

Project Title Risk Management to Reduce Vehicle Incidents in the Fire Service			Date
Operation Description Vehicle operations	Team Members Department A	Team Facilitators	Relevant SOPs

Incident Type	Risk/Hazard	Likelihood	Hazard/Effect	Risk Rating	Current controls	Possible new Controls
Emergency Sideswipe, Same Direction	<p>Intersection</p> <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> • Rain/snow causing low visibility • Poor road conditions leading to loss of vehicle control • Narrow roads/alleys/driveways <p>2nd vehicle action</p> <ul style="list-style-type: none"> • Fails to yield • Parked away from curb • Fixed object <p>Driver</p> <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • Failure to check blind spot • Misjudge lane width <p>Time of Day</p> <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 	<p>3</p> <p>1</p> <p>2</p> <p>3</p> <p>3</p>	<p>2</p> <p>2</p> <p>2</p> <p>2</p>	<p>8M</p> <p>3L</p> <p>5M</p> <p>8M</p> <p>8M</p>	<ul style="list-style-type: none"> • Simulators • Training <ul style="list-style-type: none"> ○ Evasive driving drills ○ Low speed driving (25-35mph) • Emergency vs. non-emergency policies <ul style="list-style-type: none"> ○ Admin change of quarters • Discipline (IR#s) • Licensure • Current policies <ul style="list-style-type: none"> ○ Defensive driving manual • In-service Company Drivers Training 	<ul style="list-style-type: none"> • Improved Training (1) <ul style="list-style-type: none"> ○ Defensive driver course focus on apparatus clearance ○ Perception reaction training/cone course ○ Re-certification/refreshers training ○ New hire and promotion to engineer training ○ Increased communication between Officer and Driver for newly promoted company officer (1) • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training facility/course (1) • Seatbelt enforcement and design (1)
Emergency Sideswipe, Opposite Direction	<p>Intersection</p> <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> • Rain/snow causing low visibility • Poor road conditions leading to loss of vehicle control • Narrow roads/alleys/driveways <p>2nd vehicle action</p>	<p>2</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p>	<p>2</p> <p>2</p> <p>2</p> <p>2</p>	<p>5M</p> <p>3L</p> <p>3L</p> <p>5M</p> <p>5M</p>	<ul style="list-style-type: none"> • Simulators • Training <ul style="list-style-type: none"> ○ Evasive driving drills ○ Low speed driving (25-35mph) • Emergency vs. non-emergency policies <ul style="list-style-type: none"> ○ Admin change of quarters 	<ul style="list-style-type: none"> • Improved Training (1) <ul style="list-style-type: none"> ○ Defensive driver course focus on apparatus clearance ○ Perception reaction training/cone course ○ Re-certification/refreshers training ○ New hire and promotion to

	<ul style="list-style-type: none"> • Fails to yield • Parked away from curb • Fixed object Driver <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • Failure to check blind spot • Misjudge lane width Time of Day <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 				<ul style="list-style-type: none"> • Discipline (IR#s) • Licensure • Current policies <ul style="list-style-type: none"> ○ Defensive driving manual • In-service Company Drivers Training 	<ul style="list-style-type: none"> ○ engineer training <ul style="list-style-type: none"> ○ Increased communication between Officer and Driver for newly promoted company officer (1) • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training facility/course (1) • Seatbelt enforcement and design (1)
Emergency Rear End	Intersection <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control Weather/Environment <ul style="list-style-type: none"> • Wet/snowy road conditions leading to skidding 2nd vehicle action <ul style="list-style-type: none"> • Abrupt stop in road • Pull in front of Department A vehicle Driver <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • End of shift fatigue/delayed reaction Mechanical/maintenance issue) Time of Day <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 	1	2	3L	<ul style="list-style-type: none"> • In-service Company Drivers Training • Simulators • Licensure • Current policies <ul style="list-style-type: none"> ○ Defensive driving manual ○ Limited Access Roadway Policy 	<ul style="list-style-type: none"> • NFPA Reflective markings for older apparatus (3) • More Detailed Blocking SOP for all types of Roadways(1) • Improved Training (1) <ul style="list-style-type: none"> ○ Perception reaction training/cone course ○ Blocking Procedures ○ Re-certification/refresher training
Emergency, Angled Intersection	Intersection <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control Weather/Environment <ul style="list-style-type: none"> • Wet/snowy road conditions leading to skidding • Poor road conditions leading to loss of vehicle control • Narrow roads/alleys/driveways 	1	2	3L	<ul style="list-style-type: none"> • Simulators • Training <ul style="list-style-type: none"> ○ Evasive driving drills ○ Low speed driving (25-35mph) • Emergency vs. non-emergency policies <ul style="list-style-type: none"> ○ Admin change of quarters 	<ul style="list-style-type: none"> • Improved Training (1) <ul style="list-style-type: none"> ○ Defensive driver course focus on apparatus clearance ○ Perception reaction training/cone course ○ Re-certification/refresher training ○ New hire and promotion to

