

ROAD SAFETY AROUND ROADWORKS

*How to drive safely around roadworks and
how to be safe whilst working on the road.*

Building mutual respect and responsibility.

**CONTAINS LIFESAVING DIGITAL
ANIMATIONS AND VIDEOS**



Document updated September, 2021





Introduction

Road work sites are an area where the risk of accidents and death is increased due to many reasons. These accidents can be attributed to both drivers and road workers and in many cases it has contributed to a blame game.

This ebook is one element of the Northern Territory Government's Department of Infrastructure, Planning and Logistics (DIPL) education campaign to improve road safety and awareness at traffic management locations.

A driving through road work sites 'module' will be added to the DriveAbout app.

The DriveAbout team worked with renowned industry expert Dr Dan Sullivan of 'Solutions in Transport' and produced two powerful resources modules:

-  **1** Road user facing: *How to Drive Safely Around Roadworks; and*
-  **2** Road worker facing: *How to be Safe Working on the Road*

These resources are focussed at creating easy to remember messages for drivers and road workers highlighting a selection of the highest known risks at road work sites. The aim is that by remembering and applying the lessons in these modules drivers and road workers will be able to minimise the risks of a crashes and incidents.

The production process involved a research review to choose the key risks as identified by CARRSQ, Austroads, TMAA and other industry bodies as well as leveraging Dr Sullivan's expertise and experience.

This ebook details the modules and presents 15 videos and posters that aim to foster mutual understanding and respect between drivers and road workers. It is vital that both groups understand their responsibilities and work together to minimise the risks of crashes and incidents around roadworks.

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ROAD SAFETY AROUND ROADWORKS

HOW TO DRIVE SAFELY AROUND ROADWORKS

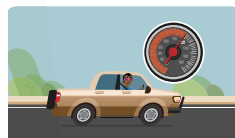
WATCH FOR THE SIGNS



7 THINGS TO DO TO SAVE LIVES



Watch for the signs



Slow down



Maintain a safe distance



Expect the unexpected



Merge early



Stay Alert

www.roadsafety.nt.gov.au



Take care in poor weather and after dark



🎯 TOPIC ONE: WATCH FOR THE SIGNS

Premise

Signs are the main way road workers use to warn you about road work sites on the road ahead. These signs are placed there for your safety, and for the safety of road workers, so it's important to *look for and obey them*.

Main Point

When you're approaching a road works site, there are *two types of signs to look for*. Firstly, the *orange signs* - these show either a worker shovelling a pile of dirt or a traffic controller holding a stop/slow bat. These signs warn you there are road workers located very close to the road's edge and that you need to be alert and look out for them.

The second type of sign you'll see are *roadworks ahead signs*. These are yellow warning signs that signal to you as a driver there is something unusual happening on the road ahead and you need to respond by changing the way you're driving.

Roadworks often cause a *change in the condition of the road*, making it different from what you're used to. This can be a hazard to both you and road workers - which is why it's vital to look for these signs and react, slow down, and *drive more carefully as you approach the road work site*. If you don't watch for, and obey, these signs, it increases the risk you won't react in time. It also means you will be more likely to have a crash.

Example

There was a case on a motorway where a driver ignored all the advance signs and the big flashing lights on the trucks and other vehicles that were parked along the road. He kept driving in a lane *even after he'd been told he needed to move out of it*. He then came up very quickly behind a truck that was stopped at the side of the road. The yellow flashing lights were on, all the other devices were there, but the driver was unable to stop in time. So, the driver made a choice to swerve in order to miss the truck and drive along the shoulder of the road.

Unfortunately, there was a road worker there, picking up signs and cones at the end of a shift. The road worker was hit by the vehicle and severely injured. This was a case where a driver had ample opportunity to change their driving and to be aware, alert and look for hazards along the road. And in this case, there were permanent injuries caused to the road worker at the road work site.

Conclusion

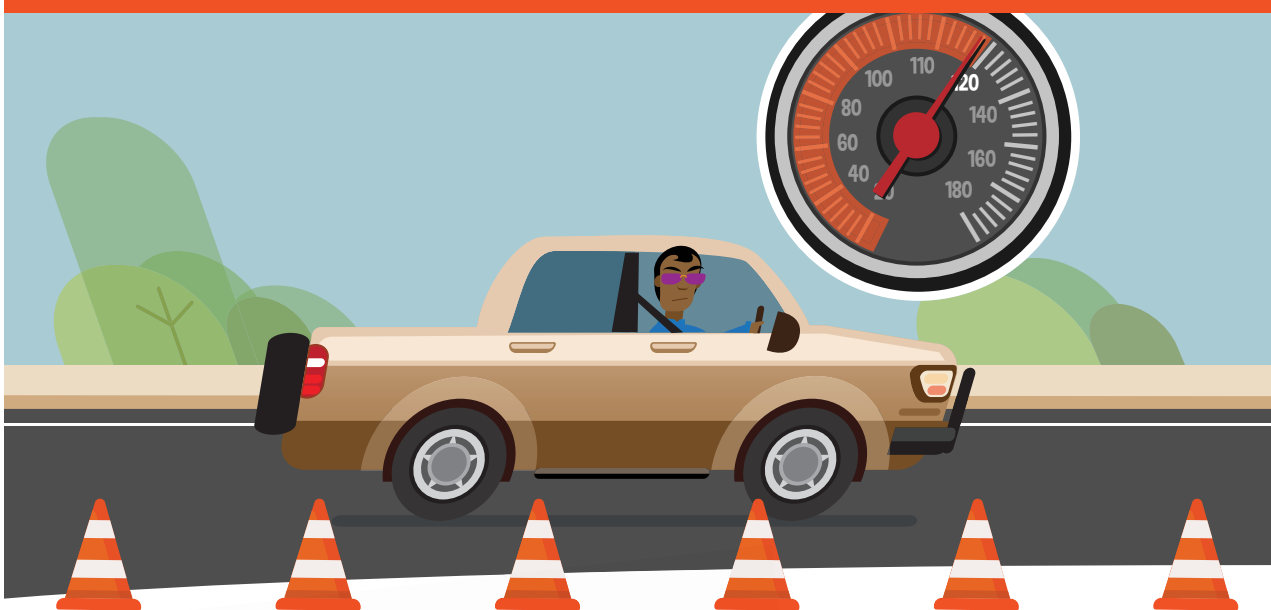
So, the key things to consider when you see these signs are: *Be alert*. Keep a *really good look out for what's going on ahead*. Look for anything unusual and the best way to react is to *slow down*. Start looking for all the signs and for road workers, who will all be wearing bright coloured vests. Be aware of machinery too, which will have yellow flashing lights on it. Slow down and *get ready to react*.



ROAD SAFETY AROUND ROADWORKS

HOW TO DRIVE SAFELY AROUND ROADWORKS

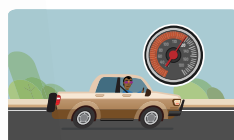
SLOW DOWN



7 THINGS TO DO TO SAVE LIVES



Watch for the signs



Slow down



Maintain a safe distance



Expect the unexpected



Merge early



Stay Alert

www.roadsafety.nt.gov.au



Take care in poor weather and after dark



▶ TOPIC TWO: SLOW DOWN

Premise

Speed is one of the primary causes of accidents on the road, and this is the case particularly at road work sites. This is why you'll see additional speed limit signs at road work sites. It's **important you obey these speed limits**, even though it may not be immediately obvious why the speed limit is in place.

Main Point

The reasons for these speed limits are usually because there is a rough surface, a change of alignment on the road, or workers are located close to the road. It is important for your safety, and for the safety of the workers, that you slow down and obey these speed limits. As soon as you see the roadwork signs, prepare to **reduce your speed**. As soon as you see a speed limit sign, it's important you slow down to match that speed limit while you are traveling through the road work site. There will be other speed limit signs as you go through the road work site and signs at the end to **tell you when you can go back to the normal speed** on the road.

Unfortunately, many drivers see the roadwork signs, but just keep going until they see a reason to slow down. Unfortunately, once they see the reason, it's often too late to take action.



