2023 NOCoE TSMO Trends
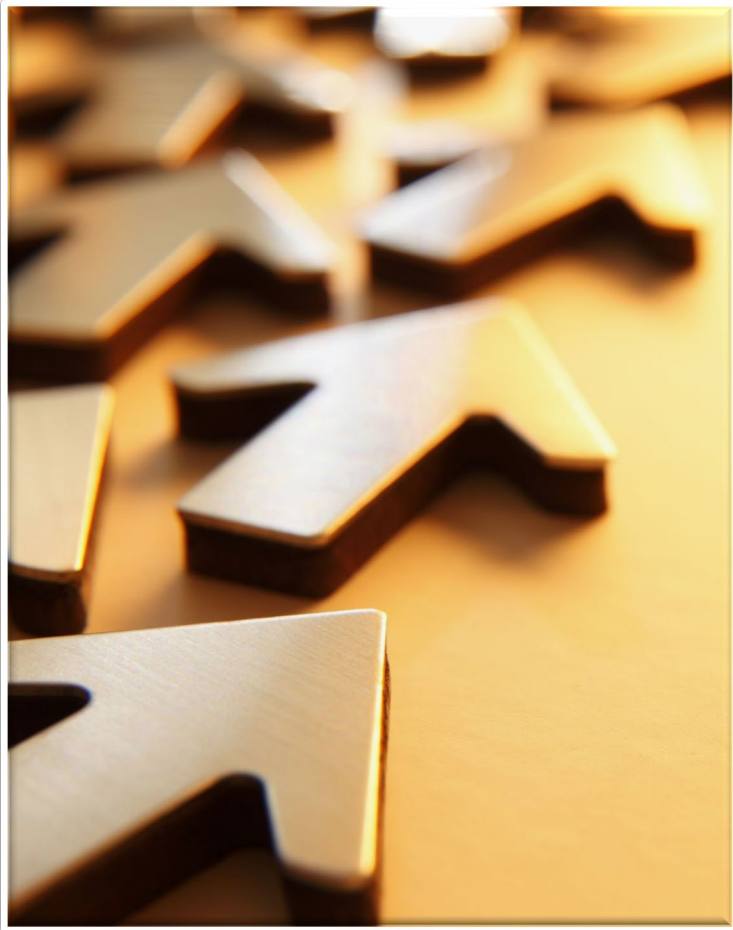
Adam Hopps | **NOCoE** | Interim Director
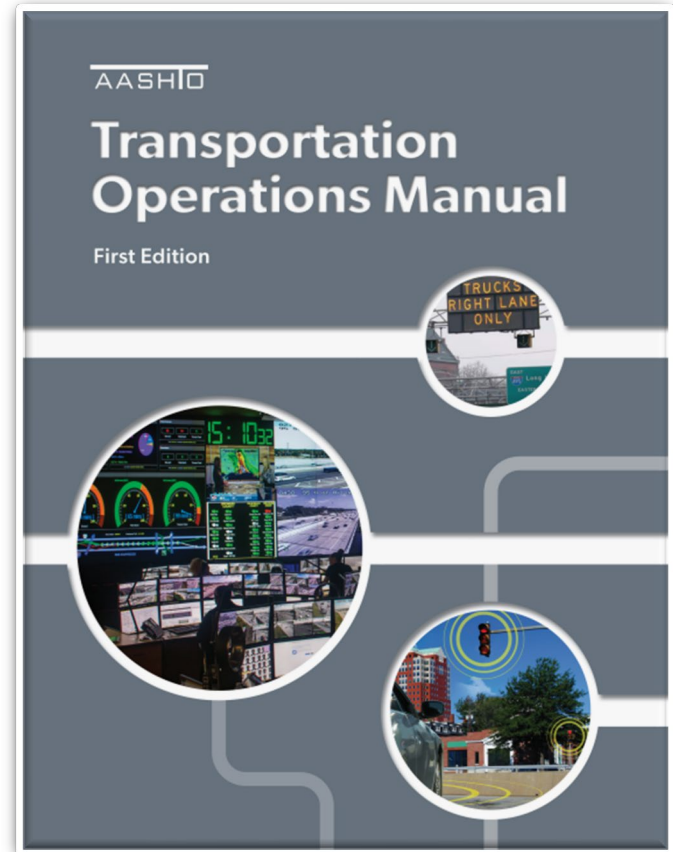Ahopps@transportationops.org
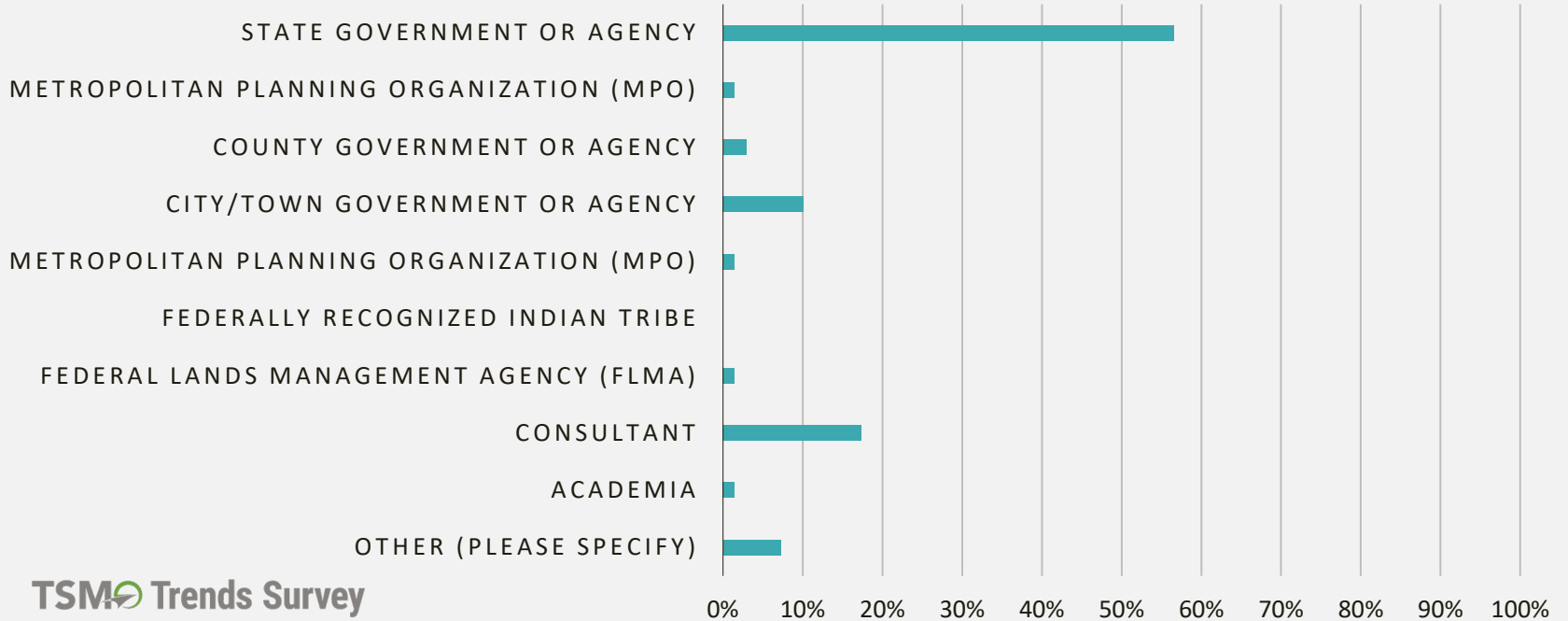
TSMO Trends Survey Goals

