



TMC Video Recording & Archiving Best General Practices

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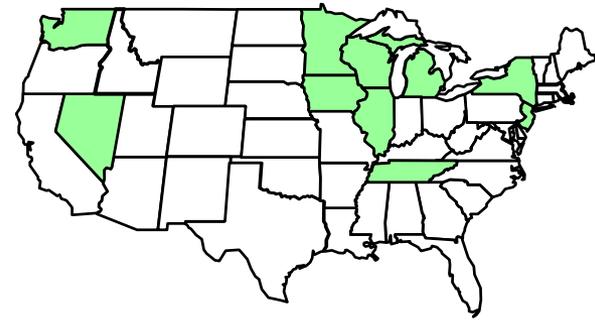
WSP | Parsons Brinckerhoff

Behind The Project

- **Sponsor:** Federal Highway Administration (FHWA) and Transportation Management Center Pooled Fund Study (TMC PFS)
- **Title:** Transportation Management Center Video Recording and Archiving Best General Practices
- **Duration:** 11 Months
- **Deliverable:** final report to be published soon

Key Contributors

- Jimmy Chu – FHWA
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- Paul Keltner – Wisconsin DOT
- Scott Kozlik – Wisconsin DOT



Best **GENERAL** Practices

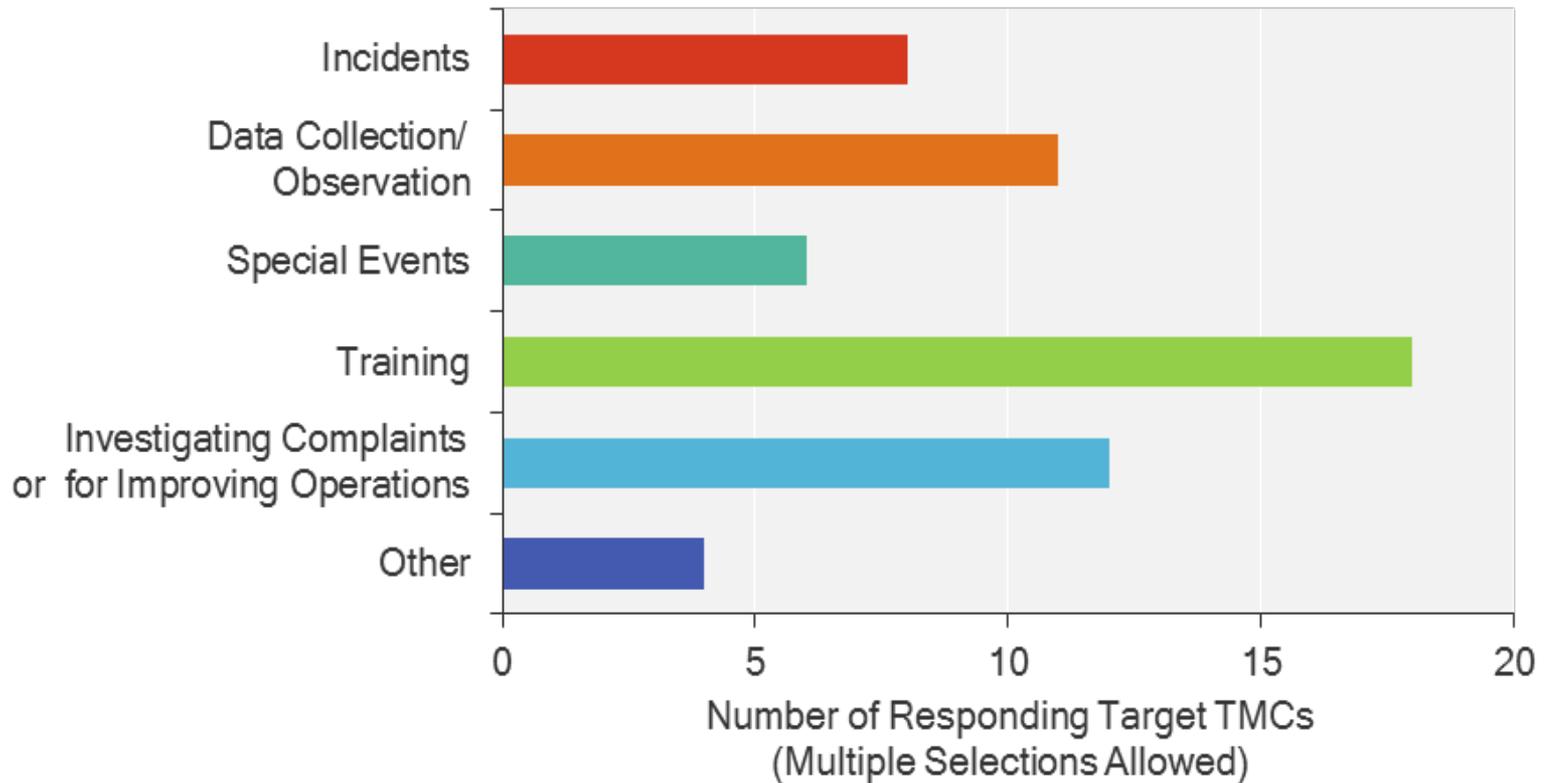
State and local regulatory, policy, operational, and fiscal environments differ (in some cases quite significantly)

