

<p align="center">U.S. Department of Agriculture Natural Resources Conservation Service</p>	<p align="center">1. WORK PROJECT/ACTIVITY</p> <p align="center">WINTER DRIVING</p>	<p align="center">2. LOCATION</p> <p align="center">Davis, CA</p>	<p align="center">3. UNIT</p> <p align="center">Snow Survey</p>		
<p>JOB HAZARD ANALYSIS (JHA)</p>	<p align="center">4. NAME OF ANALYST</p> <p align="center">Marianne Hallet</p>	<p align="center">5. JOB TITLE</p> <p align="center">Water Supply Specialist</p>	<p align="center">6. DATE PREPARED</p> <p align="center">February 21, 2007</p>		
<p align="center">7. TASKS/PROCEDURES</p>	<p align="center">8. HAZARDS</p>	<p align="center">9. ABATEMENT ACTIONS</p> <p align="center">Engineering Controls * Substitution * Administrative Controls * PPE</p>			
<p>Preparing Your Vehicle</p>	<p>In winter, conditions such as snow, ice, fog, rain, wet leaves and dark nights make driving particularly hazardous. High winds can also be a problem, as can flash flooding.</p> <p>Your return to safety may depend upon reliable equipment.</p>	<ul style="list-style-type: none"> • Get your vehicle winter-ready with a maintenance check-up. Don't wait for winter to have your battery, belts hoses, radiator, oil, lights, brakes, exhaust system, heater/defroster, wipers, and ignition system checked. • Clean your windshield and windows (low sun on cold winter days can be dazzling and prevent you from seeing changes in road conditions and other hazards), check screen washers are not blocked and that screen wash is topped up and contains solution to prevent freezing. • Avoid using very hot water to clear frozen window glass, as it could break the glass and will re-freeze more quickly. • Ensure that head, tail and brake lights are all working and keep lenses clear and free from snow or salt. • Ensure tires are in good condition and properly inflated. • Worn and damaged tires can hamper your ability to drive safely. Have tires checked or replaced before winter begins. Under-inflated tires will increase your fuel consumption, which you would particularly want to avoid if making a long journey in snow. Over-inflated tires will reduce your grip on the road making it imperative that you reduce your speed. • Tire pressure should be checked every two weeks. • Ensure that the gas tank is sufficiently full (full is preferred). • Carry rescue equipment throughout the winter. <table border="1" data-bbox="905 1101 1957 1513"> <tr> <td data-bbox="905 1101 1430 1513"> <ul style="list-style-type: none"> • Ice scraper/snowbrush • Shovel • Sand or other traction aid • Tow rope or chain • Booster cables • Road flares or warning lights • Gas line antifreeze • Flashlight and batteries • First aid kit </td> <td data-bbox="1430 1101 1957 1513"> <ul style="list-style-type: none"> • Fire extinguisher • Small tool kit • Extra clothing and footwear • Blanket • Non-perishable energy foods – e.g., chocolate or granola bars, juice, instant coffee, tea, soup, bottled water • Candle and a small tin can • Matches • Toilet paper </td> </tr> </table>		<ul style="list-style-type: none"> • Ice scraper/snowbrush • Shovel • Sand or other traction aid • Tow rope or chain • Booster cables • Road flares or warning lights • Gas line antifreeze • Flashlight and batteries • First aid kit 	<ul style="list-style-type: none"> • Fire extinguisher • Small tool kit • Extra clothing and footwear • Blanket • Non-perishable energy foods – e.g., chocolate or granola bars, juice, instant coffee, tea, soup, bottled water • Candle and a small tin can • Matches • Toilet paper
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<p>Before You Set Off</p> <p>Be Prepared!</p>	<p>Lack of preparation may leave you without the proper equipment or communications to respond to the challenges of adverse conditions.</p>	<ul style="list-style-type: none"> • Short-term weather forecasts are now very accurate, so listen to local/national weather broadcasts and to travel information bulletins on the radio. • If conditions are very bad, avoid making your journey unless it is absolutely necessary. • If you are traveling a long distance, plan your route ahead of time. Let someone know of your destination and expected time of arrival. • Wear comfortable clothing that doesn't restrict your movement while at the wheel. Keep warm clothing for getting out of your vehicle. • Eat a good breakfast when you know you will be travelling in bad weather. • Allow plenty of extra time for your journey. • Clear your windows and mirrors completely of snow and ice before you set off. (Make sure the heater is blowing warm air before setting off - it will keep your windscreen clear). • Ensure that your cell phone/satelite phone is charged and carried with you. • Plan to stop every two hours, if you can, for fresh air and hot drinks - but no alcohol. • Keep your vehicle well-ventilated. Having the car heater on full can make you drowsy.