	<ul style="list-style-type: none"> • Blind intersections <p>2nd vehicle action</p> <ul style="list-style-type: none"> • Abrupt stop in road • Fails to yield • Pull in front of Department A vehicle • Parked away from curb <p>Driver</p> <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • End of shift fatigue/delayed reaction <p>Mechanical/maintenance issue)</p> <p>Time of Day</p> <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 				<ul style="list-style-type: none"> • Public education • Discipline (IR#s) • Licensure • In-service Company Drivers Training • Traffic/security cameras • Current policies (SOP's) <ul style="list-style-type: none"> ○ Defensive driving manual 	<ul style="list-style-type: none"> ○ engineer training ○ Increased communication between Officer and Driver for newly promoted company officer (1) • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training facility/course (1) • Seatbelt enforcement and design (1)
Emergency Turning Right	<p>Intersection</p> <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> • Wet/snowy road conditions leading to skidding • Poor road conditions leading to loss of vehicle control • Narrow roads/alleys/driveways • Blind intersections <p>2nd vehicle action</p> <ul style="list-style-type: none"> • Abrupt stop in road • Fails to yield • Pull in front of Department A vehicle • Parked away from curb <p>Driver</p> <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • End of shift fatigue/delayed reaction • Failure to check blindspot/mirrors <p>Mechanical/maintenance issue)</p> <p>Time of Day</p> <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 	<p>2</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>2</p>	<p>2</p> <p>2</p> <p>2</p> <p>3</p> <p>3</p> <p>2</p>	<p>5M</p> <p>3L</p> <p>8M</p> <p>12H</p> <p>6M</p> <p>5M</p>	<ul style="list-style-type: none"> • Simulators • Training <ul style="list-style-type: none"> ○ Evasive driving drills ○ Low speed driving (25-35mph) • Emergency vs. non-emergency policies <ul style="list-style-type: none"> ○ Admin change of quarters • Public education • Discipline (IR#s) • Licensure • Traffic/security cameras • In-service Company Drivers Training • Current policies <ul style="list-style-type: none"> ○ Defensive driving manual 	<ul style="list-style-type: none"> • Improved Training (1) <ul style="list-style-type: none"> ○ Defensive driver course focus on apparatus clearance ○ Perception reaction training/cone course ○ Re-certification/refresher training ○ New hire and promotion to engineer training ○ Increased communication between Officer and Driver for newly promoted company officer (1) • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training