One-size-fits-all practices rarely exist

This report presents best general practices for TMC leaders to consider and in some instances recognizes that several different practices might apply (specific to the needs of an agency or organization).

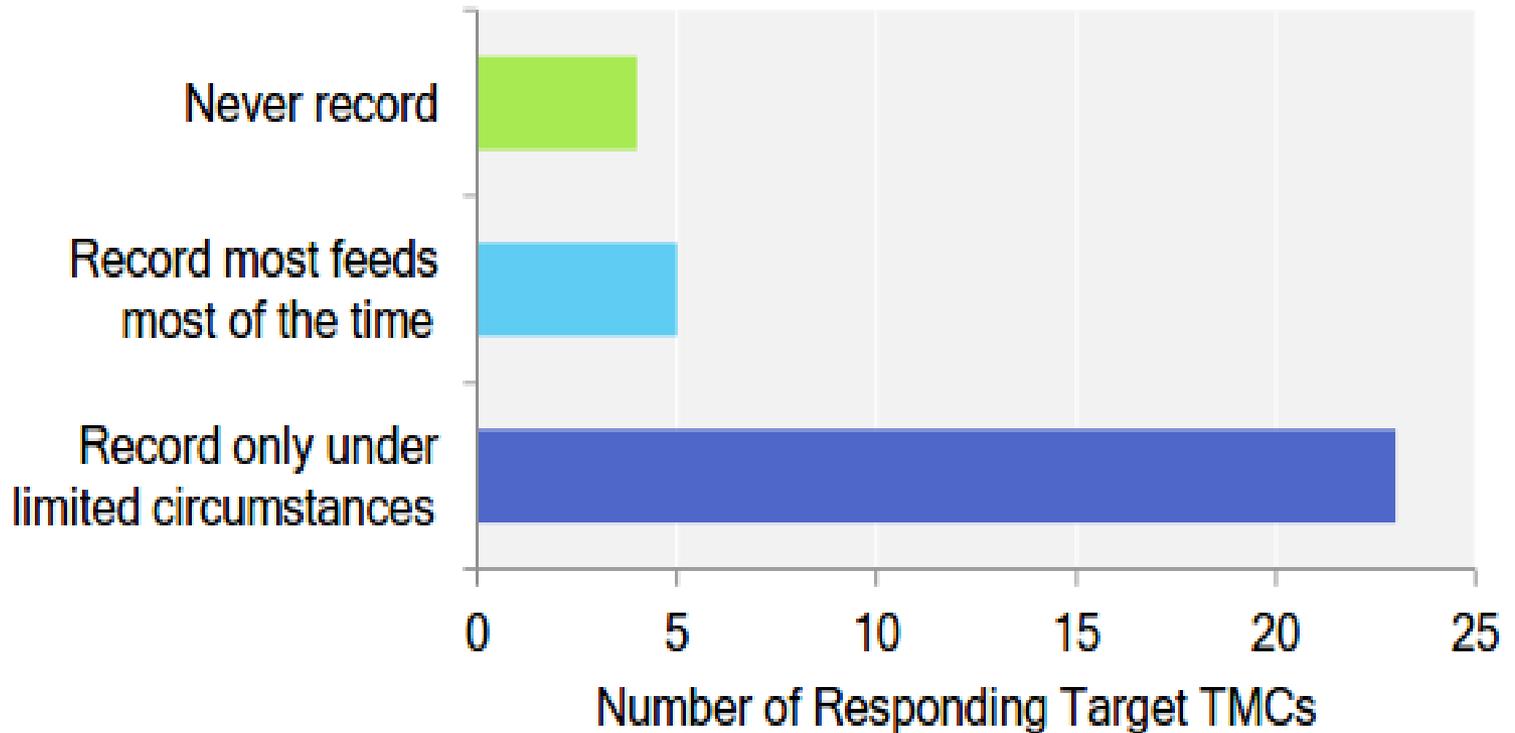
To Record or Not To Record....