- Establish TSMO practice trend line
- Support advancement of Transportation Operations Manual
- Identify TSMO strategies agencies would like NOCoE to further explore in webinars, peer exchanges, case studies, etc.

TSMO Trends Survey Structure

- Part 1: Attract, develop, sustain, and expand the TSMO workforce

- Part 2: Accelerate deployment of current and emerging TSMO practices (technology and strategies)

- Part 3: Mainstream TSMO as a core function of providing transportation system solutions for all

Survey Responders

Category	Percentage
STATE GOVERNMENT OR AGENCY	~57%
METROPOLITAN PLANNING ORGANIZATION (MPO)	~1%
COUNTY GOVERNMENT OR AGENCY	~3%
CITY/TOWN GOVERNMENT OR AGENCY	~10%
METROPOLITAN PLANNING ORGANIZATION (MPO)	~1%
FEDERALLY RECOGNIZED INDIAN TRIBE	0%
FEDERAL LANDS MANAGEMENT AGENCY (FLMA)	~1%
CONSULTANT	~18%
ACADEMIA	~1%
OTHER (PLEASE SPECIFY)	~7%

TSMO Trends Survey

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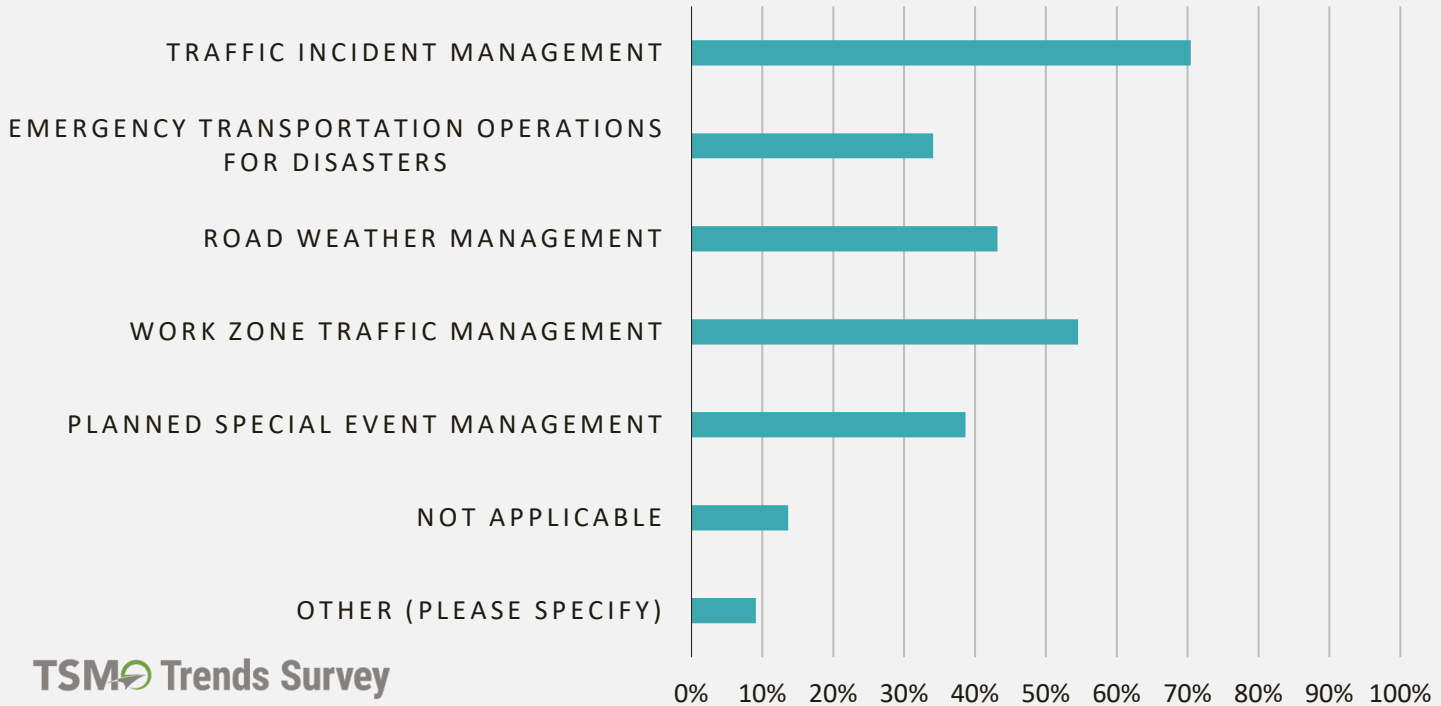National Operations Center of Excellence