						<ul style="list-style-type: none"> facility/course (1) • Seatbelt enforcement and design (1) and Driver
Emergency Turning Left	<p>Intersection</p> <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> • Wet/snowy road conditions leading to skidding • Poor road conditions leading to loss of vehicle control • Narrow roads/alleys/driveways • Blind intersections <p>2nd vehicle action</p> <ul style="list-style-type: none"> • Abrupt stop in road • Fails to yield • Pull in front of Department A vehicle • Parked away from curb <p>Driver</p> <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • End of shift fatigue/delayed reaction <p>Mechanical/maintenance issue)</p> <p>Time of Day</p> <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 	<p>2</p> <p>1</p> <p>2</p> <p>3</p> <p>1</p> <p>1</p>	<p>2</p> <p>2</p> <p>2</p> <p>3</p> <p>3</p> <p>2</p>	<p>5M</p> <p>3L</p> <p>5M</p> <p>12H</p> <p>6M</p> <p>3L</p>	<ul style="list-style-type: none"> • Simulators • Training <ul style="list-style-type: none"> ○ Evasive driving drills ○ Low speed driving (25-35mph) • Emergency vs. non-emergency policies <ul style="list-style-type: none"> ○ Admin change of quarters • Public education • Discipline (IR#s) • Licensure • Traffic/security cameras • Current policies <ul style="list-style-type: none"> ○ Defensive driving manual • In-service Company Drivers Training 	<ul style="list-style-type: none"> • Improved Training (1) <ul style="list-style-type: none"> ○ Defensive driver course focus on apparatus clearance ○ Perception reaction training/cone course ○ Re-certification/refresher training ○ New hire and promotion to engineer training ○ Increased communication between Officer and Driver for newly promoted company officer (1) • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training facility/course (1) • Seatbelt enforcement and design (1)
Emergency, Backing	<p>On-Scene</p> <ul style="list-style-type: none"> • Vehicle • Fixed Object <p>At the Hospital</p> <p>Loss of spotter communication</p>	<p>2</p>	<p>2</p>	<p>5M</p>	<ul style="list-style-type: none"> • Backing SOP • Discipline (IR#) • Driver training/FSVO • Driving manual • Spotters • In-service Company Drivers Training 	<ul style="list-style-type: none"> • Rear view cam on ambulances (3) • Wireless Headsets for Driver and Spotter (1) • Audible backing sensor alarm (3) • Increased hands on training / backing (1) • Cameras at firehouses (3) • Dedicated Drivers Training

						facility/course (1)
Non-Emergency Sideswipe, Same Direction	<p>Intersection</p> <ul style="list-style-type: none"> Failure to control intersection Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> Rain/snow causing low visibility Poor road conditions leading to loss of vehicle control Narrow roads/alleys/driveways <p>2nd vehicle action</p> <ul style="list-style-type: none"> Fails to yield Parked away from curb Fixed object <p>Driver</p> <ul style="list-style-type: none"> Inappropriate speeding Sudden movement Failure to check blind spot Misjudge lane width <p>Time of Day</p> <ul style="list-style-type: none"> Low visibility/darkness High traffic volume/congestion 	2 1 1 2 2	1 1 2 2 1	2L 1L 3L 5M 2L	<ul style="list-style-type: none"> Simulators Training <ul style="list-style-type: none"> Evasive driving drills Low speed driving (25-35mph) Emergency vs. non-emergency policies <ul style="list-style-type: none"> Admin change of quarters Public education Discipline (IR#s) Licensure Traffic/security cameras Current policies <ul style="list-style-type: none"> Defensive driving manual In-service Company Drivers Training 	<ul style="list-style-type: none"> Improved Training (1) <ul style="list-style-type: none"> Defensive driver course focus on apparatus clearance Perception reaction training/cone course Re-certification/refresher training New hire and promotion to engineer training Increased communication between Officer and Driver for newly promoted company officer (1) Better simulator use (2-3) Implement new policies for emergency response (1) Emergency vehicle pre-emptors for select intersections (1) Use of VDR data (1) Dash cameras (2) FSVO certification (1) Side view camera (3) Design of fire apparatus (3) Dedicated Drivers Training facility/course (1) Seatbelt enforcement and design (1)
Non-Emergency Sideswipe, Opposite Direction	<p>Intersection</p> <ul style="list-style-type: none"> Failure to control intersection Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> Rain/snow causing low visibility Poor road conditions leading to loss of vehicle control Narrow roads/alleys/driveways <p>2nd vehicle action</p> <ul style="list-style-type: none"> Fails to yield Parked away from curb Fixed object <p>Driver</p> <ul style="list-style-type: none"> Inappropriate speeding 	1 1 1 1 1	1 1 2 2 1	1L 1L 3L 3L 1L	<ul style="list-style-type: none"> Simulators Training <ul style="list-style-type: none"> Evasive driving drills Low speed driving (25-35mph) Emergency vs. non-emergency policies <ul style="list-style-type: none"> Admin change of quarters Public education Discipline (IR#s) Licensure Traffic/security cameras Current policies 	<ul style="list-style-type: none"> Improved Training (1) <ul style="list-style-type: none"> Defensive driver course focus on apparatus clearance Perception reaction training/cone course Re-certification/refresher training New hire and promotion to engineer training Increased communication between Officer and Driver for newly promoted