Many reasons for recording and/or archiving



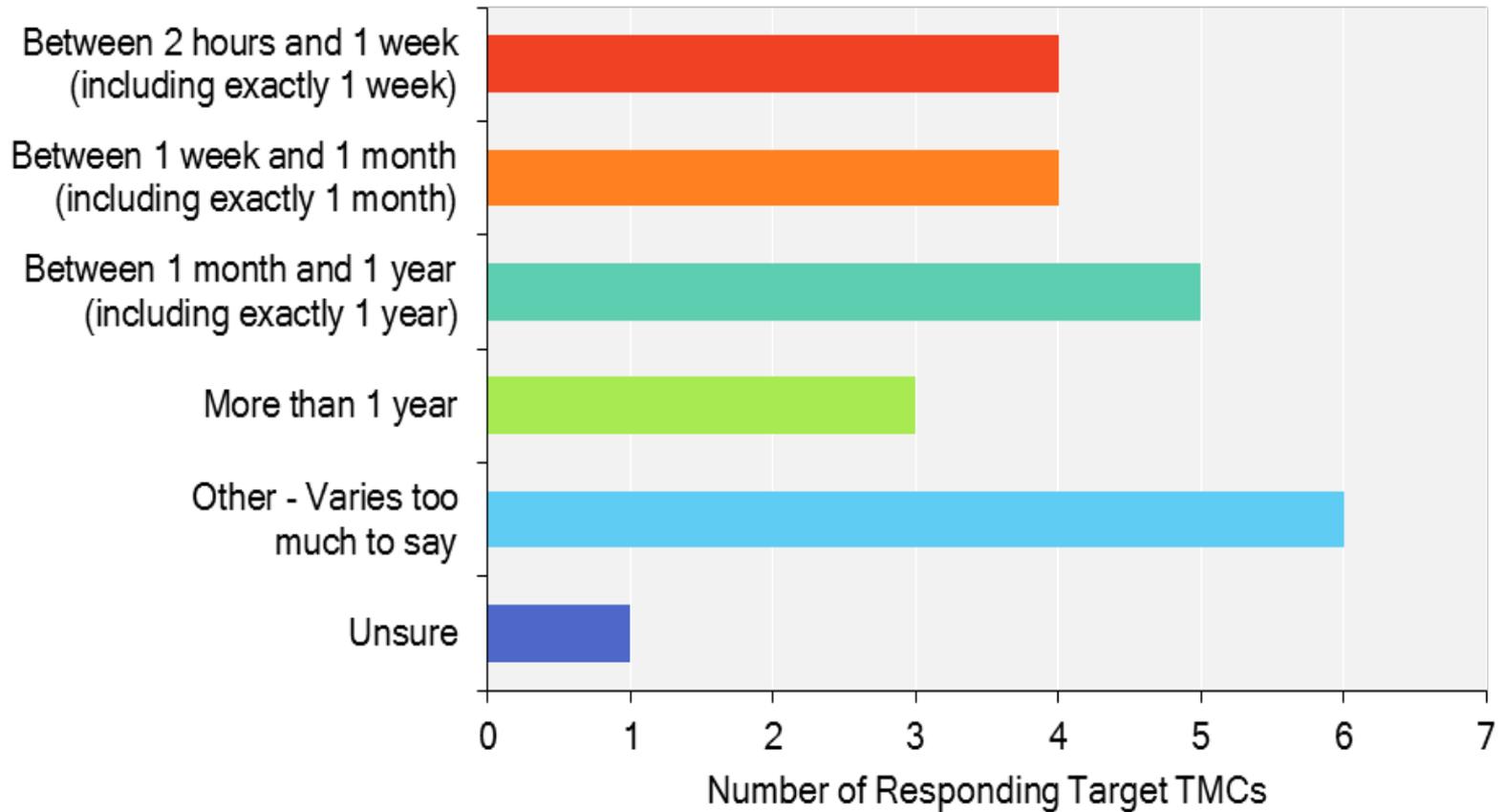
Frequency of Recording

Always – Sometimes - Never



Duration of Archive

Most Common Answer = “It Depends”



Intentions

Be clear that the primary purpose of traffic video is for traffic management, not security, noting that the traffic systems were not designed or intended to meet security system requirements

While there can be ancillary benefits for having recorded video available as a courtesy to law enforcement agencies, TMC staff need to be clear that the primary purpose of traffic cameras and recording technology is for traffic management

Best General Practice

Periodic Review

A great opportunity to review your policy is presented when opening a new TMC, rehabilitating an existing TMC, or preparing for a series of upcoming events.



