

WELCOME



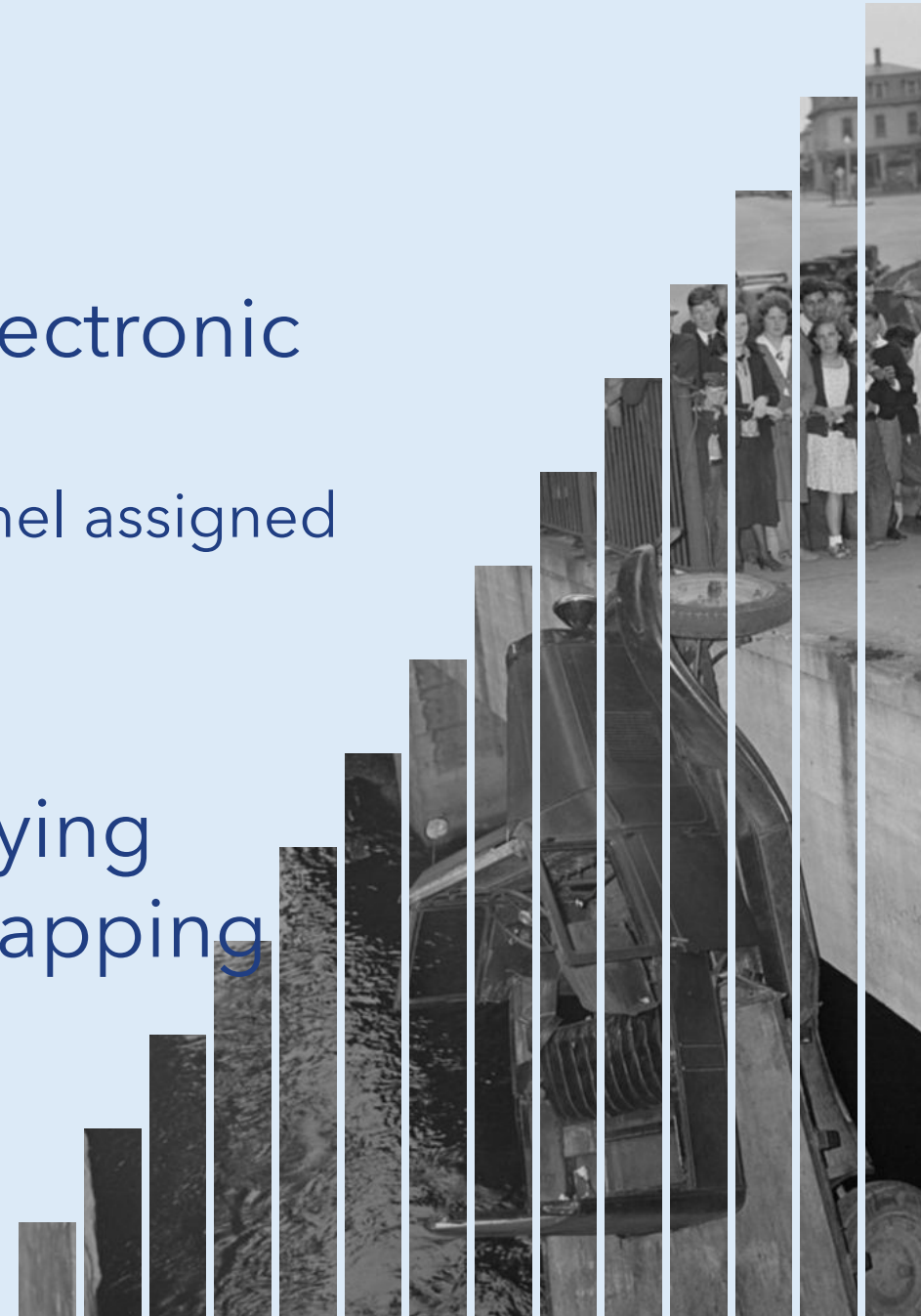
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Improvements to Electronic Surveying Processes in Crash Scene Mapping

6.12.25

PROPOSAL

- Equip every member of CARS with electronic surveying equipment
 - This will increase the number of CARS personnel assigned electronic surveying equipment by 62.5%
- Train all CARS members on the surveying equipment utilized for crash scene mapping



PROJECT GOALS

1. Acquire ten sets of electronic surveying equipment to expand the ability of CARS to forensically document crash scenes:
 - Acquire ten (10) Leica H125 CS20 Data Collectors
 - Acquire ten (10) Leica GS07 GPS/GNSS Antennae
 - Acquire ten (10) Leica GLS30 Surveying Poles
 - Acquire ten (10) GLONASS Receivers
 - Acquire ten (10) GALILEO Receivers
 - Acquire ten (10) BEIDOU Receivers
 - Acquire ten (10) GPS/GNSS Antennae Containers
 - Acquire twenty (20) Batteries
2. Host three (3) day training on equipment for all CARS members

PROJECT GOALS

This will allow us to:

- Memorialize short-lived evidence quickly and accurately;
- Minimize time spent with on-scene investigations, which increases public safety and reduces economic hardships;
- Reduce time to complete reconstruction reports and provide vital information to stakeholders in a timely manner.

COLLISION ANALYSIS & RECONSTRUCTION SECTION

- Statewide Unit
- Respond to and investigate fatal and serious injury crashes throughout the Commonwealth
- Divided into four regional teams
 - Northeast (Essex, Middlesex)
 - Southeast (Norfolk, Suffolk, Bristol, Plymouth, Cape & Islands)
 - Central (Worcester)
 - West (Hampden, Hampshire, Franklin, Berkshire)

Current C.A.R.S. Equipment

- Northeast Team
 - 7 Troopers, 1 Sergeant
 - 3 GPS/GNSS Units
 - 1 Total Station
 - 2 sUAS
- Southeast Team
 - 6 Troopers, 1 Sergeant
 - 4 GPS/GNSS Units
 - 2 Total Stations
 - 2 sUAS
- Central Team
 - 4 Troopers, 1 Sergeant
 - 1 GPS/GNSS Unit
 - 1 Total Station
 - 2 sUAS
- West Team
 - 5 Troopers, 1 Sergeant
 - 3 GPS/GNSS Units
 - 1 Total Station
 - 2 sUAS

GPS/GNSS System

- Minimal equipment
 - Quick assembly speeds up deployment/use of equipment
- One-person unit
 - Reduces need for additional CARS members to respond
- Collects data quickly (2-3 seconds per point)
 - Quick clearance
 - Reduces time of roadway closure
- Accurate and reliable
 - 2-3 cm accuracy when using all available GNSS satellites and MaCORS Network
- All-weather operation - Day or Night
- Records location data in 3 dimensions
 - Longitude
 - Latitude
 - Elevation
- Utilized to map ground control points for sUAS operations



Training

- To be conducted at MSP Driver Training Facility
- Train all CARS members
- Receive “Factory Trained” Certification
- Maine Technical Source



Why GPS/GNSS Systems?

- Reduce likelihood of secondary crashes by minimizing length of road closure
- Minimize the economic impact of extended road closures
- Enhance officer safety by reducing the amount of time exposed to traffic
- Faster report turnaround





Questions?