	<ul style="list-style-type: none"> Sudden movement Failure to check blind spot Misjudge lane width <p>Time of Day</p> <ul style="list-style-type: none"> Low visibility/darkness High traffic volume/congestion 				<ul style="list-style-type: none"> Defensive driving manual In-service Company Drivers Training 	<ul style="list-style-type: none"> company officer (1) Better simulator use (2-3) Implement new policies for emergency response (1) Emergency vehicle pre-emptors for select intersections (1) Use of VDR data (1) Dash cameras (2) FSVO certification (1) Side view camera (3) Design of fire apparatus (3) Dedicated Drivers Training facility/course (1) Seatbelt enforcement and design (1)
Non-Emergency Rear End	<p>Intersection</p> <ul style="list-style-type: none"> Failure to control intersection Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> Wet/snowy road conditions leading to skidding <p>2nd vehicle action</p> <ul style="list-style-type: none"> Abrupt stop in road Pull in front of Department A vehicle <p>Driver</p> <ul style="list-style-type: none"> Inappropriate speeding Sudden movement End of shift fatigue/delayed reaction <p>Mechanical/maintenance issue)</p> <p>Time of Day</p> <ul style="list-style-type: none"> Low visibility/darkness High traffic volume/congestion 	1	1	1L	<ul style="list-style-type: none"> In-service Company Drivers Training Simulators Licensure Current policies <ul style="list-style-type: none"> Defensive driving manual Limited Access Roadway Policy 	<ul style="list-style-type: none"> NFPA Reflective markings for older apparatus (3) More Detailed Blocking SOP for all types of Roadways(1) Improved Training (1) <ul style="list-style-type: none"> Perception reaction training/cone course Blocking Procedures Re-certification/refresher training
Non-Emergency, Angle Intersection	<p>Intersection</p> <ul style="list-style-type: none"> Failure to control intersection Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> Wet/snowy road conditions leading to skidding <ul style="list-style-type: none"> Poor road conditions leading to loss of vehicle control Narrow roads/alleys/driveways Blind intersections <p>2nd vehicle action</p>	1	1	1L	<ul style="list-style-type: none"> Simulators Training <ul style="list-style-type: none"> Evasive driving drills Low speed driving (25-35mph) Emergency vs. non-emergency policies <ul style="list-style-type: none"> Admin change of quarters Public education Discipline (IR#s) 	<ul style="list-style-type: none"> Improved Training (1) <ul style="list-style-type: none"> Defensive driver course focus on apparatus clearance Perception reaction training/cone course Re-certification/refresher training New hire and promotion to engineer training Increased communication