Example

One of the most common crashes at road work sites is vehicles running into the back of a queue of other vehicles stopped by a traffic controller. Picture a traffic controller standing at a road works site with a stop/slow bat. They're stopping traffic so the works can occur and the traffic in the opposite direction can move through safely. There is a queue of vehicles, and then a vehicle approaches the rear of the queue at high speed and is unable to stop. There have been numerous crashes with vehicles running into the end of a queue of vehicles, resulting in the injury or death to people in other vehicles. Another common scenario involves drivers who have decided to avoid the queue, and then swerved onto the opposite side of the road, crashing into oncoming traffic.

Among the primary concerns in the traffic management industry is the safety of traffic controllers. The traffic controller, standing with the stop/slow bat, is probably one of the most dangerous positions for any worker. Traffic controllers must complete special training to perform their job. And there are special rules to follow, such as how long they can work for, what to watch out for, and how they do the job.

Traffic controllers also have an escape path which is defined for them, but when a vehicle comes down the shoulder of the road at high speed after dodging a queue, it can leave very little time to escape, resulting in unnecessary deaths and injuries to traffic controllers.

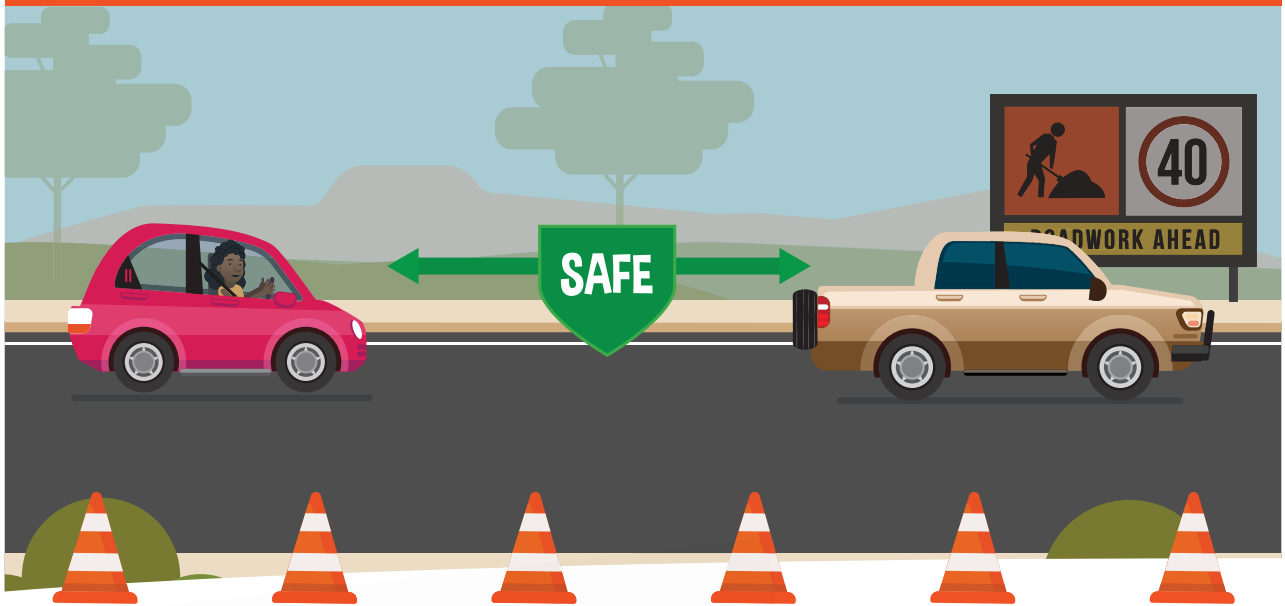
Conclusion

It is critical **when you see the speed limit signs**, no matter how silly those speed limits might seem to you, or how much lower they are from the normal speed you see on the road, that you **immediately drop your speed** and **follow the speed limits** right through the roadworks until you're told the road work site has ended and it is safe to speed up again.

ROAD SAFETY AROUND ROADWORKS

HOW TO DRIVE SAFELY AROUND ROADWORKS

MAINTAIN A SAFE DISTANCE



7 THINGS TO DO TO SAVE LIVES



Watch for the signs



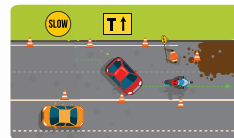
Slow down



Maintain a safe distance



Expect the unexpected



Merge early



Stay Alert

www.roadsafety.nt.gov.au



Take care in poor weather and after dark



🎯 TOPIC THREE: MAINTAIN A SAFE DISTANCE

Premise

When you're driving through a road work site, it is important you ***maintain a safe distance*** between you and the vehicle in front of you. If your following distance is not long enough, ***you may not have enough time to see hazards*** on the road or road workers standing near the road. Equally, there may be insufficient time to take the action needed to navigate curves, bends or around other things on the road.

Main Point

If you are too close to the vehicle in front, ***you may not see all the signs in time to read them correctly***. You need to leave about ***two seconds of travel time*** between you and the vehicle in front of you. This can be calculated by counting it out as you're driving. Check when the vehicle in front passes a certain sign, a cone, a tree or something on the side of the road, and then count two seconds as you're driving. The distance created between you and the vehicle in front is considered a safe driving distance. If there is less than two seconds until you pass that same object, you're driving too close. If it's more than two seconds, then you're safe.

Example

There are often many hazards at road work sites, like a large hole in the road, as well as changes made to road alignment. If you're too close, you may not have enough time to react and as a result, you could end up damaging your vehicle or even having a crash.

Consider what's required if you need to swerve at a slight curve. Again, if you're too close, you may not see the curve until you're too close to it. Or there could be a road worker standing right next to the edge of the lane, and if you've moved over too far, you could clip or injure that worker before you even realise they are there.

Conclusion

It's vitally important you ***maintain a safe distance*** between you and the vehicle in front of you. That will give you enough time to see all the devices and observe all the signs that are laid out along the road. It will also allow you to react in good time and keep driving safely through the road work site.

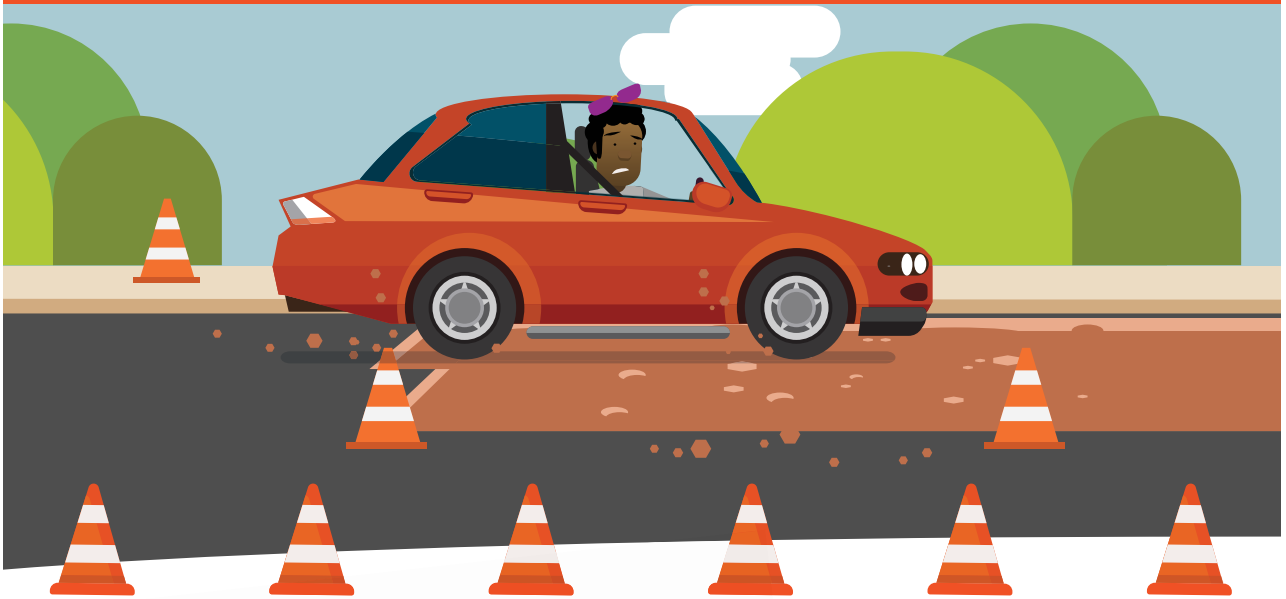
Remember, keeping a safe following distance is one of the primary ways to ensure you're ***aware of everything going on*** while driving so you can take the appropriate actions ***to protect you and road workers***.