<p>On The Road</p> <p>Stay alert, slow down and stay in control</p>	<p>Unsafe conditions</p>	<ul style="list-style-type: none"> • Wear your seat belt. • Turn on your vehicle's full lighting system in poor visibility. Hail, heavy snow, fog, and rain all reduce visibility - use dipped headlights. Only travel at a speed which you will be able to stop within the distance you can see to be clear. • Good road observation is essential so conditions can be interpreted accurately and speed adjusted accordingly. • The biggest single danger to any driver is being unable to see properly - if you cannot see the road clearly, you will not be able to make the right decisions. Fog, which is common during the winter, is one of the most dangerous weather conditions and an accident involving one vehicle can quickly involve many others, especially if they are driving too close to one another. • Controlling your speed is also crucial. Your tire grip will be substantially reduced, increasing your risk of skidding, if you drive too

<p style="text-align: center;">On The Road</p> <p style="text-align: center;">Stay alert, slow down and stay in control</p>	<p>Unsafe conditions</p>	<p>fast on a slippery or wet road.</p> <ul style="list-style-type: none"> • Smooth control is another essential element of safer winter driving. You should always aim to brake, steer and change gear as smoothly as possible to avoid affecting the grip of your tire on the road surface. • It takes longer to stop on a slippery road. It's important to leave plenty of space between you and the vehicle ahead. A guide to safe spacing under normal driving conditions is the two-second rule. In winter, and especially during poor weather conditions, double or triple the two-second rule. • Make sure you know how to use your braking system in all weather and road conditions. Braking on an icy or snow-covered bend is extremely dangerous. The centrifugal force will continue to pull you outwards and the wheels will not grip very well. <p style="text-align: center;">SNOW and ICE</p> <ul style="list-style-type: none"> • Stay alert, slow down and stay in control • Pay attention to the road surface. If it looks slippery, it probably is. Drivers tend to overestimate the traction on slippery roads. • Test the traction. As soon as you pull out of your driveway, give your brakes a sharp stab and the steering wheel a yank to assess traction. All-Wheel-Drive or stability control will fool the inattentive into thinking the roads are better than they truly are. Resample the traction regularly. • Snow on a road may be hard-packed and slippery as ice. It can also be rutted and full of hard tracks and gullies. Or it can be smooth and soft. Wet snow can make for slushy roads. Heavy slush can build up in the wheel wells of your vehicle and can affect your ability to steer. • Look far ahead as you drive, so you can recognize hazards and have plenty of time to respond. Be alert for potential driving hazards including downed branches, trees, electric lines and icy areas, such as shady spots and bridges. • Conditions such as frost and ice may not affect an area in a uniform manner - isolated patches and certain gradients remain iced up when other parts have thawed out. The good driver should be on the look out for these areas. • Adjust your driving to the road and weather conditions. Slow down and avoid sudden turns of the steering wheel, and sudden braking and accelerating which could cause a skid.
