



METROPOLITAN
TRANSPORTATION
COMMISSION

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Memorandum

Agenda Item No.5

TO: Operations Committee

DATE: December 6, 2013

FR: Executive Director

W.I.: 1223

RE: Update on the Regional Transportation Management System Program

At the May 10, 2013 Operations Committee meeting, MTC and Caltrans District 4 staff provided a status report on the Transportation Management System (TMS) efforts. The TMS encompasses: (1) highway operations field equipment; (2) critical freeway and incident management functions; and (3) Transportation Management Center (TMC) staff and resources needed to actively operate and maintain the equipment and perform these management functions. Information on the Regional TMS Plan, repair status of the field equipment, and options for performance-based governance were discussed.

At the December 13 meeting, MTC and Caltrans staff will provide an update on the conditions of the Bay Area's highway operations field equipment, discuss progress made on performance-based governance, and present recommendations on near-term priority projects, as part of the Regional TMS Action Plan. As you can see from the data in the power point presentation, there has been progress in the TMS device performance but there is still plenty of room for improvement. Since our last update, staff has prepared a draft Memorandum of Understanding (MOU) that reflects agreed upon principles and objectives. We met with Caltrans District 4 and Headquarters staff, including Caltrans Director Malcolm Dougherty. At the December 13 Committee meeting, staff expects to report that we have executed an MOU with Caltrans.

Next Steps

Following execution of the MOU, both agencies will then work towards the execution of a Master Cooperative Agreement that will define the organizational structure of the TMS team, standard operating procedures, performance measures, reporting and monitoring processes, near-term and long-term shared-funding plans, and work plan priorities. The Master Cooperative Agreement with Caltrans will likely include the California Highway Patrol (CHP), to support TMS operations and maintenance commitments. Working in partnership with Caltrans and the CHP and using findings from recent TMS efforts (e.g., Regional Communications Infrastructure and Needs Assessment), we plan to finalize a list of near-term projects priorities to implement over the next two years.

Steve Heminger

SH:KC

Regional Transportation Management System Update

Operations Committee
Dec 13, 2013



Transportation Management System

Current Responsibilities:



Incident Management



Traveler information



Call box



Emergency response



Incident management teams



Freeway service patrol & bridge tow

Field Equipment



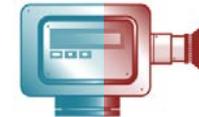
Traffic monitoring systems



Message signs



Ramp & bridge metering

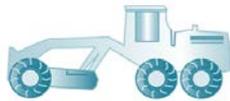


Highway & security surveillance cameras

Freeway Management



Operators/performance monitoring



Construction/roadwork



Other TMCs



Transportation management teams



Hardware & software



CHP field units

Future Needs

Goal to adopt a more "active" system management approach

- Adaptive Ramp Metering
- ICM/Smart Corridors
- Lane Management Systems
- Maintenance & Operations
- Express Lanes
- System Security/Safety