Best General Practice

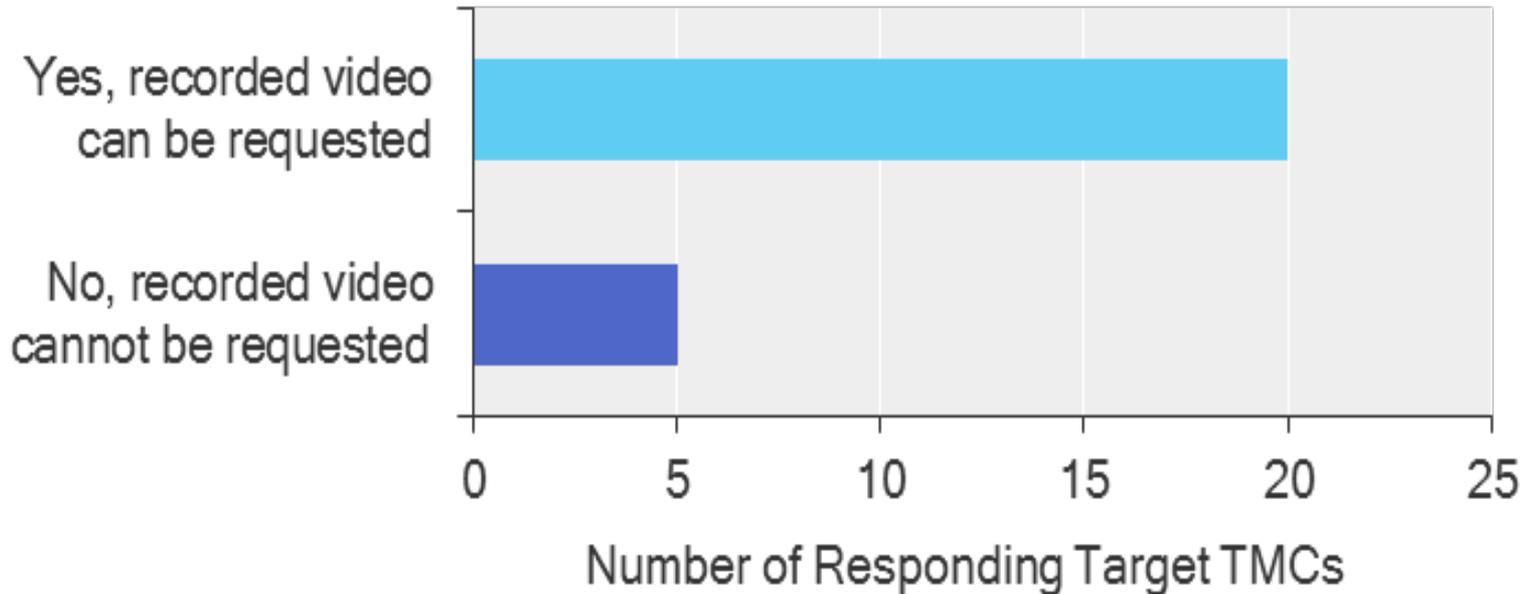
TSM&O Capability Maturity Model

Initial	Repeatable/ Defined	Managed/ Optimizing
<p>Ad-hoc decisions on which types of events to record, when to start recording, who decides to start recording, and how files are saved</p>	<p>Have written policy with agreed-upon types of events to record and who has the authority to make and delete recordings; file management system or standardized, searchable file naming convention</p>	<p>Document annual uses of recordings including value added and necessary staff time and technical resources to provide; consider needs to revise policies and practices, including reaching out to stakeholders to see if select recordings would support related functions such as engineering studies; consider process simplification</p>

Best General Practice

Fulfilling Requests for Recorded Video

No correlation to Always vs Sometimes



Example Processes

	New Jersey DOT	Iowa DOT	District of Columbia DOT
Request Media	PDF form via e-mailed	Web form	Web form (preferred), mail, fax, e-mail
Request Made to FOIA Officer?	No	No	Yes
Length of Time to Request from Date of the Recording	7 calendar days	3 business days	10 calendar days
Fees	\$100 for first 3-hour period and \$50 for each additional 3-hour period	None	None

Fulfillment Process

For recorded video requests, consider having an efficient process that includes:

The same web-based request form for public and law enforcement requests

Integration of the web-based form to a database that tracks request disposition

Keep the request process simple and scalable

Best General Practice

Distribute the Burden

Since video requests from law enforcement agencies can comprise 50% of the requests, consider assigning fulfillment of video archive requests to a partner law enforcement agency:

Faster response to their requests w/enhanced chain of custody for evidence

Release is not a core traffic management function

Some video requires law enforcement approval to release once their investigation is complete