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<p style="text-align: center;">On The Road</p> <p style="text-align: center;">Stay alert, slow down and stay in control</p>	<p>Unsafe conditions</p>	<ul style="list-style-type: none">• Be careful when approaching shaded areas, bridges, and overpasses, as these sections of road freeze much sooner in cold weather and stay frozen long after the sun has risen. Watch out for black ice, areas of the road that appear black and shiny, as they can cause your vehicle to suddenly lose traction. Slow down, keep your foot off the brake, and be ready to shift to neutral or step on the clutch as your vehicle crosses these areas.• In winter driving conditions, it takes all vehicles longer to stop on snow-covered roads.• Always reduce your speed smoothly and in plenty of time on slippery surfaces. Avoid harsh braking and acceleration, or coarse steering.• Slow down in plenty of time for bends and corners. Black ice, caused when rain freezes on the road surface, will make your steering feel light. Respond by easing off the accelerator and being delicate with your steering movements.• To brake on ice and snow without locking your wheels, get into a low gear earlier than normal, allow your speed to fall and use your brakes gently.• In icy conditions, increase the gap between you and the vehicle in front. You may need to allow up to TEN TIMES the normal distance for braking.• Stay in the plowed lane; avoid driving over the ridges between the plowed areas. If you must switch lanes, slow down, signal and move over slowly.• Don't pass a snowplow or spreader unless it is absolutely necessary.• Don't park along the street. Snowplow drivers can't fully clear a road if cars are in their way.• On snow-covered highways, large trucks and buses can raise or blow snow onto your windshield leading to a sudden loss of visibility. Always drive defensively and leave enough space to avoid their snow spray.• Skidding can generally be avoided through good observation and anticipation - and smooth use of the vehicle's controls. Your risk of skidding increases if your tires do not have adequate tire depth.• The first requirement in all skids, is to identify and remove the cause, whether it was too much speed for the circumstances, harsh braking or acceleration, or coarse steering. The appropriate response after doing this will then depend upon the type of skid and whether your
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<p style="text-align: center;">On The Road</p> <p style="text-align: center;">Stay alert, slow down and stay in control</p>	<p>Unsafe conditions</p>	<p>vehicle is front wheel, rear wheel or 4-wheel drive.</p> <ul style="list-style-type: none"> • It is better to avoid skidding rather than hope you can control a skid when it happens. Such a hope is rarely realised. • Don't park along the street. Snowplow drivers can't fully clear a road if cars are in their way. • Intersections tend to be icy because the cars stopping and starting pack and polish the snow. • Do not be a target that sits in the middle of the intersection waiting for someone to slide into you. Be sure the intersection is clear, then get through it as quickly as safety and control permits. • Bridges and underpasses are hazardous areas. Snow and ice stay on the road longer in shaded areas. Try to be the only car on a (potentially) frozen bridge. • Snow and ice chunks fall off the wheel wells or roofs of vehicles. Often they are very hard. However, hitting even a soft one with your wheels may cause you to lose control of the vehicle, sending you into opposing traffic or off the road. <p style="text-align: center;">FOG</p> <ul style="list-style-type: none"> • Switch on headlights and fog lamps if visibility is reduced. The high beam can produce white-out effect in fog, so use the low beams. • If you can see the vehicles to your rear, the drivers behind will be able to see you - switch off your rear fog lamps to avoid dazzling them. Think of them as rear main beams! • Use the demister and windscreen wipers. Remember that fog also makes the road wet and slippery. • Do not 'hang on' to the rear lights of the car in front as you will be too close to be able to brake safely. • Switch off distracting noise and open the window slightly so that you can listen for other traffic, especially at crossroads and junctions. • Beware of speeding up immediately visibility improves slightly. In patchy fog you could find yourself 'driving blind' again only moments later. Always imagine that there is a broken down vehicle just on the other side of the fog bank. Could you stop in the distance you can see to be clear?
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<p style="text-align: center;">On The Road</p> <p style="text-align: center;">Stay alert, slow down and stay in control</p>	<p>Unsafe conditions</p>	<p style="text-align: center;">WINTER and SPRING SUN</p> <ul style="list-style-type: none"> • Winter and spring sunlight can present drivers with an unexpected hazard. The angle of the sun in the sky will frequently be too low for your visor to be able to help. If you are blinded by glare, reduce your speed. • Reduce the effect of glare by keeping both the inside and outside of your windshield clean and grease free. • Dark glasses (or prescription glasses if you are short-sighted) are suitable for combating glare, but should be removed whenever the sun goes down. They should not be worn in duller weather or at night as they seriously reduce the ability to see.
<p>When the unwelcome happens.</p> <p style="text-align: center;">Know what to do if it happens to you!</p>	<p>There may be times when being alert and prepared, slowing down, and staying in control aren't enough and accidents happen.</p>	<ul style="list-style-type: none"> • If you get stuck or stranded, don't panic. Stay with your vehicle for safety and warmth. Wait for help to arrive. If you are in an area with cell phone service and have a cell phone, call for help. • Be careful if you have to get out of your vehicle when on the shoulder of a busy road. If possible, use the door away from traffic. • If you attempt to free your vehicle from the snow, be careful. Dress warmly, shovel slowly and do not overexert yourself. Do not attempt to shovel or push your vehicle if you have a medical condition. Body heat is retained when clothing is kept dry. Wet clothing, due to the weather or perspiration, can lead to a dangerous loss of body heat. • Draw attention to your vehicle. Use emergency flashers, flares or a Call Police sign. • Run your motor sparingly. Be careful of exhaust fumes. For fresh air, slightly open a window away from the wind. • You may have to exit your vehicle occasionally to make sure the exhaust pipe is clear of drifting snow before running the engine.
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