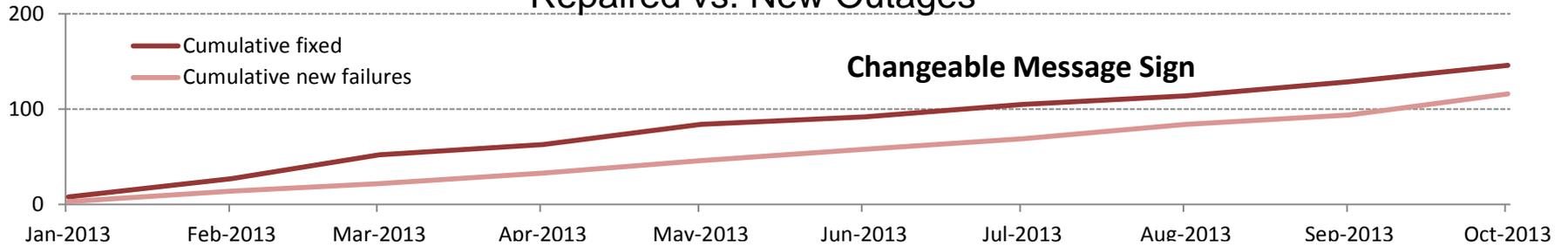
State of the Field Equipment

Priority Order of Repair Work

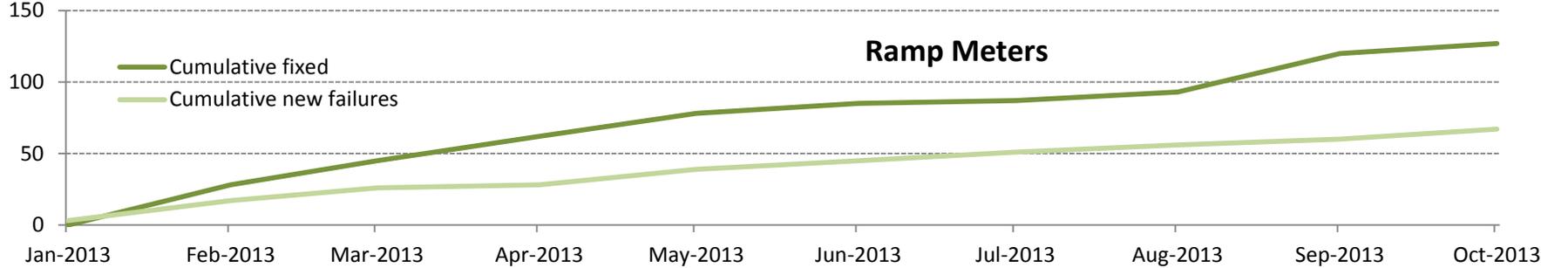
	Changeable Message Signs	Ramp Meters	Closed Circuit TV Cameras	Traffic Detection Stations
December 2012				
Number Operational	82	296	164	1,168
% Operational	64%	85%	44%	49%
November 2013				
Number Operational	125	355	212	1,519
% Operational	86%	93%	53%	61%