Have mechanism to collect fees that offset costs

Best General Practice

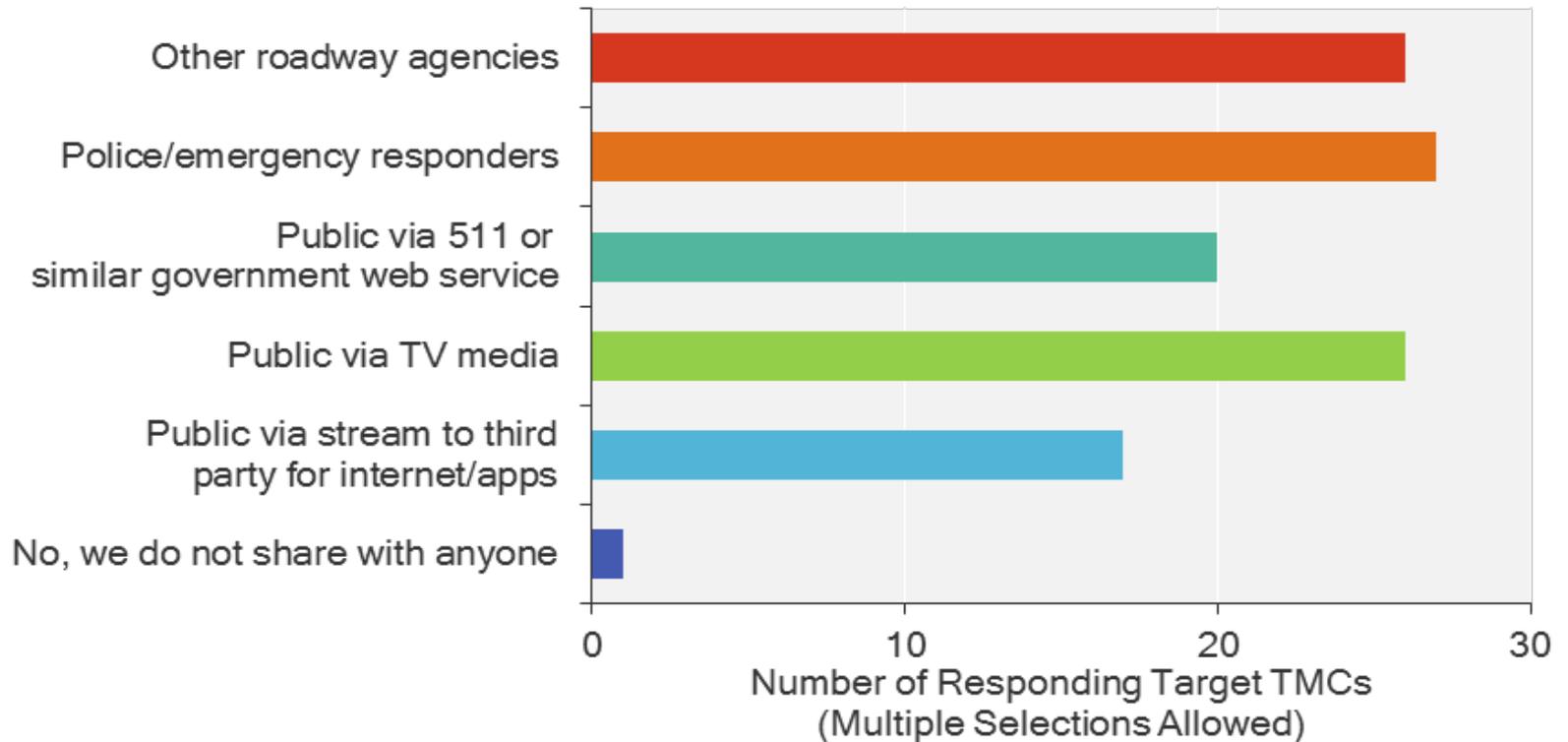
Reduce the Burden

If most camera images are available through a traveler information website, direct petitioners to check if there is a camera in their area of interest and if so, to refer to it in their request. Seeing the level of detail may also help manage expectations for video quality.



Sharing Real-Time Video

Almost all agencies share video with one or more entities



The “Red Button”

For sensitive situations, have the capability to cut feeds to the public/media while preserving them to transportation agencies and emergency responders.

If not possible, have a camera use policy which includes not zooming into personally identifiable details.



Multi-Agency Collaboration

TSM&O collaboration with local agencies:

Use recent, local clips in TIM training

Share requested clips with local agencies, even if they do not have streaming access

Consider including TIM participation as a condition of sharing streaming/recorded video

Be clear that the primary purpose of sharing video with law enforcement agencies is to assist with incident management

Best General Practice

Technology

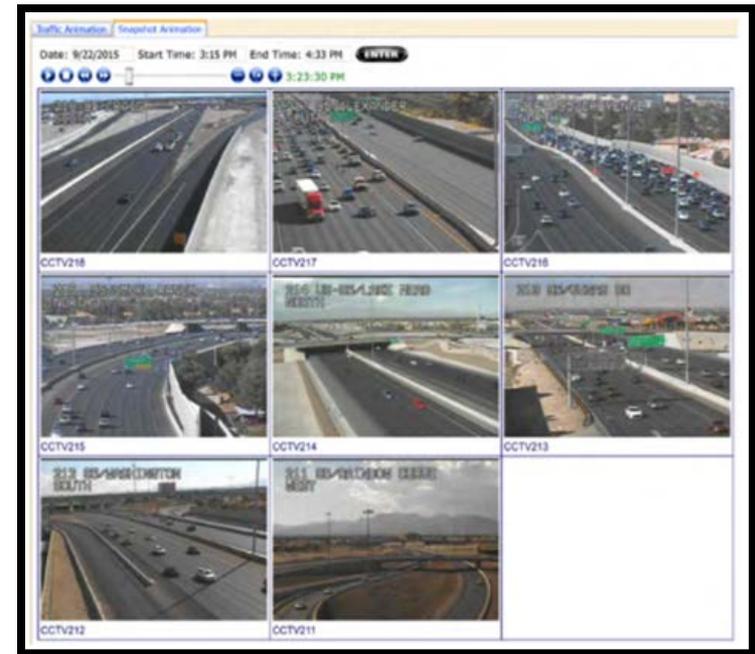
- Innovation in consumer & security drives progress; the transportation market has benefitted
- Each generation of CCTV camera is integrating new capabilities, or installing processing capability within the camera body itself.
 - Enhanced video resolution for better clarity
 - Thermal capabilities
 - Low light or night vision capabilities
 - On-board video analytic capabilities
 - On-board video recording

