INQUEST INTO THE DEATHS OF

STEPHEN LESLIE ROWE, CHARMAINE TRICIA HUNT, OLIVIA KATE HUNT AND PETER JAMES FERGUSON

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Inquest conducted by Ms Elizabeth Sheppard, Coroner, South Australia

CORONERS ACT, 2003

SOUTH  *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 15th day of February 2006, the 20th, 21st, 22nd, 23rd, 24th, 27th, 28th, 29th, 30th and 31st days of March 2006, the 15th and 16th days of May 2006, and the 7th day of August 2006, by the Coroner's Court of the said State, constituted of Elizabeth Ann Sheppard, a Coroner for the said State, into the deaths of Stephen Leslie Rowe, Charmaine Tricia Hunt, Olivia Kate Hunt and Peter James Ferguson.

The said Court finds that Stephen Leslie Rowe aged 36 years, late of 12 Willmett Road, Goolwa died at Main South Road, Sellicks Hill, South Australia on the 24th day of May 2000 as a result of atlanto-occipital fracture dislocation (broken neck).

The said Court finds that Charmaine Tricia Hunt aged 33 years, late of 28 Aberdeen Street, Sellicks Hill died at Main South Road, Sellicks Hill, South Australia on the 12th day of November 2001 as a result of compound skull fractures.

The said Court finds that Olivia Kate Hunt aged 6 years, late of 28 Aberdeen Street, Sellicks Hills died at Main South Road, Sellicks Hill, South Australia on the 12th day of November 2001 as a result of atlanto-occipital fracture / dislocation.

The said Court finds that Peter James Ferguson aged 46 years, late of 13 Paignton Close, Moana died at Main South Road, Sellicks Hill, South Australia on the 25th day of March 2002 as a result of bilateral rib fractures with haemothoraces.

INQUEST INTO THE DEATHS OF

STEPHEN LESLIE ROWE, CHARMAINE TRICIA HUNT,
OLIVIA KATE HUNT AND PETER JAMES FERGUSON

FINDING OF THE CORONER

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EXECUTIVE SUMMARY

1. Inquests into the deaths of Stephen Rowe, Charmaine Hunt, Olivia Hunt and Peter Ferguson were held together because it appeared that the three vehicle collisions which led to their deaths occurred in similar circumstances and at approximately the same location on Main South Road, Sellicks Hill. Four months after concerns were raised about a potential deficiency in the surface of the road at this location, the third fatal collision occurred. On each occasion, the southbound vehicle suddenly travelled onto the incorrect side of the road, whilst negotiating a sweeping right hand bend, colliding with a northbound vehicle.

2. Stephen Rowe was the southbound driver in the first collision on 24 May 2000. He died at the scene from injuries sustained when he collided with a northbound vehicle driven by Glenn Stevens. It is estimated that he was travelling between 110 and 120 kilometres per hour before the collision. In the second collision on 12 November 2001, a southbound vehicle driven by Raymond McKinnis collided with northbound driver, Charmaine Hunt who died at the scene, together with her six year old daughter Olivia Hunt. Mr McKinnis was driving within the applicable 100 kilometres per hour speed limit at approximately 85 kilometres per hour when his vehicle lost control. In the third collision, southbound driver Debra Hearl collided with a northbound vehicle driven by Peter Ferguson who died at the scene from injuries sustained in the collision. Whilst Ms Hearl was injured in the collision and has no recollection of how it occurred, reliable evidence suggests that she was travelling at between 90 and 100 kilometres per hour when her vehicle lost control. There is no suggestion that Ms Hearl was affected by drugs or alcohol at the time.

3. The shoulders of this stretch of road were unsealed, however there was nothing to indicate that the southbound drivers had left the bitumen surface which might have made the drivers lose control of their vehicles. Each collision occurred when the road was wet and slippery. Investigations were conducted by the Police Major Crash Investigation Unit following each collision and prosecutions were initiated against the southbound drivers involved in the second and third collisions, despite there being no evidence of excessive speed or alcohol.