Field Equipment Condition

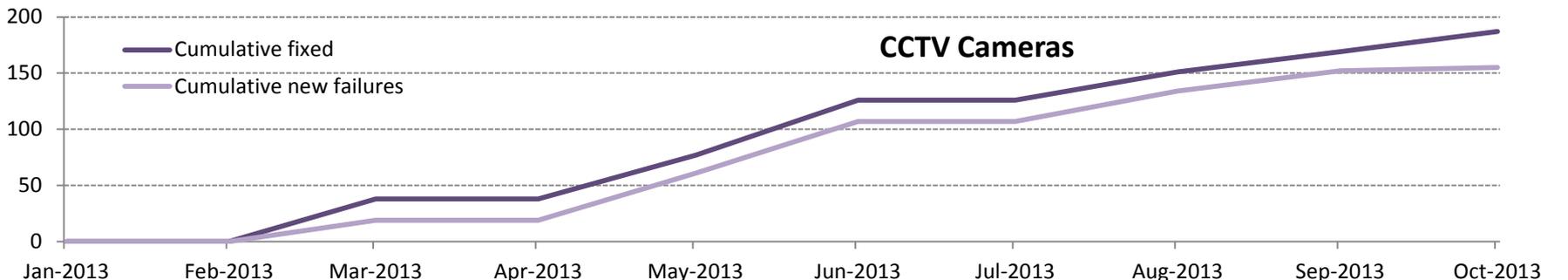
Repaired vs. New Outages



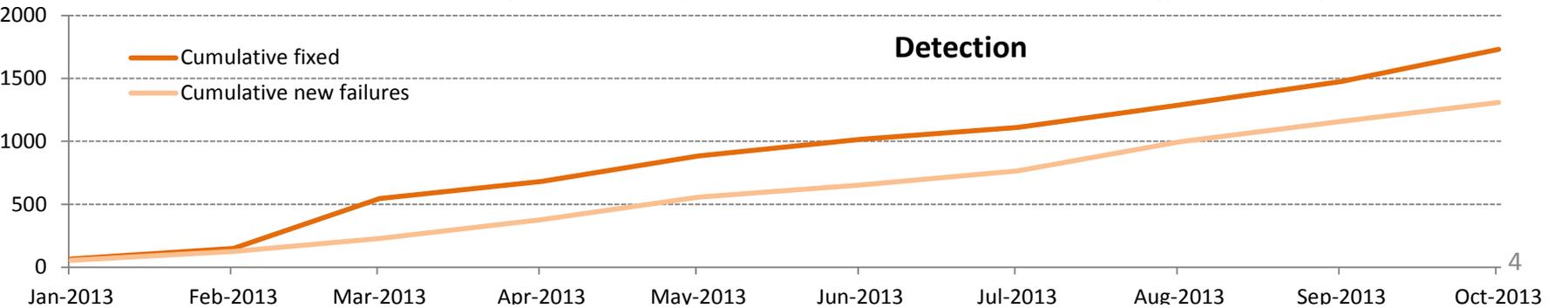
Changeable Message Sign



Ramp Meters



CCTV Cameras



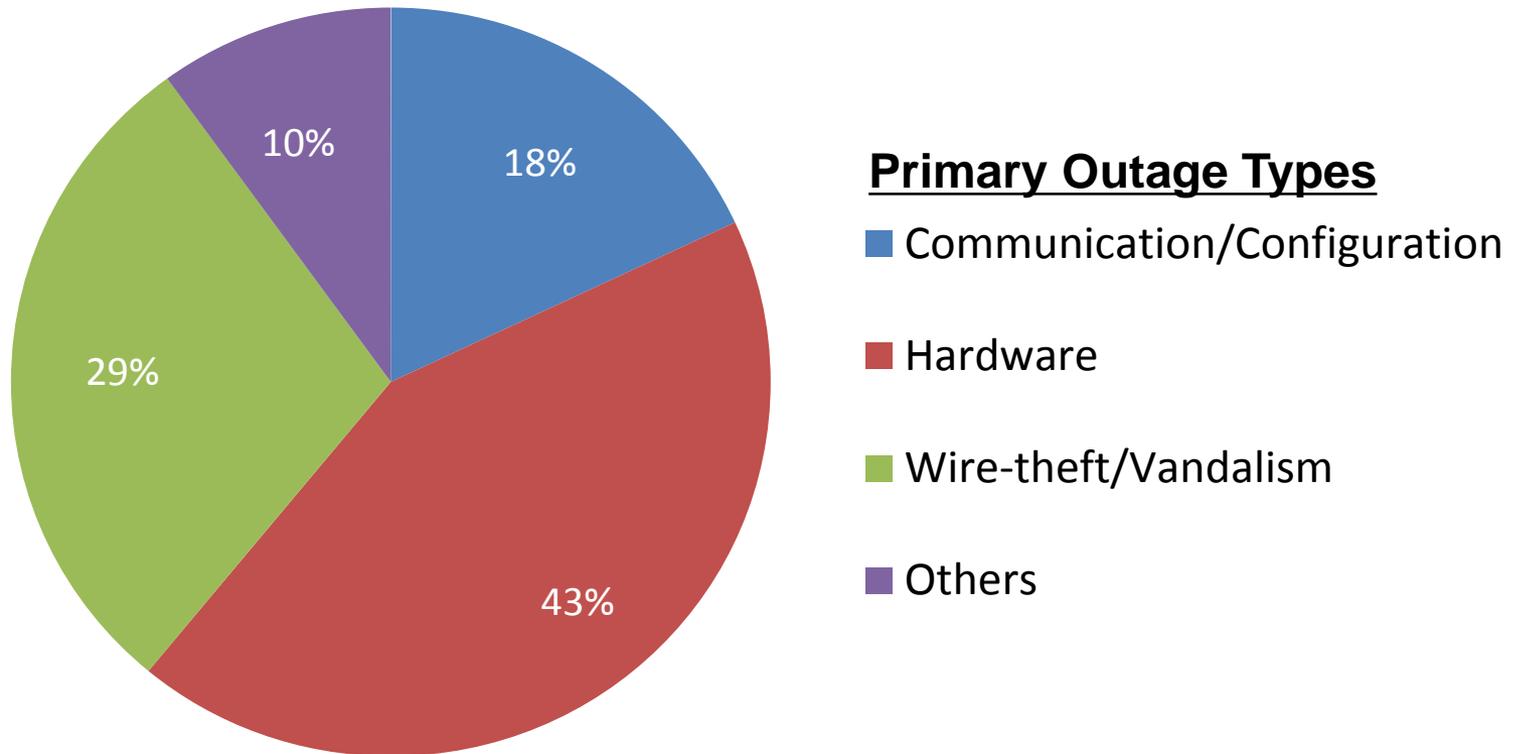
Detection

Repairs Outpace Outages

January – October 2013

TOS Element Type	Average Repairs Per Month	Average Outages Per Month
Changeable message signs	15	12
Ramp meters	13	7
Closed circuit TV cameras	19	16
Traffic Detection Stations	173	131

Field Equipment Outage Summary



Outage Type Definitions:

1. Hardware – Outage due to a failed controller, modem, cable, sign display or camera unit.
2. Communication/Configuration - Outage due to issues with service provider communication networks, configuration, or software.
3. Wire-theft/Vandalism - Location had been vandalized or had copper wire stolen.
4. Others - Outage due to various factors, e.g., equipment knockdown by vehicles, utility service issues or on-going construction activities.

TMS Governance Principles

Performance

- Define performance targets to optimize operations.
- Achieve TMS operational benefits across multiple systems and programs.

Decision Making

- Adopt a performance management approach.
- Streamline TMS decision-making and prioritization.
- Ensure accountability and transparency.
- Secure a management stake.

Resources

- Strategically manage the system within the resources available.
- Leverage regional contribution to secure funding commitment from state.

Memorandum of Understanding

- Guide ongoing operation and maintenance
- Performance based governance concept
- Joint commitment to fund – MTC's management stake
- Foundation for a Master Co-op Agreement

Regional TMS Action Plan

- Current state of system, new initiatives, gaps
- Vision and regional priorities
- Measuring TMS Performance
- Draft near-term funding proposal
- Timeline and implementation (near-term project priorities)

