VEHICLE EXTRICATION

Effective:	April 18, 2025
Scheduled Review:	April 18, 2028
Approved:	Fire Chief Mike Kennedy

I. PURPOSE

Vehicle extrications require good judgment, proper training, and creativity. A plan should be used to accomplish tasks safely, rapidly, and efficiently while making the actions of the members predictable and coordinated.

II. PROCEDURE

It shall be the responsibility of the Incident Commander with input from operational and medical personnel, and other resources to determine what extrication tactics are to be performed at an incident. Training, expertise, scene hazards, patient condition, resources, and extenuating circumstances shall influence the methods and pace of each incident.

III. TERMINOLOGY

Standardized terminology shall be used at all extrication scenes. A complete list can be found in the State of Michigan Basic Vehicle Extrication Book. The following terms shall be used during incident operations, and are a subset of the larger set:

Action Circle / Hot Zone: The area at an extrication scene where the maximum danger exists. This is the area where the extrication is taking place and quite often contains many other hazards. Personal Protective Equipment (PPE) and extreme caution must be used in this area.

Alternative Fuel Vehicle (AFV) - Vehicle using other means of stored energy instead of, or in addition to gasoline, E-95 ethanol, or diesel fuel.

Battery Electric Vehicle (BEV) - Vehicle using stored electricity as its only fuel.

Cold Zone - The safe area outside the warm zone. Command, support functions, and staging would be in this area.

Compressed Natural Gas-powered vehicle (CNG) - Vehicle using compressed natural gas as a fuel for combustion in an internal combustion engine.

Extrication - A term used to describe the procedures used by rescue personnel to remove patients trapped by wreckage or by their injuries from vehicles involved in collisions or crashes.

Freeze - Recognized term used to signal an unsafe situation that immediately stops all extrication activities until the dangerous situation has been mitigated.

Fuel Cell Electric Vehicle (FCEV) - Vehicle using stored, compressed hydrogen gas to generate electricity for vehicle propulsion.

Hybrid Electric Vehicle (HEV) - Vehicle containing both a stored-electricity electrical drive system, as well as an internal combustion engine, both of which can be used for propulsion, either independently or together.

Natural Gas Vehicle (NGV) - Same as a Compressed Natural Gas (CNG) vehicle.

Passive Entry Passive Star Key (PEPS Key) - Key fob used in vehicles with push-button start. To disable the ignition system in vehicles with PEPS keys, the fob must be removed at least 16 feet from the vehicle.

Plug-in Hybrid Electric Vehicle (PHEV) Type of HEV that can be plugged into 120/240 volt AC shorelines to charge the onboard propulsion battery. PHEVs usually have extended all-electric-drive range compared to HEVs.

Warm Zone - The transition area between the Hot Zone and the Cold Zone that acts as a buffer area. Caution must be exercised in this area as well. This zone is used for the tool staging, parts dump area, and is the zone in which one would find the safety officer.

IV. PROCEDURE

Vehicle extrications shall follow basic procedures outlined in this section. Due to the uniqueness of these types of incidents involving vehicle extrication, detailed step-by-step procedures will not be implemented. Listed below are procedures to be followed by companies upon arrival at a vehicle extrication incident:

A. Arrive and safely position apparatus at the crash scene. Park to protect and provide a safe work area.

B. Establish command.

C. Perform a complete scene size-up.

D. Develop an Initial Action Plan (IAP)

E. Initiate the IAP

F. Scene Management

G. Establish work zones
   i. Establish lighting for nighttime incidents
   ii. Stretch and charge protective hoseline
   iii. Establish tool staging area
   iv. Identify slip/trip hazards

H. Scan for airbags, strip trim and other coverings to determine location of pneumatic lifting pistons, pre-tensioners, airbags, and inflators.

I. Hazard Control
   i. Traffic
   ii. Fuel/fluid leaks
   iii. Crowd control
   iv. Hazardous materials
   v. Electrical infrastructure
   vi. Check contents of trunk
   vii. Battery/electrical system shutdown

J. Access Patient
   i. Try opening doors before cutting
   ii. Roll down windows
   iii. Move seat(s) back
   iv. Tilt/telescope steering column out of the way
   v. Perform glass management

K. Assess Patient
   i. Protect patient from breaking/flying glass
   ii. Remove all non-laminated tempered glass before cutting
   iii. Remove windshield independently, or with roof (use discretion) if performing a roof removal
   iv. All breaking of glass shall be done in a controlled manner, with a spring loaded center punch, if possible, with glass pieces removed away from the patient.

L. Disentangle

M. Extricate

V. FIREFIGHTER AND PATIENT PROTECTION

PPE shall be worn while working in the Hot Zone or in close proximity to extrication activities. At minimum, PPE at an extrication incident shall consist of:

A. Turnout gear (coat and pants)
B. Safety glasses
C. Helmet
D. Extrication or structural firefighting gloves
E. Protective boots
F. Reflective vest (if operating in/near a roadway or parking lot)

Precautions shall also be taken to protect the trapped or injured persons from further harm during the extrication. The use of blankets, short boards, and other devices should be utilized whenever possible.