The Rise of Digital...

- Analog Technologies
 - Required centralized architecture, centralized switching
- IP-Based Video Systems
 - Enables a distributed architecture with multiple users having the possibility of accessing (and/or recording) video from multiple destinations
- Increased instances of recording & archiving with digital systems

Tech Example: Image Capture

- Intermittent or event based image captures for storage or use in traveler information systems.
- The camera or encoder can store snap shots captured from the encoded video stream either locally on the camera or on a network storage device at the TMC.
- For traffic management, events to trigger recording could be wrong-way vehicles or stopped vehicles.
- This allows increased archival capabilities while limiting the necessary storage space on network drives and recording devices.



Organizing Files

When saving video clips, use a consistent and searchable file name structure to save time and improve accuracy.

An example is: [DATE] [TIME VIDEO STARTS] [APPROXIMATE LOCATION] [EVENT TYPE] [CASE NUMBER] [NAME OR BADGE OF REQUESTOR] [CAMERA NUMBER OR MONITOR OUTPUT].avi



Best General Practice

Managing Storage

To mitigate the risk of high cost to store large volumes of data for video, generate two streams from each camera:

Higher resolution or frame rate for live viewing

Lower resolution or frame rate for recording or sharing

Consider a software feature to allow TMC staff to associate multiple camera feeds with an incident and automatically record a composite screenshot at a pre-defined interval that can later be reviewed for incident clearance performance management.

Best General Practice

Legal

- The federal Freedom of Information Act (FOIA) is designed to give citizens access to records supporting their rights to know about the functioning of the govt.
- Since the federal FOIA only applies to federal records and the federal government does not run TMCs, FOIA itself does not apply to TMCs.
- However, all 50 states and the District of Columbia have public record laws with a similar intent. Some use FOIA in the name of their own laws, such as Illinois FOIA. Others use different terminology, such as New Jersey's Open Public Records Act, the California Public Records Act, the Pennsylvania Right-to-Know Law, and several more.

Important Definitions

- Record - denotes video retained only until it is automatically over-written
- Archive - when video clips have been selected for retention beyond the automatic overwriting.
- While FOIA-type laws dictate which records must be released to the public, it is typically state public records laws that dictate if material must be retained.
- Materials that are not kept do not need to be released.

Specific Asks

Since FOIA and record retention laws differ for all states, ask your DOT's Counsel if your state's FOIA equivalent law has language on video recordings and if it differentiates between "raw data" and "records."

Ask your state's office that handles FOIA requests how it processes release of video, including fees. If they do not release video, ask them to check with their peers in other departments within the state.