Draft Near-Term Priority Projects

Proposed Project	Description
Field equipment management database update, asset inventory, and failure analysis	<ul style="list-style-type: none">• Update database (and business processes) to integrate information currently stored across several different systems• Hire contractor staff to conduct asset inventory, update the database, identify equipment failure trends, and recommend solutions for future repairs
Implementation communication assessment projects	<ul style="list-style-type: none">• Evaluate initial projects (Bay Area Regional Communications Infrastructure and Needs Assessment)• Develop detailed cost estimates• Recommend and implement some projects
Detection Pilot Corridor	<ul style="list-style-type: none">• Develop a Concept of Operations for detection network that meets Caltrans' and MTC's needs• Identify appropriate mix of technology for pilot corridor
Other TMS operations and maintenance needs	<ul style="list-style-type: none">• Replace Transportation Management Center equipment (e.g., servers for closed circuit television cameras)• Maintain reserve for new priority field equipment, based on traffic monitoring and safety needs

TMS Work Plan and Schedule

TMS Components	Timeframe
Regional Communications Infrastructure Needs Assessment and Regional Detection Assessment	Completed In November
Memorandum of Understanding expected to be signed by Caltrans and MTC	December 2013
Regional TMS Action Plan (including priorities and performance metrics)	Draft in December Final in Spring 2014
Master Cooperative Agreement	January – June 2014
Ongoing efforts to identify near-term funding opportunities	Through Spring 2014
Field equipment management database update and asset inventory	2014 (start date conditioned on MOU execution)
Other TMS priority projects	2014-2015 (some projects conditioned on execution of Master Cooperative Agreement)