, foundation erosion, tower sections) and replacement.
5. Microwave dish repair and replacement to allow proper and sustained alignment.
6. Antenna repair and replacement.
7. Replace or install site alarms to permit timely emergency maintenance deployment prior to site failure and outages.
8. Electrical cable repair and replacement.
9. FCC mandated 2 GHz to 6 GHz upgrades on 15 of 29 affected sites.

Specific projects planned to be funded with this request are:

| SATS Critical Deferred Maintenance Projects | | | | | | | | |
|---|----------------------------------|----------------------|-----------------------|-----------------|--------------------------|--|------------------------------|-------------------|
| Dept. Priority | Project Title | Project Cost (\$000) | Running Total (\$000) | GF Cost (\$000) | GF Running Total (\$000) | Project Description | Location | Election District |
| 1 | Beaver Creek - (Doyon's Granite) | 132,280 | 132,280 | 132,280 | 132,280 | *FCC mandated upgrades 2GHz to 6GHz; relocate site from temporary to new location to connect to commercial power and other repairs as necessary. | Alaska Hwy, near border | 6 |
| 2 | Black Rapids | 100,740 | 233,020 | 100,740 | 233,020 | Replace tower and repair microwave and connect to commercial power and other repairs as necessary. | Richards on Hwy, N of Paxson | 12 |
| 3 | Dot Lake | 20,000 | 253,020 | 20,000 | 253,020 | Replace aging shelter and generator and construct external grounding and other repairs as necessary. | Alaska Hwy, N of Tok | 6 |
| 4 | Ernestine | 195,000 | 448,020 | 195,000 | 448,020 | Install new power transformer for site operations; *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Richards on Hwy, N of Valdez | 12 |
| 5 | Miami Lake | 42,120 | 490,140 | 42,120 | 490,140 | Replace microwave | Parks | 15 |

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| | | | | | | equipment and other repairs as necessary. | Hwy, N of Talkeetna | |
| 6 | Tsina | 118,508 | 608,648 | 118,508 | 608,648 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Richards on Hwy, N of Valdez | 6 |
| 7 | Trims Passive | 80,000 | 688,648 | 80,000 | 688,648 | Install passive reflector at high site for critical coverage and connectivity along Richardson Highway and other repairs as necessary. | Richards on Hwy, N of Paxson | 12 |
| 8 | Divide | 125,280 | 813,928 | 125,280 | 813,928 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Richards on Hwy, N of Valdez | 12 |
| 9 | Hurricane | 216,000 | 1,029,928 | 216,000 | 1,029,928 | Upgrade microwave equipment and move to new tower which has been constructed (by ARRC/ATT Mobility) and other repairs as necessary. | Parks Hwy, N of Talkeetna | 15 |
| 10 | Heney Range | 217,944 | 1,247,872 | 217,944 | 1,247,872 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Cordova | 5 |
| 11 | Money Knob | 134,136 | 1,382,008 | 134,136 | 1,382,008 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Dalton Hwy, N of Fairbanks | 6 |
| 12 | Pillar Mtn | 125,280 | 1,507,288 | 125,280 | 1,507,288 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Kodiak | 36 |
| 13 | Ptarmigan | 200,000 | 1,707,288 | 200,000 | 1,707,288 | Replace old shelter, *FCC Upgrades (2 to 6GHz) and other repairs as necessary. | Richards on Hwy, N of Valdez | 12 |
| 14 | Seldovia | 118,840 | 1,826,128 | 118,840 | 1,826,128 | *FCC Upgrades (2GHz to 6GHz) and other repairs as necessary. | S of Homer | 35 |
| 15 | Seven Mile Camp DOT | 134,052 | 1,960,180 | 134,052 | 1,960,180 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Dalton Hwy, N of Fairbanks | 6 |
| 16 | Shuyak Island | 250,000 | 2,210,180 | 250,000 | 2,210,180 | *FCC Mandate Upgrades (2GHz to 6GHz); repairs | Kodiak-Cook | 36 |

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|----------------|-----------------------------|----------------------|-----------------------|-----------------|--------------------------|---|---|-------------------|
| 17 | Kitoi | 100,000 | 2,310,180 | 100,000 | 2,310,180 | and other repairs as necessary. Replace old solar panels; *FCC Upgrades (2 to 6GHz) and other repairs as necessary. | Inlet shipping lanes Kodiak-Cook Inlet shipping lanes | 36 |
| 18 | Girdwood | 46,040 | 2,356,220 | 46,040 | 2,356,220 | Construct platform decking for access safety; replace slack guy wires and anchors for tower and other repairs as necessary. | Seward Hwy, S of Anchorage | 32 |
| 19 | Donnelly Dome | 63,720 | 2,419,940 | 63,720 | 2,419,940 | Replace tower, shelter, microwave and batteries at aging site and other repairs as necessary. | Richards on Hwy, S of Delta | 6 |
| 20 | Cathedral Rapids | 55,620 | 2,475,560 | 55,620 | 2,475,560 | Replace aging generator and install security fencing around site and other repairs as necessary. | Alaska Hwy, N of Tok | 6 |
| 21 | Canyon Creek | 5,400 | 2,480,960 | 5,400 | 2,480,960 | Replace failing power supply and other repairs as necessary. | Alaska Hwy, S of Fairbanks | 12 |
| 22 | Kodiak Electric Assn. (KEA) | 134,156 | 2,615,116 | 134,156 | 2,615,116 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Kodiak | 36 |
| 23 | Tok | 125,280 | 2,740,396 | 125,280 | 2,740,396 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Alaska Hwy, Tok | 6 |
| 24 | Tazlina Camp DOT | 107,000 | 2,847,396 | 107,000 | 2,847,396 | Replace aging microwave to stabilize connectivity and other repairs as necessary. | Richards on Hwy, S of Glennallen | 6 |
| 25 | Tudor Tower | 92,340 | 2,939,736 | 92,340 | 2,939,736 | *FCC Mandate Upgrades (2GHz to 6GHz) and other repairs as necessary. | Anchorage | 30 |
| 26 | Harding Lake | 2,700 | 2,942,436 | 2,700 | 2,942,436 | Install sensors and safety alarms for remote operations management and other repairs as necessary. | Alaska Hwy, S of Fairbanks | 8 |
| 27 | Homer (HEA) | 21,924 | 2,964,360 | 21,924 | 2,964,360 | Site grounding, chargers and repairs. | Sterling Hwy, Homer | 35 |
| 28 | Kasilof | 19,440 | 2,983,800 | 19,440 | 2,983,800 | Install Safety Ladder Cable | Sterling | 33 |

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| 29 | Lena Point | 16,200 | 3,000,000 | 16,200 | 3,000,000 | on Tower for tower climbing safety and other repairs as necessary. Install sensors and safety alarms for remote operations management and other repairs as necessary. | Hwy, S of Soldotna Juneau, Auke Bay | 4 |
| | | 3,000,000 | | 3,000,000 | | | | |
| | | | | | | <p>*The FCC has given the 2GHz communications band to PCS (Personal Communications Services, i.e. cellular, etc.). This means that states, including Alaska, must purchase and install microwave transmission equipment capable of operating on a different frequency. The deadline for completing this work is December 31, 2011.</p> | | |