Accelerate deployment of current and emerging TSMO practices (technology and strategies)

Survey Question Topics: <u>Accelerate</u> Deployment of TSMO Practices (Technology & <u>Strategies</u>)

Strategies Mapped to Transportation Operations Manual (Parts E & F)
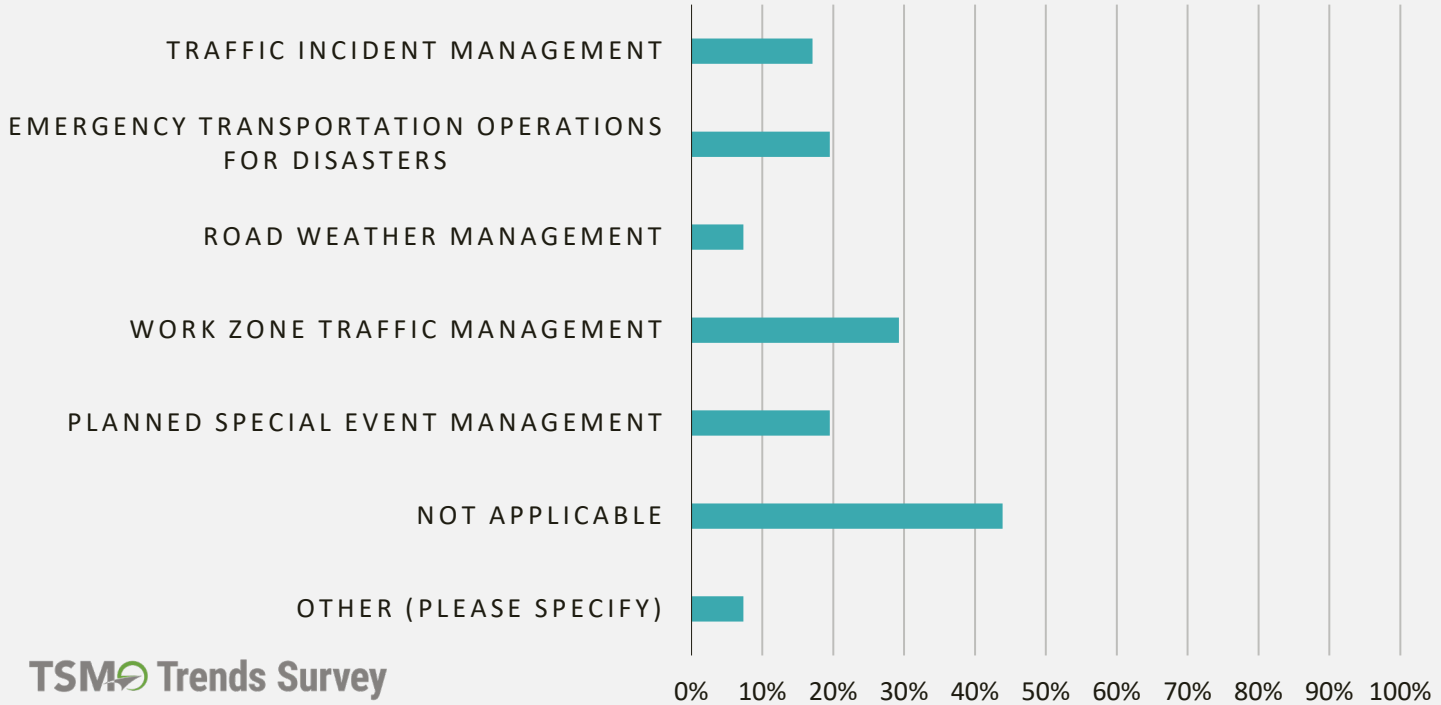
- Event Management
- Freeway Management
- Arterial Management
- Freight
- Advanced Integrated Tactics
- Active Demand & Parking Management