4. Skid resistance testing of the relevant section of roadway was undertaken by Transport SA in December 2001 following the second fatal collision. The skid resistance results indicated that this section of roadway had the potential for motorists travelling within the applicable 100 kilometres per hour speed limit to lose traction, particularly in wet weather. A breakdown in communication within Transport SA meant that the results were not brought to the attention of staff responsible for the road in that location until after the third fatal accident, four months later. A departmental investigation into the problems associated with the road, was flawed, partly because employees concerned in the process lacked the requisite skill and initiative to do what was required. It was also compromised by insufficient and inaccurate data from the Road Crash Unit about other crashes which had occurred in this location.

5. After the second fatal collision, a 'slippery when wet' sign was arranged to be installed, following intervention by the Minister for Transport SA in response to a letter of concern from a member of the Country Fire Service. The sign was installed incorrectly, which meant that motorists were not warned that the road might be slippery in wet conditions. At the time of the third fatal collision, there was no speed restriction or speed advisory sign in place for southbound drivers approaching the sweeping right hand bend.

6. Following the third fatal collision, funding was made available to have the shoulders of the road sealed in May 2002. The road was resurfaced the following month. There have been no further reports of collisions in that location since that time.

1. Introduction

1.1. The following photographs taken at the scene shortly after each collision demonstrate the section of roadway where the collisions occurred. Arrows placed by investigators represent the points of impact in each collision.

Point of impact for collision 24 May 2000

Point of impact for collision 12 November 2001

Point of impact for collision 25 March 2002

1.2. Two years after the third fatal collision, an opinion was sought from an experienced Mechanical Engineer, Christopher Hall, who examined the available documentary material concerning the circumstances of the three collisions. On the basis of his attendance at the scene on 4 May 2004, analysis of the investigatory material, witness statements, skid resistance results and certain assumed facts, Mr Hall made the following key points in a report dated 9 December 2004:

> '
> - The collisions occurred as a result of the south-bound vehicles losing traction and developing a clockwise yaw condition which led to them crossing onto the incorrect side of the road into the path of a northbound vehicle;
> - Each of the southbound drivers attempted to correct their vehicle instabilities;
> - Apart from Mr Rowe, who was likely to have been travelling at 110-120 kilometres per hour, the vehicles were not travelling at speeds in excess of the speed limit;
> - There is a strong inference that loss of stability was likely to have been in the same general area for each of the vehicles, and that was some 70-90 metres north of the points of impact;
> - The area where loss of stability was likely to have occurred was associated with a very low skid resistance and a significant road undulation.'[1]

2. Issues ventilated during the Inquest

2.1. The major issues explored during the Inquest included the following:

- The role played by the surface condition of the road at the relevant time;
- The interpretation of skid resistance test results;
- The estimated speed of each southbound driver and the effect of speed on loss of traction;
- What was known about the road surface by employees of Transport SA at the time of each collision;
- Information available to police and Transport SA about other collisions in the same location indicating a pattern of incidents related to the road surface;
- Action taken by Transport SA to remedy the situation or to alert motorists to potential dangers which the road surface posed for them.

[1] Exhibit C50

3. Events concerning the death of Stephen Leslie Rowe

3.1. First Fatal Collision - 24 May 2000

Kerry Dawn Robinson is probably the last person who spoke with Stephen Rowe before his death. According to Ms Robinson, Mr Rowe was staying at her home in Victor Harbor on 24 May 2000. During the day he was drinking Scotch. After arguing with her about various matters, he left her home for a while and returned at about 8:00pm to invite her to go for a drive in a vehicle which he claimed he had borrowed. Ms Robinson declined Mr Rowe's offer and he drove off without her. The vehicle driven by Mr Rowe belonged to Kristy Lee Williams who spent some time earlier in the day with him. According to Ms Williams, Mr Rowe consumed between four and five pipes of marijuana during the afternoon and he then took her Toyota sedan without her permission while she was having a shower. According to Ms Williams, her Toyota was in good condition but it had a tendency to pull to the left[2].