Best General Practice

Video as Evidence

To support integrity of recordings for legal use:

Discuss process with law enforcement stakeholders and your agency's legal department

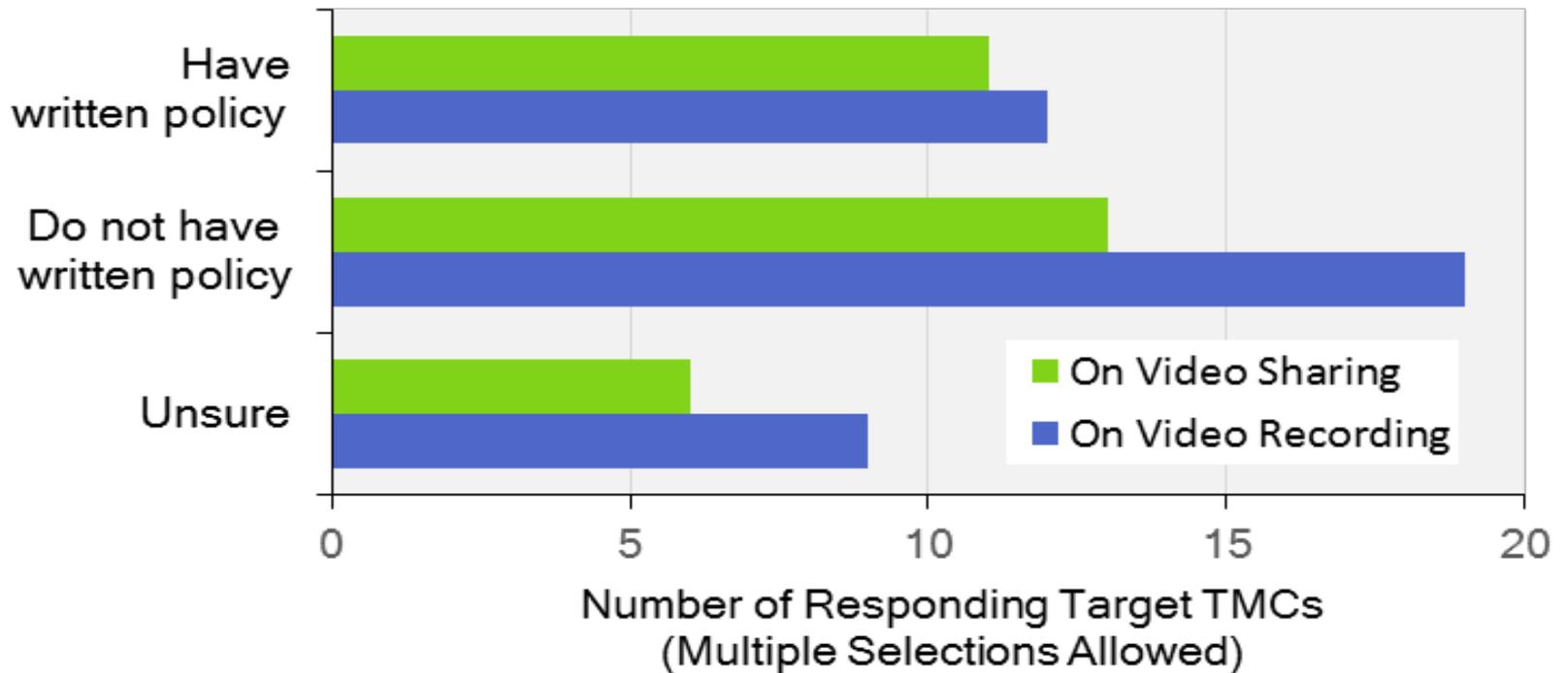
Publicize and follow a standard process

Limit the number of individuals who process requests and have access to files

Best General Practice

Written Policies and Agreements

No correlation to Always, Sometimes, or Never



Policies in the Report

- Florida DOT
- Minnesota DOT
- New York State DOT
- Oregon DOT
- Tennessee DOT
- Wisconsin DOT

Written Policies

Written policies for video sharing provide an opportunity to require attributing the video feed to the DOT source, including the branding of the traveler info if desired

Leverage written agreements for real-time video streaming to emergency responders and media for:

Notifying lead agency of incidents, debris on roadways, signal outages, etc.

Participating in TIM training

Support of safe quick-clearance

Best General Practice

Further Information

- Written report will be published by FHWA soon
- State DOT Experience
 - Paul Keltner, Wisconsin DOT
- State DOT Experience
 - Donald Gedge, Tennessee DOT