- Active Transportation
- Transit
- Tolling & Road Pricing
- Technology Trends
- Industry Trends
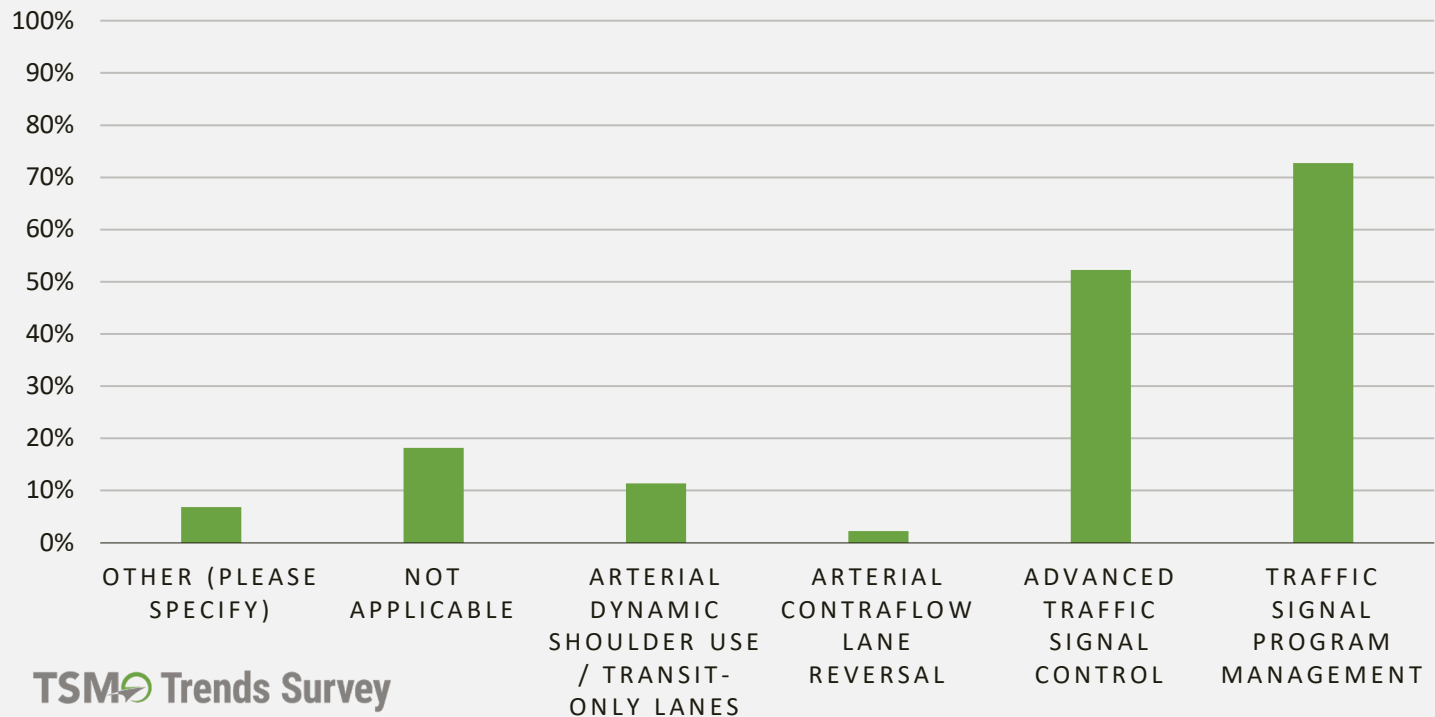
Event Management Strategies – Highest Payoff

Chart showing percentages for event management strategies:
- TRAFFIC INCIDENT MANAGEMENT — ~70%
- EMERGENCY TRANSPORTATION OPERATIONS FOR DISASTERS — ~34%
- ROAD WEATHER MANAGEMENT — ~43%
- WORK ZONE TRAFFIC MANAGEMENT — ~54%
- PLANNED SPECIAL EVENT MANAGEMENT — ~38%
- NOT APPLICABLE — ~13%
- OTHER (PLEASE SPECIFY) — ~9%

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Event Management − Most Difficult Challenges

Arterial Management - Highest Payoff

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Arterial Management – Most Difficult Challenges

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Freeway Management

TSMO strategies with the **highest pay-off** for your agency:

Strategy	Percentage
RAMP MANAGEMENT AND CONTROL	~52%
DYNAMIC JUNCTION CONTROL	~9%
CONTRAFLOW LANE REVERSAL	~16%
PART-TIME SHOULDER USE	~25%
DYNAMIC LANE USE CONTROL	~11%
DYNAMIC SPEED LIMITS OR SPEED ADVISORIES	~29%
QUEUE WARNING	~38%
NOT APPLICABLE	~27%
OTHER (PLEASE SPECIFY)	~2%

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Freeway Management

TSMO strategies that your agency has tried to deploy and encountered the **most difficult challenges**:

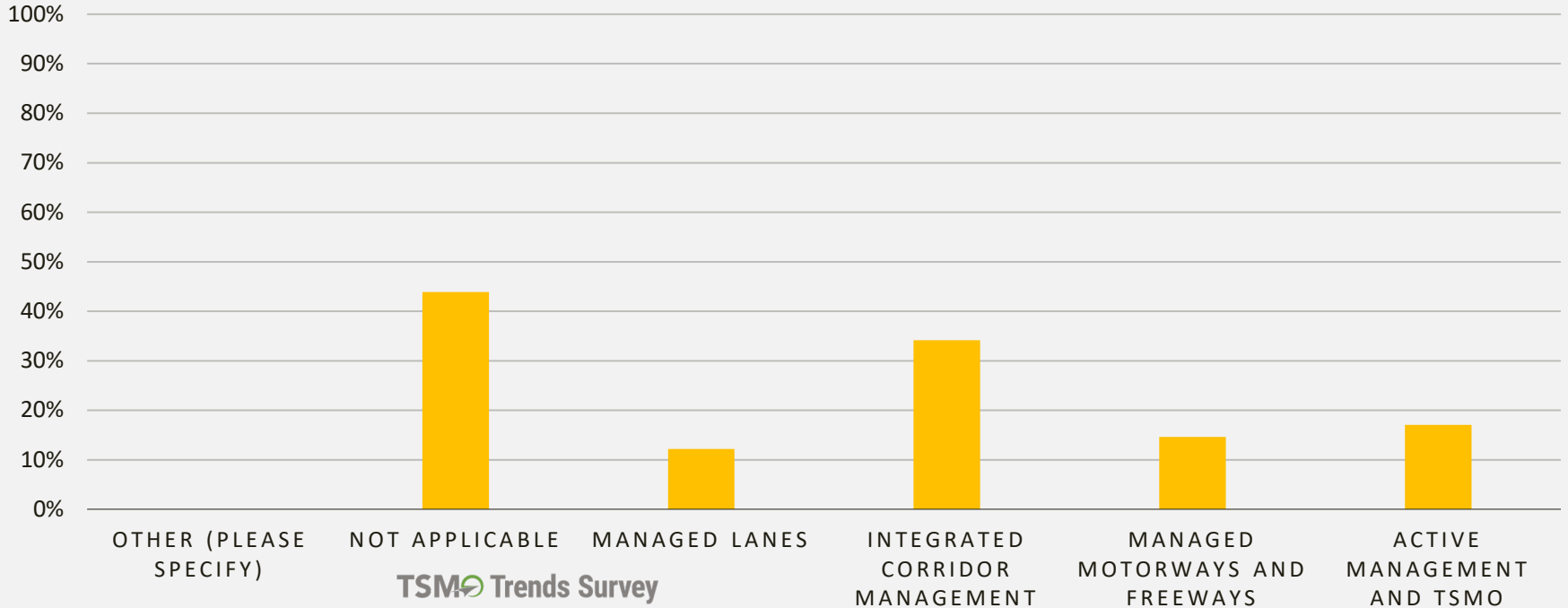| Strategy	Percentage
RAMP MANAGEMENT AND CONTROL	~12%
DYNAMIC JUNCTION CONTROL	~4%
CONTRAFLOW LANE REVERSAL	~12%
PART-TIME SHOULDER USE	~19%
DYNAMIC LANE USE CONTROL	~7%
DYNAMIC SPEED LIMITS OR SPEED ADVISORIES	~31%
QUEUE WARNING	~9%
NOT APPLICABLE	~46%
OTHER (PLEASE SPECIFY)	~2%