ROAD SAFETY AROUND ROADWORKS

HOW TO DRIVE SAFELY AROUND ROADWORKS

EXPECT THE UNEXPECTED



7 THINGS TO DO TO SAVE LIVES



Watch for the signs



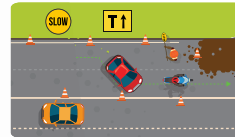
Slow down



Maintain a safe distance



Expect the unexpected



Merge early



Stay Alert

www.roadsafety.nt.gov.au



Take care in poor weather and after dark



🎯 TOPIC FOUR: EXPECT THE UNEXPECTED

Premise

One of the key things to recognise about roadworks is they lead to ***changes in normal conditions on the road***. You may be very familiar with a certain piece of road, but during roadworks, it's vital you're prepared ***to expect the unexpected***.

Main Point

Be aware there will be changes to ***how*** you drive through a road work site. To start with, there will be ***changes to the speed*** and there could also be additional things to look out for. You may have to ***stop where you don't normally have to stop***. You might have to follow a path which leads you onto the wrong side of the road or follow ***a temporary road or a detour*** through other streets. There could be a rough surface, or a different surface, like gravel on the road. There might be a line of cones where normally you need to turn at an intersection.

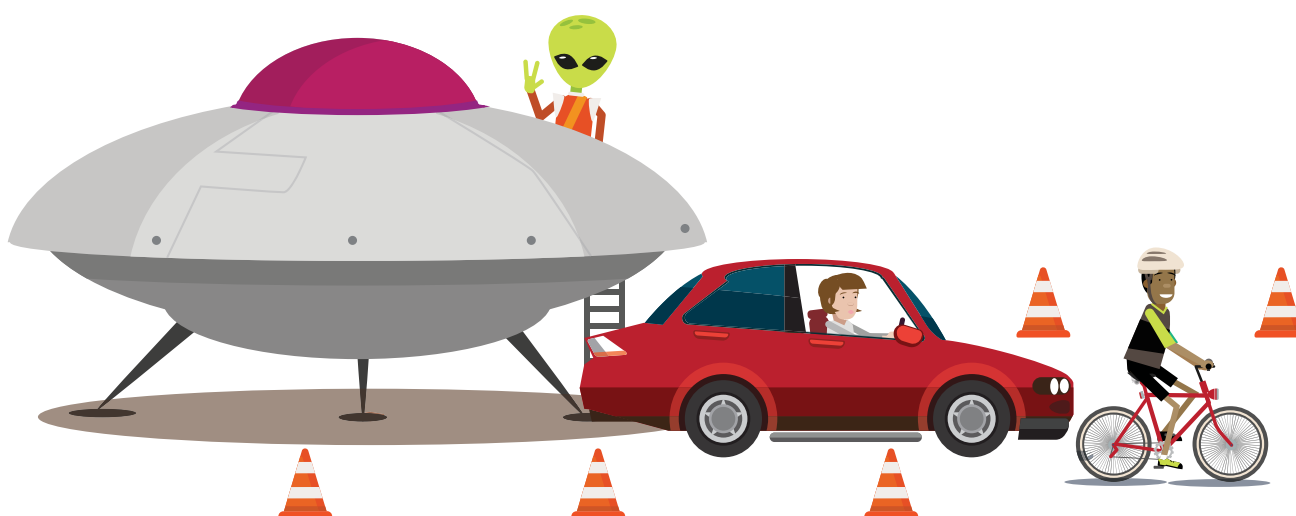
All of these changes can be unexpected and they mean you need to ***adapt your driving to the conditions*** at that particular road work site. You need to be alert and aware you may not be able to follow the path or lane you usually follow. For example, you may not be able to turn at the intersection you always use. So be aware that with these unexpected items on the road, there's an increased chance of a driver having an accident.

Example

There was one particularly bad accident that occurred on a motorway where a motorcyclist was riding along and didn't know the road ahead was closed for roadworks. The road workers had created a temporary path across the median onto the opposite side of the road and turned two lanes of traffic into one lane in each direction. The motorcyclist was unaware of this and kept driving along, following what was thought to be the normal lane. As a consequence, the rider missed the curve where they were supposed to turn, crashed into a safety barrier, and was finally thrown off the motorcycle. Unfortunately, it resulted in the rider being killed as they hit other objects on the road work site.

Conclusion

Things can be very different on roads where roadworks are underway, and it's easy to ignore these changes and continue driving the way you do usually. ***At road work sites you must continually look out for something different***. Don't expect to drive the same way you always drive. ***Look out for the unexpected and adapt your driving to keep you, other drivers, and road workers safe***.



ROAD SAFETY AROUND ROADWORKS

HOW TO DRIVE SAFELY AROUND ROADWORKS

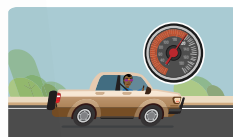
MERGE EARLY



7 THINGS TO DO TO SAVE LIVES



Watch for the signs



Slow down



Maintain a safe distance



Expect the unexpected



Merge early



Stay Alert

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Take care in poor weather and after dark



🎯 TOPIC FIVE: MERGE EARLY

Premise

Roadworks are typically being undertaken to improve the road or other vital infrastructure. Ultimately, these improvements to the road are for the benefit of all drivers, so it's important you *remain calm, patient, and respectful*.

Main Point

It can be frustrating to be slowed down at roadworks, and it can be frustrating to think you're being delayed when you don't see a reason. But it's important you follow some basic rules as you drive through a road work site.

There will be signs and devices to tell you when a lane up ahead is closed. When you see these, you should start to *think about merging straight away. Match your speed* with the traffic in the lane next to you, *find a gap*, and prepare to *change lanes and merge*.

Example

If you come to a road work site and there are traffic controllers there stopping you with a stop/slow bat, follow their instructions. If you see other workers along the road work site waving at you to slow down or change lanes, follow their instructions. Understand that driving in the correct place at all times is necessary for the safety of you and all road workers. Most importantly, be patient. While it can seem an inconvenience to be delayed, often these delays aren't long.

It will be a far greater inconvenience if you crash or injure someone because of your impatience while driving through the road work site. This is why it's so important to follow all instructions on the signs. There will be signs telling you which lanes to be in, what speed to travel through the road work site, and other signs warning you of particular hazards on or along the road.

Conclusion

Follow all the instructions you are given, slow down, and most importantly, *be patient as you drive through the road work site*. A little bit of impatience can have serious consequences for you or a road worker if you cause an accident.



ROAD SAFETY AROUND ROADWORKS

HOW TO DRIVE SAFELY AROUND ROADWORKS

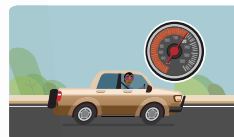
STAY ALERT



7 THINGS TO DO TO SAVE LIVES



Watch for the signs



Slow down



Maintain a safe distance



Expect the unexpected



Merge early



Stay Alert

www.roadsafety.nt.gov.au



Take care in poor weather and after dark



🎯 TOPIC SIX: STAY ALERT

Premise

When you're driving through a road works site, it's important that you **pay full attention** to all of the **signs, the devices, and to your driving**.

Main Point

There are many distractions associated with driving normally, which is why you're **not allowed to use your mobile phone**, and why you should **take great care when handling devices or doing other activities while driving**.

But there are **other distractions** as well. There might be **people** along the side of the road. There could be **signs**. There may be shops you're looking for, as well as the roadwork signs and regular street signs.

It is really important **to minimise the distractions** while driving. One of the main causes of crashes, both on the road generally and at road work sites, is people who are distracted by passengers in the car. Using devices that shouldn't be used while driving and not **paying full attention to the road** are other major causes of accidents.

Example

Road work sites introduce something different to the normal use of a road. Typically, this means more signs and hazards for road users to observe.



For example, when there are lots of people next to the road, the consequence of being distracted for even one second can be fatal, so it's critical you pay attention while driving.

There was a crash at one road work site where a driver was traveling along the road, not paying much attention to the signs and changed road conditions. The driver passed the warning signs indicating roadworks ahead, but the driver was more concerned about tuning into the correct radio station. While playing with the dial, the driver took their eyes off the road for a critical number of seconds. During those few seconds, the driver failed to notice a traffic controller standing on the road instructing drivers to stop because they were approaching the rear of a very large piece of machinery too quickly.