	<ul style="list-style-type: none"> • Abrupt stop in road • Fails to yield • Pull in front of Department A vehicle • Parked away from curb <p>Driver</p> <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • End of shift fatigue/delayed reaction <p>Mechanical/maintenance issue)</p> <p>Time of Day</p> <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 				<ul style="list-style-type: none"> • Licensure • Traffic/security cameras • In-service Company Drivers Training • Current policies (SOP's) <ul style="list-style-type: none"> ○ Defensive driving manual 	<p>between Officer and Driver for newly promoted company officer (1)</p> <ul style="list-style-type: none"> • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training facility/course (1) <p>Seatbelt enforcement and design (1)</p>
Non-Emergency Turning Right	<p>Intersection</p> <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> • Wet/snowy road conditions leading to skidding • Poor road conditions leading to loss of vehicle control • Narrow roads/alleys/driveways • Blind intersections <p>2nd vehicle action</p> <ul style="list-style-type: none"> • Abrupt stop in road • Fails to yield • Pull in front of Department A vehicle • Parked away from curb <p>Driver</p> <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • End of shift fatigue/delayed reaction <p>Mechanical/maintenance issue)</p> <p>Time of Day</p> <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 	<p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>1</p> <p>1</p>	<p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>1</p>	<p>1L</p> <p>1L</p> <p>5M</p> <p>5M</p> <p>3L</p> <p>1L</p>	<ul style="list-style-type: none"> • Simulators • Training <ul style="list-style-type: none"> ○ Evasive driving drills ○ Low speed driving (25-35mph) • Emergency vs. non-emergency policies <ul style="list-style-type: none"> ○ Admin change of quarters • Public education • Discipline (IR#s) • Licensure • Traffic/security cameras • In-service Company Drivers Training • Current policies <ul style="list-style-type: none"> ○ Defensive driving manual 	<ul style="list-style-type: none"> • Improved Training (1) <ul style="list-style-type: none"> ○ Defensive driver course focus on apparatus clearance ○ Perception reaction training/cone course ○ Re-certification/refresher training ○ New hire and promotion to engineer training ○ Increased communication between Officer and Driver for newly promoted company officer (1) • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training facility/course (1) • Seatbelt enforcement and

						design (1)
Non-Emergency Turning Left	<p>Intersection</p> <ul style="list-style-type: none"> • Failure to control intersection • Intersection Control <p>Weather/Environment</p> <ul style="list-style-type: none"> • Wet/snowy road conditions leading to skidding • Poor road conditions leading to loss of vehicle control • Narrow roads/alleys/driveways • Blind intersections <p>2nd vehicle action</p> <ul style="list-style-type: none"> • Abrupt stop in road • Fails to yield • Pull in front of Department A vehicle • Parked away from curb <p>Driver</p> <ul style="list-style-type: none"> • Inappropriate speeding • Sudden movement • End of shift fatigue/delayed reaction <p>Mechanical/maintenance issue)</p> <p>Time of Day</p> <ul style="list-style-type: none"> • Low visibility/darkness • High traffic volume/congestion 	1 1 1 2 1 1	1 1 2 2 1	1L 1L 3L 5M 3L 1L	<ul style="list-style-type: none"> • Simulators • Training <ul style="list-style-type: none"> ○ Evasive driving drills ○ Low speed driving (25-35mph) • Emergency vs. non-emergency policies <ul style="list-style-type: none"> ○ Admin change of quarters • Public education • Discipline (IR#s) • Licensure • Traffic/security cameras • In-service Company Drivers Training • Current policies <ul style="list-style-type: none"> ○ Defensive driving manual 	<ul style="list-style-type: none"> • Improved Training (1) <ul style="list-style-type: none"> ○ Defensive driver course focus on apparatus clearance ○ Perception reaction training/cone course ○ Re-certification/refresher training ○ New hire and promotion to engineer training ○ Increased communication between Officer and Driver for newly promoted company officer (1) • Better simulator use (2-3) • Implement new policies for emergency response (1) • Emergency vehicle pre-emptors for select intersections (1) • Use of VDR data (1) • Dash cameras (2) • FSVO certification (1) • Side view camera (3) • Design of fire apparatus (3) • Dedicated Drivers Training facility/course (1) <ul style="list-style-type: none"> • Seatbelt enforcement and design (1)
Non-Emergency Backing	<p>Fixed Object</p> <ul style="list-style-type: none"> • Pole • Hydrant • Vehicle <p>Quarters</p>	2	2	5M	<ul style="list-style-type: none"> • Backing SOP • Discipline (IR#) • Driver training/FSVO • Driving manual • Spotters <ul style="list-style-type: none"> ○ In-service Company Drivers Training 	<ul style="list-style-type: none"> • Rear view cam on ambulances (3) • Wireless Headsets for Driver and Spotter (1) • Audible backing sensor alarm (3) • Increased hands on training / backing (1) • Cameras at firehouses (3) • Dedicated Drivers Training facility/course (1)