TSMO Trends Survey

Advanced Integrated Tactics
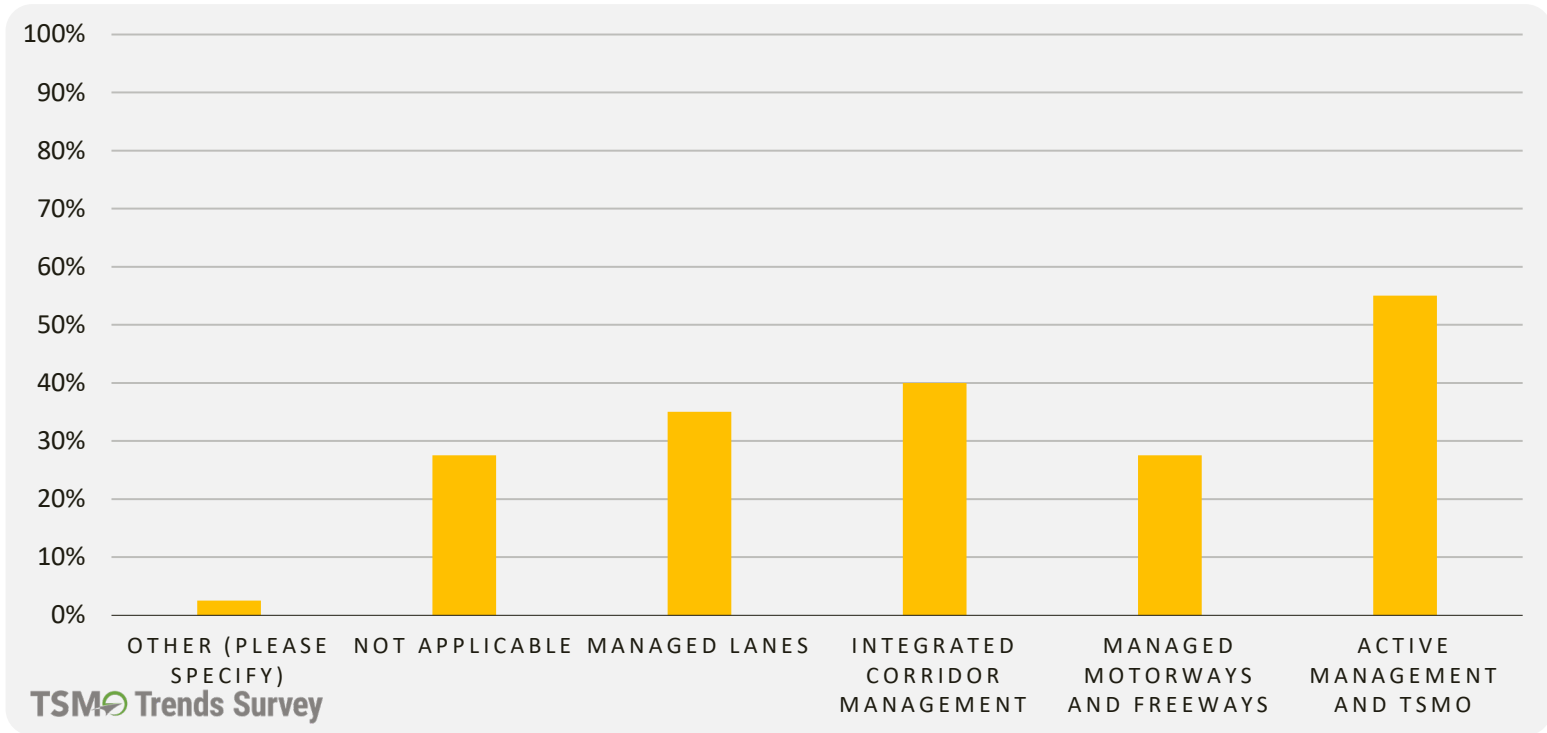
TSMO strategies with the **highest pay-off** for your agency:

Advanced Integrated Tactics
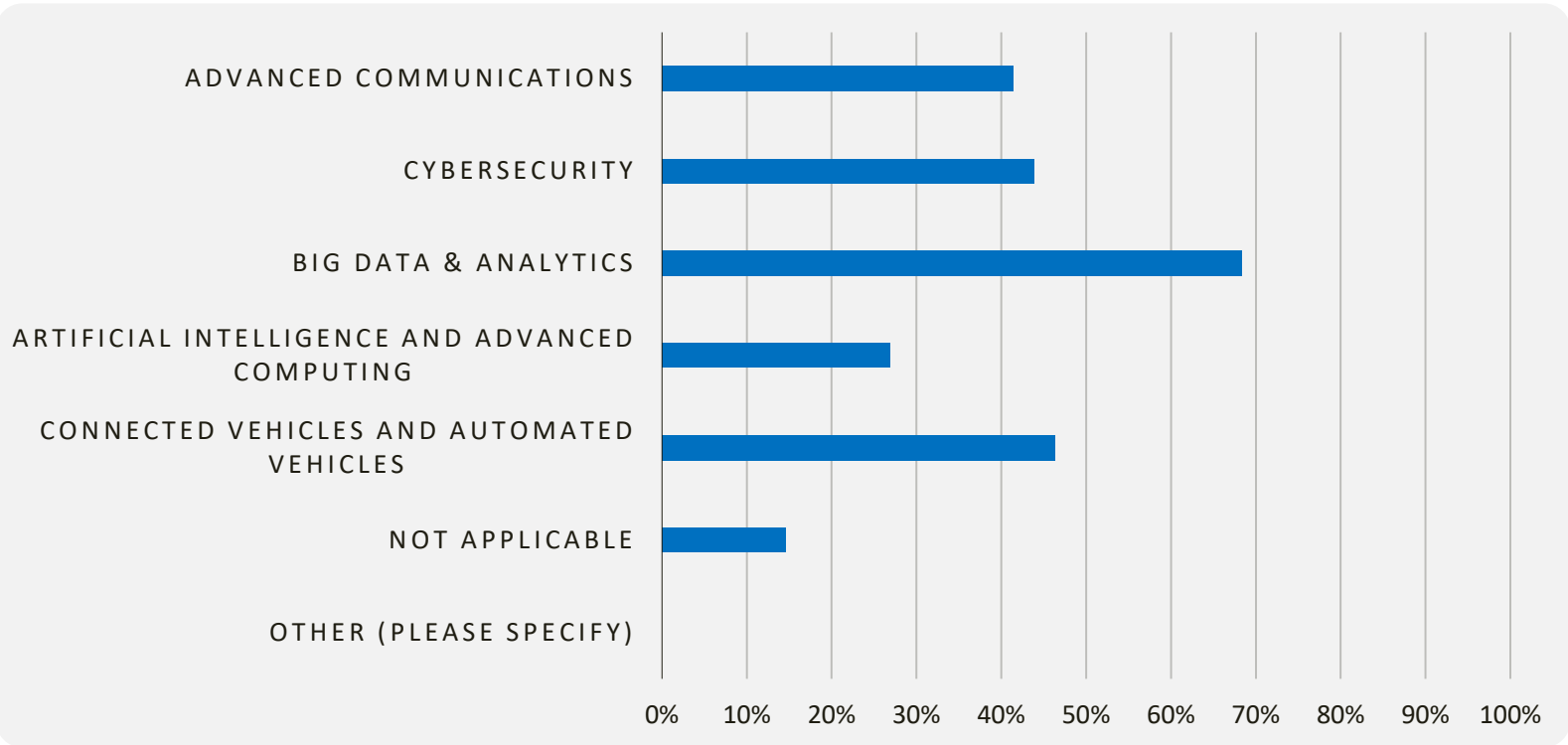
TSMO strategies that your agency has tried to deploy and encountered the **most difficult challenges**:

Technology Trends

TSMO strategies with the **highest pay-off** for your agency:

Category	Percentage
ADVANCED COMMUNICATIONS	~41%
CYBERSECURITY	~44%
BIG DATA & ANALYTICS	~68%
ARTIFICIAL INTELLIGENCE AND ADVANCED COMPUTING	~27%
CONNECTED VEHICLES AND AUTOMATED VEHICLES	~46%
NOT APPLICABLE	~15%
OTHER (PLEASE SPECIFY)	0%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