When the driver finally looked up, it was too late to stop in time. The vehicle hit and killed the traffic controller. The driver also hit a large piece of machinery, causing serious personal injuries and extensive damage to the vehicle. All this occurred because the driver was distracted by the radio while driving through a road work site.

Conclusion

Road work sites have many things going on. There will be large machinery driving along next to the road. There might be trucks dropping off materials. There will be cranes and workers close to the road. To reduce the chance of accidents at road work sites, it is vitally important **drivers stay alert at all times** and keep their **focus on the road** even more than normal.

ROAD SAFETY AROUND ROADWORKS

HOW TO DRIVE SAFELY AROUND ROADWORKS

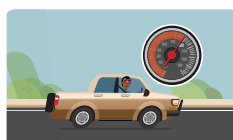
TAKE CARE IN POOR WEATHER AND AFTER DARK



7 THINGS TO DO TO SAVE LIVES



Watch for the signs



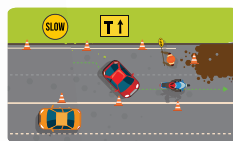
Slow down



Maintain a safe distance



Expect the unexpected



Merge early



Stay Alert

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Take care in poor weather and after dark



🎯 TOPIC SEVEN: TAKE CARE IN POOR WEATHER AND AFTER DARK

Premise

When driving in poor weather conditions or after dark, ***you need to pay more attention*** to how you're driving on the road. In these conditions, it might be more ***difficult to see the signs*** at the side of the road, the ***people*** up ahead, or even the exact ***path*** to follow. This is even more critical at road work sites.

Main Point

Many ***roadworks are undertaken at night*** now due to the amount of traffic on the road during the day, and a desire to minimise the impact of roadworks on regular traffic. Unfortunately, night roadworks mean it can be ***difficult for drivers to see*** what is happening ahead. At many road work sites there will be flashing lights, and although signs should be reflective so they can be seen in vehicle headlights, in these conditions, it can be ***far more difficult to see the exact layout ahead***, which path to follow, where you should drive, and where the road workers are.

Example

It's vitally important in poor weather conditions to alter your driving to allow safe travel through the road work site. An example of the impact of poor conditions on driving involved a crash that occurred at a road work site after hours when no workers were present. The driver, who was traveling in the dark and in wet weather conditions, failed to reduce speed and drive more carefully to negotiate the road work site safely. Now, at this particular road work site, the road surface was being replaced and the temporary surface was dirt and gravel, which can become very slippery in wet conditions.

As the driver travelled through the road work site, one of their wheels hit a patch of mud causing the vehicle to slide. The vehicle spun and landed in a ditch at the side of the road. Perhaps the worst outcome was the driver bogged the vehicle and couldn't get it out. Imagine what could have happened in that situation if there were workers along the road with a vehicle spinning out of control and sliding off the road. Any of those workers could have been in danger. Also consider the risks if there were large pieces of machinery along the road, or if there was a sharp drop off at the edge of the road. The driver and their passenger would also have been in serious danger. So, when driving in wet conditions, and when driving at night, always pay extra attention. Slow down that little bit more and keep a careful lookout for things that might cause a danger to you or road workers.

Conclusion

In poor weather conditions ***visibility is severely reduced***, making it very difficult to react quickly if you need to change lanes or avoid hitting a worker or machinery. In wet weather and after dark, or any conditions where visibility is reduced, ***adapt your driving*** and ***look out for safety devices***. Slow down enough so you can ***respond safely*** to any hazard that is on the road.



ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

CONTINUALLY EDUCATE YOURSELF

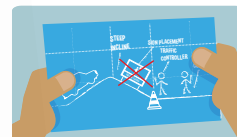


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8 THINGS TO DO TO SAVE LIVES



Continually educate yourself



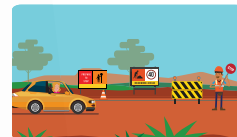
Understand the importance of planning



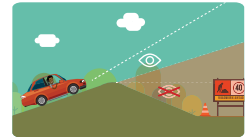
Know the common types of crashes



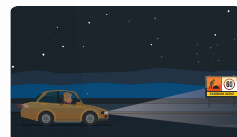
Understand the different risks with highways and urban



Understand the approach area risk



Understand risks with hilly and curvy roads



Understand the risks with time of day



Avoid complacency



🎯 TOPIC ONE: CONTINUALLY EDUCATE YOURSELF

Premise

Being a road worker is one of the **highest risk occupations** in the country - rivalling occupations such as deep-sea fishing and mining in terms of the chances a worker can be injured or killed at a road work site. It is therefore critical that every road worker undertakes the **necessary education and obtains relevant qualifications** to understand their role and how to perform it safely.

Main Point

Across Australia, there are **defined training courses** for everyone working on or near a road. This includes courses for the **traffic controller** – that's the person who holds the stop/slow bat or operates new equipment like a temporary traffic signal or portable boom barrier. These people have the training that provides instruction on how to undertake each task, including how to perform it safely, observe traffic, and to ensure the traffic doesn't become a danger with long queues that might cause other accidents. It's important the traffic controller understands the importance of their role. While I could hold of a stop/slow bat, I can't just perform that role without the appropriate training. It is also critical trained workers complete **regular refresher training** and learn the latest **best practice**.

There is also training for implementing the signs and devices. This is known as '**implementing** the traffic guidance scheme,' which is the diagram showing all the signs and devices. There are ways these devices need to be laid out, that is, they must be assembled in the correct order, both for the **safety of workers and the public**.

Example

A particularly bad example I once saw was a road worker picking up a line of cones but walking with their back to traffic as they did so and opening up the traffic lane behind them. The training covers aspects of implementation, like the safe way to put out a sign, the safe way to look after it, and the safe way to remove it. It's important when you're working on the road to know and observe the correct procedure.

It's also essential you know what is not permitted. In the past, many workers felt they could simply draw up a little sketch - a mud map, if you like - of how the signs and devices should be assembled, or to just copy the diagram they'd used on another road work site. Unfortunately, there are consequences with this approach that increase the risks and danger to workers and others.

Conclusion

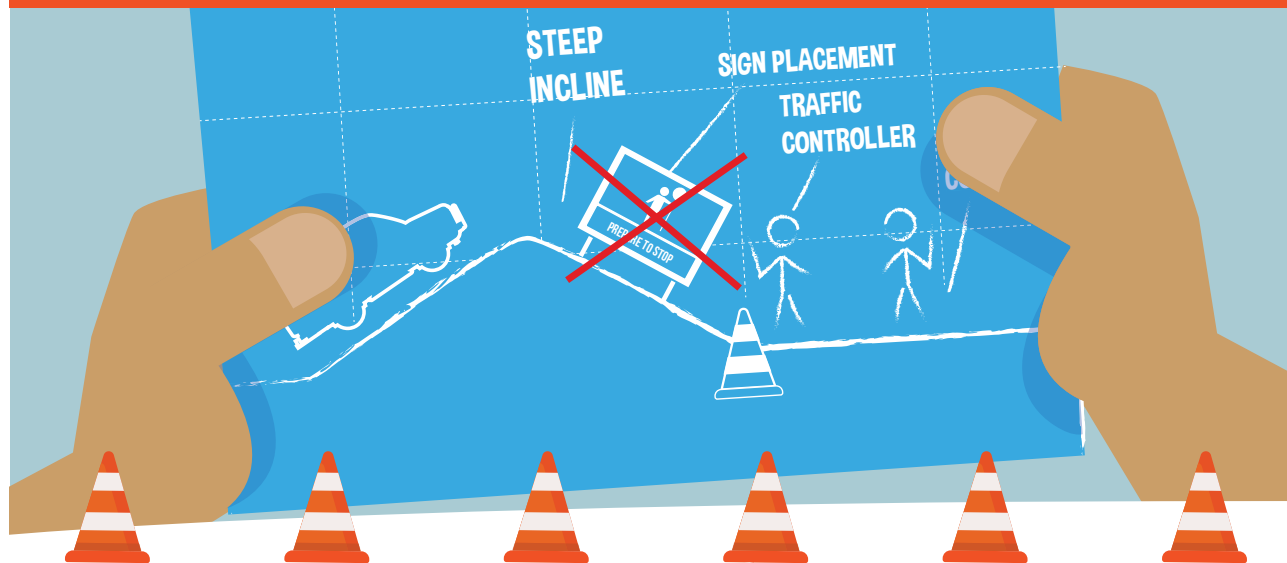
Education is one of the **most important elements** to keeping safe at a road works site. Most states and territories across Australia, and most local governments require this **training as a compulsory** element for any worker employed to work on or near the road. You should undertake the education and look at what other activities are needed to **stay up to date with the latest practices** for your role.



ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

UNDERSTAND THE IMPORTANCE OF PLANNING



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8 THINGS TO DO TO SAVE LIVES



<p>Continually educate yourself</p>	<p>Understand the importance of planning</p>	<p>Know the common types of crashes</p>
<p>Understand the different risks with highways and urban</p>	<p>Understand the approach area risk</p>	<p>Understand risks with hilly and curvy roads</p>
<p>ANDROID APP ON Google play</p>	<p>Understand the risks with time of day</p>	<p>Avoid complacency</p>

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▶ TOPIC TWO: UNDERSTAND THE IMPORTANCE OF PLANNING

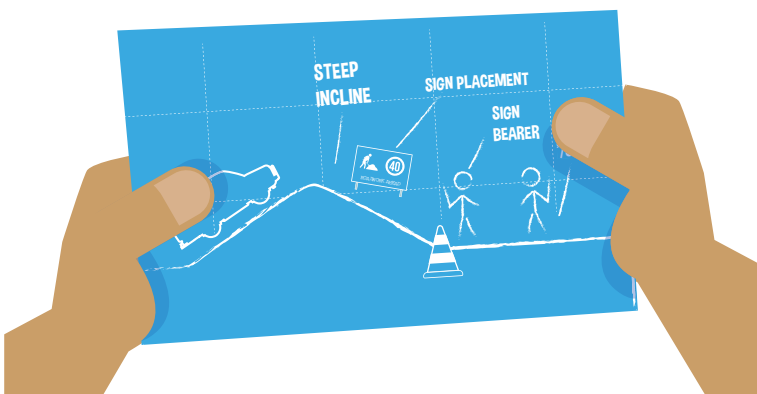
Premise

Planning is a **critical tool** for creating a safe road work site. While you might undertake the same task every day, what you'll find is no two road work sites are the same. Each road work site will have its own little **differences**, and these differences can be critical to undertaking the job safely.

Main Point

Filling a pothole on a road in a quiet residential street will **be very different** to filling a similar pothole out on the highway with road trains traveling at high speeds. It is critical you **undertake the necessary planning** and understand what is different about each road work site, so you can create a safe road work site. This is required for **every road work site**, no matter how short your visit, or how familiar you are with all the tasks you perform.

You need to assess the **different risks at each road work site**. What **type of vehicles** are driving on the road? What **speed** are they travelling at? Are there certain **times of day** when it would be better not to visit a road work site? For example, trying to do roadworks outside a school during pickup time will be dangerous for everyone - the children, the parents, and the road workers. Best practice in planning for road work sites is that it should be done for **every piece of work** you undertake.



Example

A very experienced traffic management crew was working with a team that was re-asphalting the road. At the start of the day's work, they would receive a set of plans for each road work site they were visiting. On this particular day, they were assigned to a site which no one had planned for. As a result, they hadn't thought about the risks, and in the rush to keep working, the people on the road work site instructed the traffic management crew to "Just draw up a sketch or copy the last one." And that's what they did.

This particular road work site was located just over a crest at a bridge that spanned a railway line. The traffic controller set up the road work site with the signs on one side, but unfortunately took up a position on the worksite just over the crest of the bridge – out of sight from oncoming traffic. A driver approached the crest on the bridge but didn't slow down because they couldn't see any roadworks. Tragically, the vehicle hit and killed the traffic controller standing in the middle of the lane.

In this particular case, when an investigation was undertaken, the biggest criticism was not of the driver or the worker. It was for the lack of planning at the road work site. A critical difference at this road work site was the crest in the road. Had the team prepared for the road work site as they did in other locations, it is likely the outcome would have been vastly different.

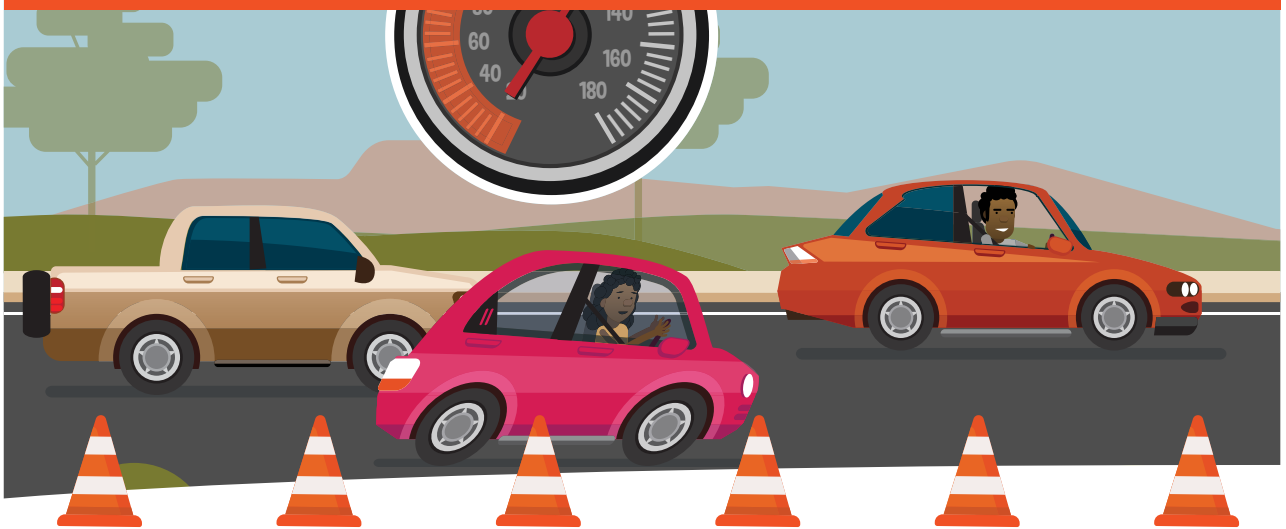
Conclusion

It is critical **adequate planning** is undertaken for **every piece of work**.

ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

KNOW THE COMMON TYPES OF CRASHES

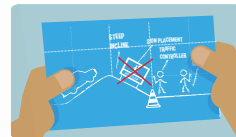


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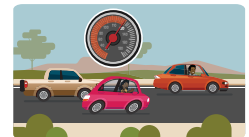
8 THINGS TO DO TO SAVE LIVES



Continually educate yourself



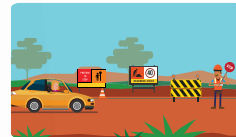
Understand the importance of planning



Know the common types of crashes



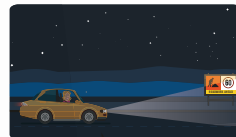
Understand the different risks with highways and urban



Understand the approach area risk



Understand risks with hilly and curvy roads



Understand the risks with time of day



Avoid complacency



▶ TOPIC THREE: KNOW THE COMMON TYPES OF CRASHES

Premise

By understanding the common types of crashes - risk avoidance can be incorporated into planning for the road work site. Experienced personnel who have worked on road work sites for a period of time, recognise there are common types of crashes that occur at road work sites.

Main Point

When road workers understand the common type of crashes they have a better understanding of the **critical risks** to themselves and other workers at the road work site. This leads to greater awareness and allows for experiences to be **incorporated into planning** and in the completion of work duties.

Example

The most common type of crash is caused by vehicles that don't slow down enough on the approach to a road work site. By approaching too quickly, they are at a greater risk of running into other vehicles that have stopped or slowed down as they approach and drive through the road work site. There's also a risk of them running into workers at the entry to the road work site, and barriers or machinery.