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Technology Trends

TSMO strategies that your agency has tried to deploy and encountered the **most difficult challenges**:
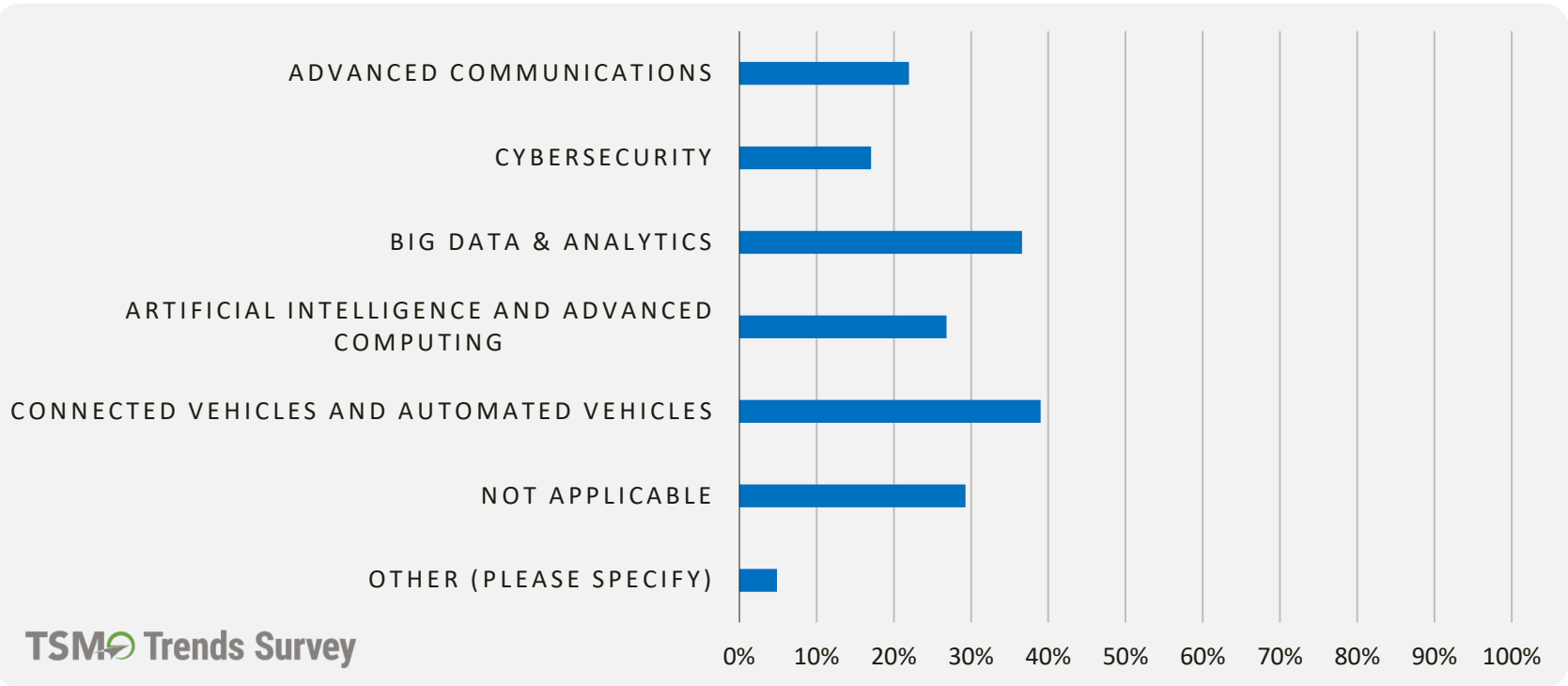
Attract, develop, sustain, and expand the TSMO workforce

Part 1: Attract, develop, sustain, and expand the TSMO workforce – Recruitment

Strengths

1. Flexibility (e.g., flexible hours, remote work): 67%
2. Work-life balance, stability, benefits: 65%
3. Strong University partnerships for co-ops/interns: 42%

Challenges

1. Salaries and pay scales: 65%
2. Finding candidate pools: 62%
3. Awareness (e.g., lack of workforce understanding of the role of TSMO): 45%

Part 1: Attract, develop, sustain, and expand the TSMO workforce – Retention

Strengths

1. Work-life balance, stability, benefits: 71%
2. Flexibility (e.g., flexible hours, remote work): 67%
3. Purpose (making a societal difference): 42%

Challenges

1. Pay rates: 80%
2. Competition: 69%
3. Retention of younger professionals: 57%

Part 1: Attract, develop, sustain, and expand the TSMO workforce – Diversity, Equity, and Inclusion

Strengths

1. DE&I is included in agency strategic planning: 58%
2. Formal hiring equity guidelines and hiring practices: 42%
3. Employee newsletter includes profiles with DE&I in mind: 35%

Challenges

1. Lack of understanding: 30%
2. Remote work can make inclusion more difficult: 22%
3. Barriers and inherent biases in hiring practice : 20%

Part 1: Attract, develop, sustain, and expand the TSMO workforce – Training

Strengths

1. Support for employees to pursue certifications: 67%
2. Operations Academy training: 60%
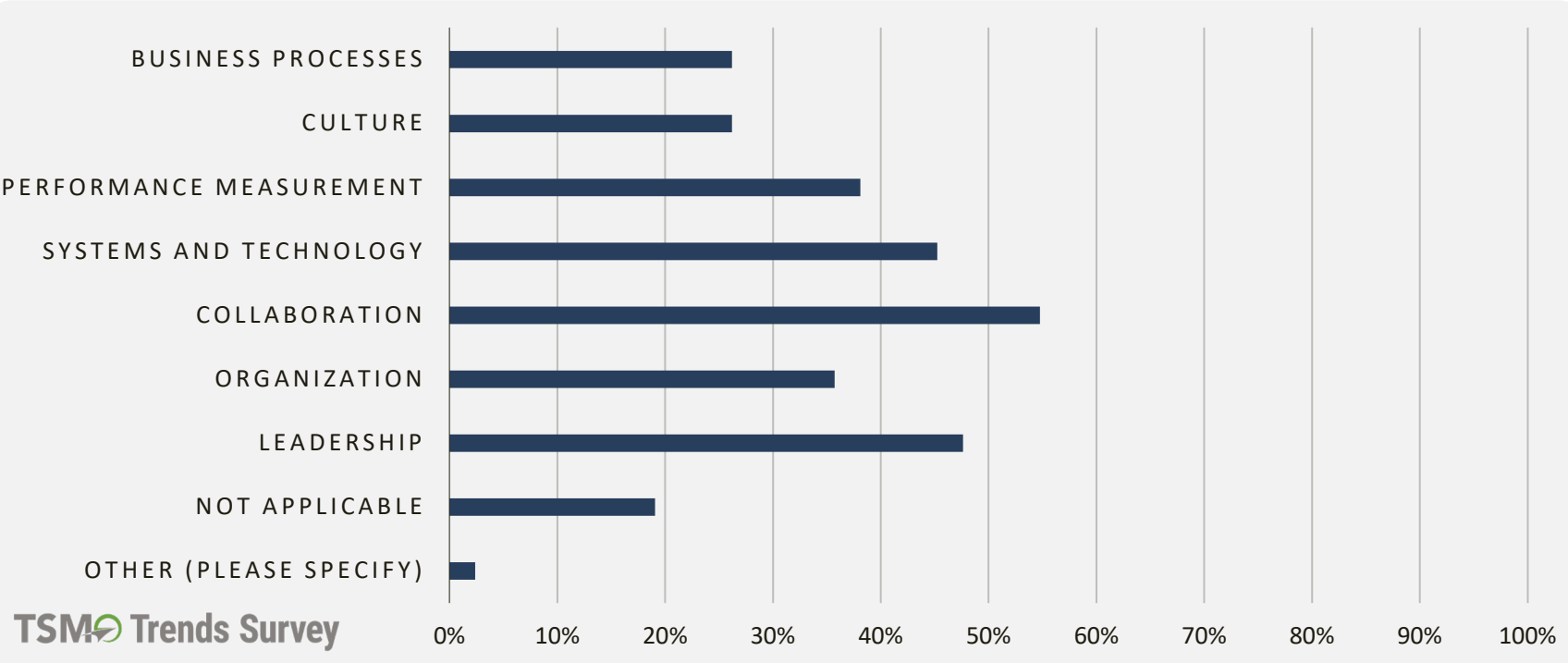3. Partnerships with universities/community colleges: 53%

Challenges

1. Need to establish career paths for all positions: 69%
2. Limited awareness of TSMO across most transportation agencies: 56%
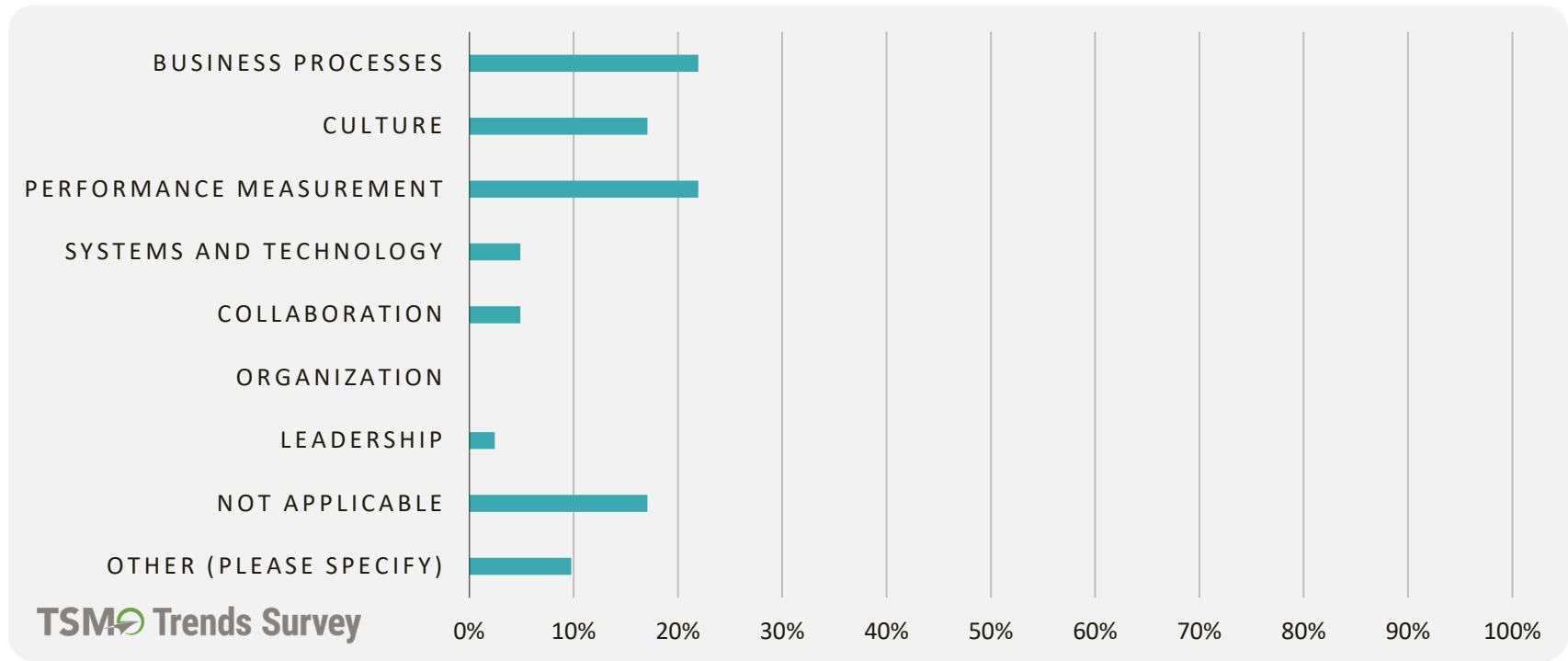3. Better understanding of tuition reimbursement programs: 22%

Mainstream TSMO as a core function of providing transportation system solutions for all

Please select the <u>areas of strength</u> for your agency regarding mainstreaming TSMO:

Bar chart showing areas of strength for agencies regarding mainstreaming TSMO:

- BUSINESS PROCESSES: ~26%
- CULTURE: ~26%
- PERFORMANCE MEASUREMENT: ~38%
- SYSTEMS AND TECHNOLOGY: ~45%
- COLLABORATION: ~54%
- ORGANIZATION: ~35%
- LEADERSHIP: ~48%
- NOT APPLICABLE: ~19%
- OTHER (PLEASE SPECIFY): ~2%

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Based on your agency's experience, please select the areas with opportunity for improvement for mainstreaming TSMO:

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