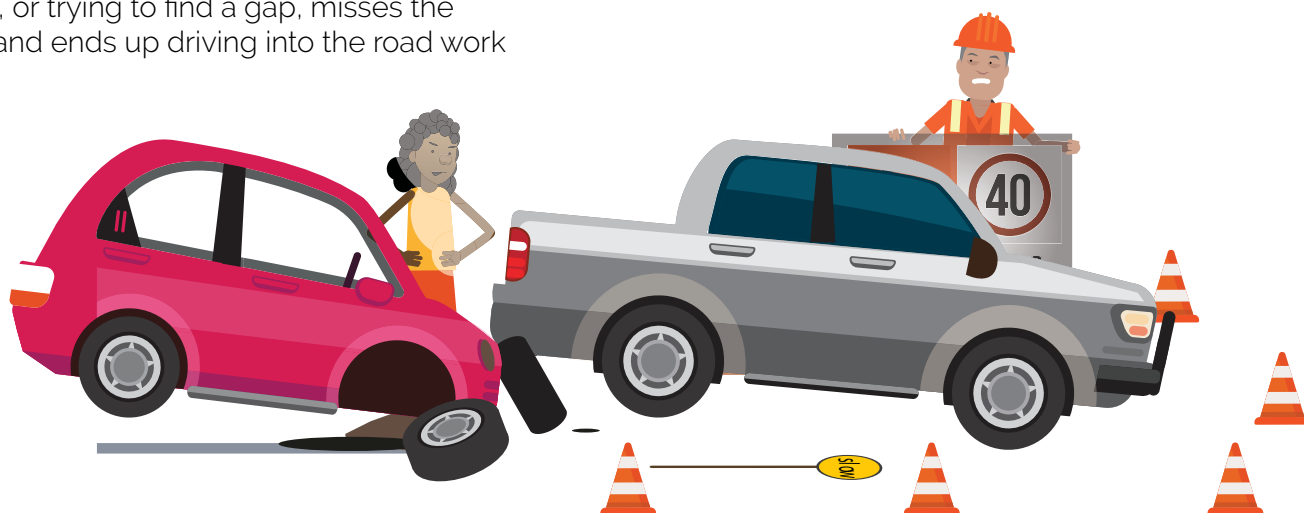
Another common type of crash is when vehicles are told to merge, change lanes, or change their path. Tight curves or a tight merge can lead to situations where a driver attempting to travel through an area too quickly, or trying to find a gap, misses the cones and ends up driving into the road work site.

Tight curves at road work sites and changes of alignment are also a major risk. This means you must be aware because there's a greater likelihood a driver will drive off the road at these points. It's important to be aware a rough or slippery surface, like gravel and mud, can also be a hazard for drivers and workers. While all drivers have difficulty with slippery surfaces, motorcyclists have particular difficulty because they're travelling on two wheels instead of four.

You must understand and look out for all common types of crashes that can occur at a road work site. One of the most important things you can do at any road work site is keep a list of the near misses that occur. This is because for every near miss, there's a chance it could have been a crash. It's also an indication that it's a dangerous place to be working. Further investigation can reveal why these near misses are happening. For example, if you see drivers approaching the end of a queue who need to brake heavily or skid as they approach, it's a sign of a high-risk location for accidents.

Conclusion

Road workers should think about the road work site from the **perspective of the driver**. Where are they most likely to be **surprised**? Where might they be likely to **lose control**? By understanding these things, you can **plan** the safest locations to position workers, thereby **minimizing the risk** of them being involved in a crash.



ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

UNDERSTAND THE DIFFERENT RISKS WITH HIGHWAYS AND URBAN ROADS

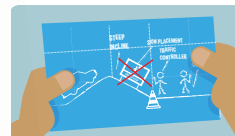


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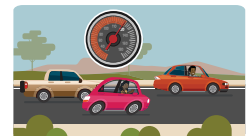
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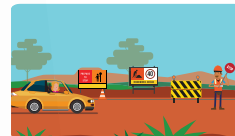
Understand the importance of planning



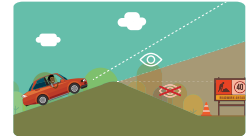
Know the common types of crashes



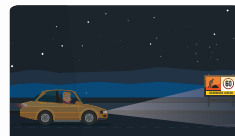
Understand the different risks with highways and urban



Understand the approach area risk



Understand risks with hilly and curvy roads



Understand the risks with time of day



Avoid complacency



▶ TOPIC FOUR: UNDERSTAND THE DIFFERENT RISKS WITH HIGHWAYS AND URBAN ROADS

Premise

It's important for workers to understand the *different types of roads* they might be working on because there are *different risks* associated with each of them. Consideration must also be given to the different aspects of a road when undertaking the works, and how these *risks differ between road work sites*.

Main Point

Some main risks associated with highways are the higher traffic speeds and increased volume of heavy vehicles. In urban settings, speeds may be lower, but there is a wider range of road users and more complex road work sites.

Example

At higher speeds vehicles take longer to stop. Consequently, it could be more difficult for drivers to see signs and devices which prevent them from stopping in time for a hazard on the road. Another factor is driver fatigue. After driving on a road for an extended period, a driver becomes less attentive and loses focus. This means their reaction time is longer when they see a hazard ahead. A longer reaction time means the vehicle travels much further before stopping. In as little as one or two seconds, a driver travelling at high speed can travel 50 to 60 metres.

Imagine how much damage can occur with a driver travelling that far into your road work site because of a couple of seconds of additional reaction time.

Highways tend to carry more large vehicles and trucks. These vehicles have reduced sight distance, take longer to stop, and when they hit other vehicles can continue travelling for a long time, thus causing more injury or damage. It is critical you allow for large vehicles, for high speeds, and cases where drivers may be inattentive.

On urban roads, there are different risks. The top speeds might be lower, but typically you'll be dealing with significantly more traffic. There will be buses, trucks, cars and cyclists and they're all mixed in together. The large volume means drivers may not be able to change lanes quickly and there could be an increased risk they run through a lane closure or crash with another vehicle, and then run into your road work site.

There are also significantly more distractions for drivers in urban areas, including shop signs, street signs and traffic lights, as well as roadwork signs. In these settings the increased volume of traffic and all the other distractions are additional risks to be aware of.

Conclusion

By *considering risks* and understanding the *different aspects* of these road work sites, you can make your road work site safer by *planning for each* of them in turn.



ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

UNDERSTAND THE APPROACH AREA RISK

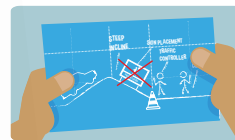


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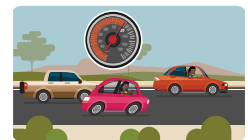
8 THINGS TO DO TO SAVE LIVES



Continually educate yourself



Understand the importance of planning



Know the common types of crashes



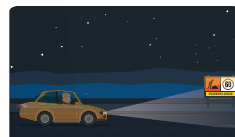
Understand the different risks with highways and urban



Understand the approach area risk



Understand risks with hilly and curvy roads



Understand the risks with time of day



Avoid complacency



🎯 TOPIC FIVE: UNDERSTAND THE APPROACH AREA RISK

Premise

One of the areas with the *highest level of risk* is the approach to a road work site. This is the area where you first start *communicating* with drivers that something is happening ahead. It's also the point at which you want the driver to start *reducing their speed*. Every driver reacts differently in this approach area. Some will reduce speed quickly, while others will take a lot longer. Unfortunately, some drivers will ignore your signs altogether.

Main Point

The approach area is where the most crashes occur and the point which presents the highest risk to workers. This is why the approach to your road work site must be planned very carefully. Drivers need to see every sign and react appropriately.

You need to plan how to attract the attention of a driver very carefully. The driver represents the biggest risk to you at your road work site so it's vital you ensure they know you are on the road, as well as how you'd like them to drive through the road work site.

Example

I've seen situations where signs have been placed in a ditch a metre below the road, or behind a tree, or in the bushes. Now, while those signs might be in the right place according to the diagram, it's not achieving the necessary safety outcomes.

One of the riskiest occupations at a road work site is the traffic controller who stands at the front of the road work site.

Typically, this is the first person the driver will see. It's also the first worker who encounters traffic. That's why the traffic controller has specific training to understand how to perform their job safely. In the approach area there are additional dangers, which is why traffic controllers should never stand in the middle of a lane unless traffic is stopped. They should always stand off the road where it is safer, and they should always have a good escape route, so they can get away from the road quickly if a vehicle is approaching them. Traffic controllers need to be especially alert and pay attention to traffic at all times - watching every vehicle that's approaching, looking for that one vehicle with a driver who is not paying attention and is travelling too fast, because that's the vehicle they need to react to.

Conclusion

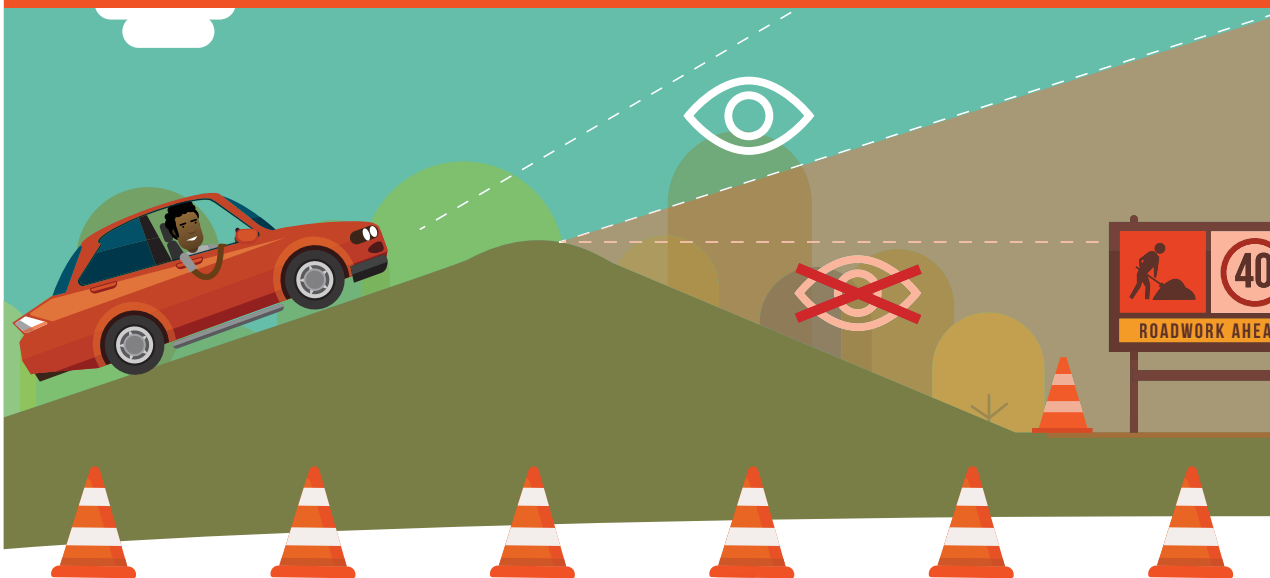
Road work sites are a lot safer if you *plan the approach area carefully*, lay it out and pay particular attention to thinking, "Have I put every device where it will *attract the attention of the driver* and get the appropriate reaction I want to occur?"



ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

UNDERSTAND RISKS WITH HILLY AND CURVY ROADS

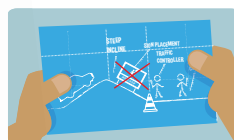


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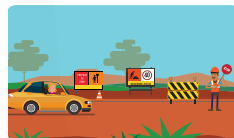
Understand the importance of planning



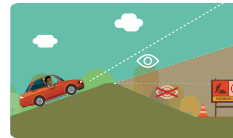
Know the common types of crashes



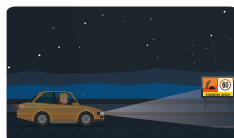
Understand the different risks with highways and urban



Understand the approach area risk



Understand risks with hilly and curvy roads



Understand the risks with time of day



Avoid complacency



🎯 TOPIC SIX: UNDERSTAND RISKS WITH HILLY AND CURVY ROADS

Premise

There are a lot of other risks that occur on site, particularly at ***hilly and curvy sections*** of road, and you need to be aware of these ***risks*** when planning and undertaking road works.

Main Point

When working at road work sites, one of the things you'll notice is that every road work site is different and accordingly, there are different risks. Unfortunately, many of the example diagrams you'll be shown will feature a nice straight flat piece of road. However, on these sections of road, the primary risks are associated with the reduced visibility between the driver and the road ahead, between the driver and road workers, or between workers and the approaching vehicles. Reduced visibility means drivers may not be able to stop in time.

Example

When a driver is travelling at 100 kilometres per hour, in just over three and a half seconds they will cover 100 metres. If this is around a tight bend, or if it's over the crest of a hill with bushes on the roadside obscuring the sight distance, a driver can travel a long way before recognising the hazard ahead. So hilly and curvy roads are areas where you need to pay particular attention to the risks.

When you're planning road work sites, consider where exactly to put all the signs and devices. Maybe you will need to put out twice as many to ensure you gain the attention of the driver. Perhaps they will need to be positioned further out. Or you may need additional devices or additional vehicles with flashing lights to gain the attention or appropriate reaction of drivers before they enter the road work site.

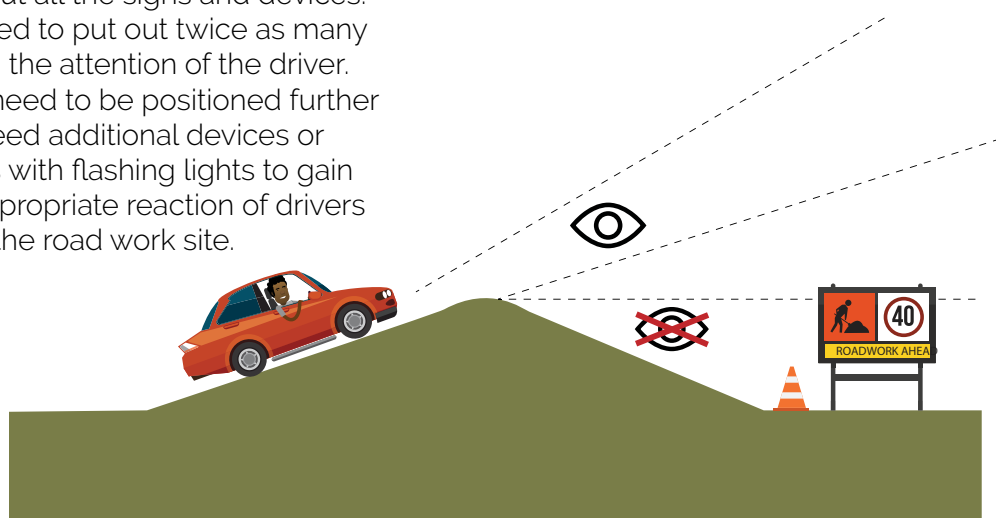
Even the simplest tasks can become quite dangerous in hilly and curvy sections of road. For a period of time I worked with a maintenance crew, and one of their very simple tasks was pulling dead animals off the road. This is a simple task which took a few seconds. But those few seconds are very different on a long, straight section of road compared to working just around a curve.

I mentioned at the start that a vehicle travelling at 100km/h travels 100 metres in just over three and a half seconds. If you're around a curve and you can't see 100 metres, three and a half seconds is not enough time for you to see that approaching vehicle, to react, and get off the road.

Conclusion

In planning your road work site, consider the ***extra protection*** needed and the type of job you're undertaking. Road work sites are always safer if visibility to all the devices and signs is increased. Exercise caution in sections where it's hilly or curvy and consider the need to measure out for yourself, *how far can I see?* Be sure to ask *is it far enough to be safe?*

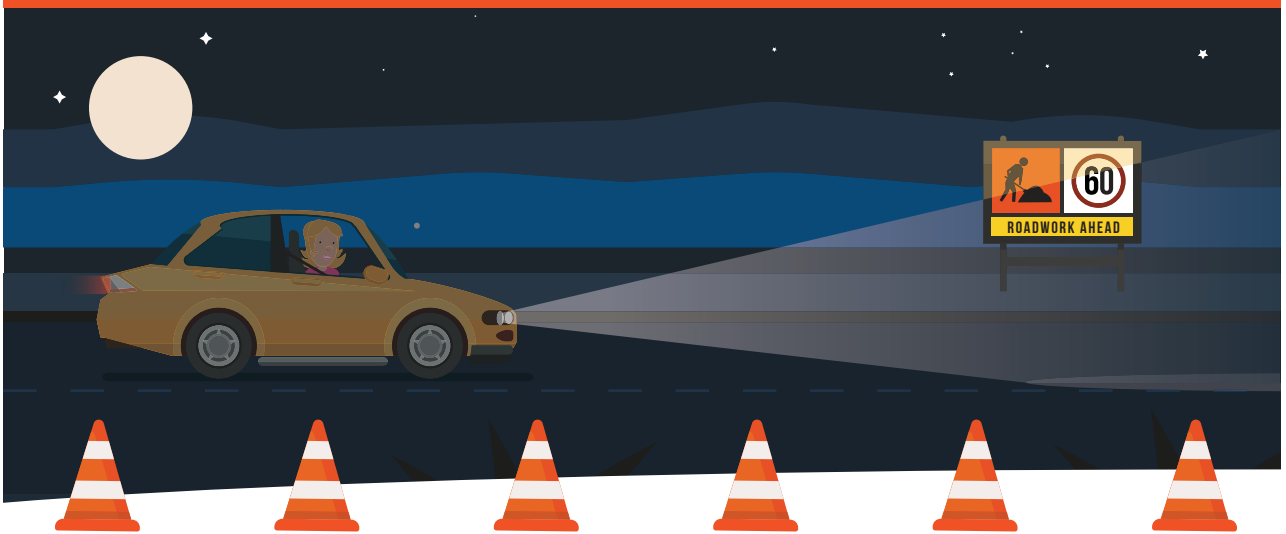
Thought should be given also to the ***risks associated with hilly or curvy roads situations*** from the perspective of ***driver visibility and reaction time***.



ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

UNDERSTAND THE RISKS WITH TIME OF DAY

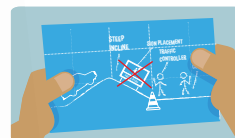


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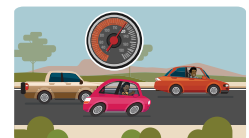
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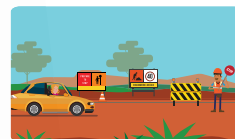
Understand the importance of planning



Know the common types of crashes



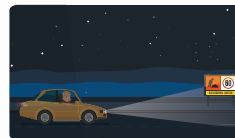
Understand the different risks with highways and urban



Understand the approach area risk



Understand risks with hilly and curvy roads



Understand the risks with time of day



Avoid complacency



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🎯 TOPIC SEVEN: UNDERSTAND THE RISKS WITH TIME OF DAY

Premise

There are *different risks* that need to be considered by road workers for different *times of day*. Think very carefully about how you plan the road work sites at different times of day or night, as well as *how you communicate* relevant messages to drivers.

Main Point

Many roadworks are now being completed at night because there is less traffic, however this introduces *new risks to consider* when undertaking your work. In daylight, various times of day can introduce different problems. If you're working on a road which travels directly east to west, in the afternoon, a driver traveling towards the sun may not be able to see you, your signs, flashing lights, or your vests as readily. And at night, while the flashing lights on the vehicles might be more easily seen, it can be more difficult to determine exactly where they are, or whether they're obscuring other signs. In fact, they can draw the attention away from other devices.

All your signs should be retro-reflective - which means they reflect a car's headlights back towards the driver. So, one of the key things to check when you're setting out a road work site at night is whether the signs intended for use are still reflective. When they are moved in and out of a transport vehicle they can be scratched and the reflective surface damaged in such a way that the signs are no longer visible to drivers. This means one of the most important tasks at your road work site is ensuring all signs can be seen at night under the same conditions in which drivers will see them.

Example

It's not good practice if the sign looks great in the daylight but is completely invisible at night. In the same way, all the cones and other devices that are put out should have reflective strips on them, because although these devices are bright orange, they can be almost invisible at night without reflective strips.

Be aware too that yellow flashing lights need to be set in such a way that a driver can understand what's going on and the purpose of the lights. It should be clear to drivers what the hazards are trying to protect. There are many instances where a crash has occurred at night, and unfortunately, one of the biggest issues is associated with road workers working very close to the road and being quite difficult to see because of the flashing lights and the reflective material on the signs, cones and other devices.

Conclusion

Road workers are always safer if *all risks associated with visibility are considered*, including the way visibility is affected by working at different times of day like dusk, dawn and at night.



ROAD SAFETY AROUND ROADWORKS

HOW TO BE SAFE WHILST WORKING ON THE ROAD

AVOID COMPLACENCY

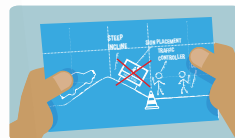


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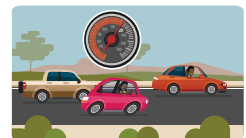
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Understand the importance of planning



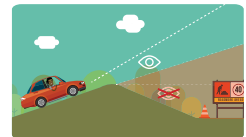
Know the common types of crashes



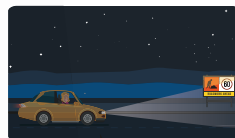
Understand the different risks with highways and urban



Understand the approach area risk



Understand risks with hilly and curvy roads



Understand the risks with time of day



Avoid complacency



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🎧 TOPIC EIGHT: AVOID COMPLACENCY

Premise

For road workers who work on or near the road every day, one of the biggest dangers is complacency about the risks to them as a worker.

Main Point

There are more likely to be injuries and deaths associated with this type of work than from most other occupations in this country. Despite the dangers, it's very easy for someone working near the road to fall into the trap of thinking: *"This is what I do every day and I'm safe. I know what I'm doing."* Unfortunately, that's not the case. Crashes can occur at any time or any place and people in the industry even ask me, *"How do we plan for the unforeseen?"*

Example

In fact, most incidents can be foreseen. For example, we know there's a portion of drivers on the road, who speed regardless of the road rules. They might have alcohol or drugs in their system. Consequently, they pose a constant risk at road work sites.

I've investigated crashes where a driver has simply had a medical episode, like a heart attack, stroke, or dizziness while driving. A driver can lose control of their vehicle and have a crash through no real fault of their own. If this occurs at a road work site where a worker is standing complacently next to the road, the outcome can be critical or fatal.

Even a compliant driver can sometimes make a mistake. In fact, I challenge any driver to say they've never made a mistake while driving. There are so many distractions and the simplest of mistakes can result in a crash. So, ***road workers should never, ever be complacent.***

An example of a recent fatal incident involved a road worker who was walking along a road work site when he stopped to have a chat with his mate who was working inside a large piece of machinery. It was early evening and a driver approached the road work site at an excessive speed and didn't pay attention to the signs. The driver crashed into the machinery and killed the worker. In this case the worker should not have been in the location where he was hit by the vehicle.

Conclusion

It's easy to be complacent and think *"I'm a worker, I'm wearing orange. I know what I'm doing."* This kind of complacency can be fatal and unfortunately, it's something I see regularly at road work sites. My challenge to every road worker is to think about every task you're doing and ask, *"Do I really need to stand here? Instead of standing in front of the barrier with traffic only a metre or so away from me, can I stand behind the barrier? Instead of facing away from traffic, can I turn around and face the opposite direction, so I can see the vehicles approaching me?"*

Remember - ***Complacency kills.***



Educational Videos

FOR ROAD USERS

INTRO 1: HOW TO DRIVE SAFELY THROUGH A ROAD WORK SITES

TOPIC ONE: WATCH FOR THE SIGNS

TOPIC TWO: SLOW DOWN

TOPIC THREE: MAINTAIN A SAFE DISTANCE

TOPIC FOUR: EXPECT THE UNEXPECTED

TOPIC FIVE: MERGE EARLY

TOPIC SIX: STAY ALERT

TOPIC SEVEN: TAKE CARE IN POOR WEATHER AND AFTER DARK

FOR ROAD WORKERS

INTRO 2: HOW TO BE SAFE WHILST WORKING ON THE ROAD

TOPIC ONE: CONTINUALLY EDUCATE YOURSELF

TOPIC TWO: UNDERSTAND THE IMPORTANCE OF PLANNING

TOPIC THREE: KNOW THE COMMON TYPES OF CRASHES

TOPIC FOUR: UNDERSTAND THE DIFFERENT RISKS WITH HIGHWAYS AND URBAN ROADS

TOPIC FIVE: UNDERSTAND THE APPROACH AREA RISK

TOPIC SIX: UNDERSTAND RISKS WITH HILLY AND CURVY ROADS

TOPIC SEVEN: UNDERSTAND RISKS WITH TIME OF DAY

TOPIC EIGHT: AVOID COMPLACENCY

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