3.2. At about 9:53pm on Wednesday 24 May 2000, Glenn Stevens was driving a white Ford sedan along Main South Road at Sellicks Hill in a northerly direction. Mr Stevens was an off duty ambulance officer who had been giving a lecture at Yankalilla earlier in the day. It had been raining and the road was wet and slippery. Mr Stevens was familiar with the road, having travelled on it previously. He had never experienced any difficulty with the road before but stated that he slowed down this evening to take account of the wet and possibly slippery road[3]. As Mr Stevens approached a section of the road known locally as 'Cactus Canyon', he travelled downhill into a sweeping left-hand bend at a speed he estimates was between 80 and 85 kilometres per hour. A vehicle now known to be driven by Stephen Rowe could be seen in the distance travelling in the opposite direction towards Mr Stevens. When Mr Stevens saw the vehicle, he dipped his headlights in anticipation of passing it. Shortly after doing this, Mr Stevens realised that he could no longer see the headlights of the oncoming vehicle. Suddenly he saw a vehicle with its headlights on, in front of him but travelling sideways. Mr Stevens assumed that the vehicle had lost control on the bend causing it to travel sideways in his direction. There was no time for Mr Stevens to take evasive action before Mr Rowe's vehicle crashed into his vehicle[4].

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[2] Exhibit C29
[3] Transcript, Page 8
[4] Exhibit C32

Mr Stevens noticed that the lights on his own dashboard went out at the point of impact, but at the same time he could see the headlights of the other vehicle shining into his own passenger side window. Less than two weeks after the collision, Mr Stevens described what he saw to Senior Constable Dempster as follows:

> 'I can remember seeing a car come out of the corner which was obviously his vehicle and then as he's come out of the corner he's, he's appeared to lose control of the vehicle and gone sideways as he's come out the corner.'[5]

3.3. The point of impact was later calculated by police at approximately 1.4 kilometres south of Justs Road[6]. Stephen Rowe, who had been driving a blue Toyota Corolla sedan, died at the scene from injuries sustained in the collision. There were no passengers in his vehicle at the time. Mr Stevens suffered a fractured patella, two broken fingers, a fractured shoulder and soft tissue bruising. He was unable to get himself out of his vehicle after the impact but was able to use his mobile telephone to call for ambulances. He was later conveyed to the Flinders Medical Centre in a serious but stable condition. There were no other witnesses to the collision.

3.4. Mr Stevens estimated that the oncoming vehicle was travelling towards him at a speed of possibly between 80 and 120 kilometres per hour. He said that the road was a little slippery. According to Mr Stevens, road work signs were erected south of the accident scene, to accommodate the construction of an overtaking lane. There was heavy machinery was on the side of the road[7].

3.5. <u>Post Mortem of Stephen Leslie Rowe</u>

A post mortem examination was conducted by Forensic Scientist Dr Ross James on 26 May 2000. The cause of death was attributed to 'Atlanto-occipital fracture dislocation (broken neck)'. In addition to this fatal injury, Mr Rowe suffered a fracture of the vertebral column at T2/3 level with transection of the spinal cord. Dr James also observed fractured left and right ribs, posterior and lateral as well as a fractured pelvis. Dr James concluded that the injury pattern represented untreatable and non survivable injuries. Macroscopic and microscopic brain examination conducted by Dr Grace Scott, Pathologist of the IMVS, revealed extensive subarachnoid haemorrhage, superficial pontomedullary tear and intraventricular

[5] Exhibit C32
[6] Exhibit C6a
[7] Exhibit C32

haemorrhage[8]. I accept the opinions expressed by Dr James as to the cause of Mr Rowe's death and the observations made by Dr Scott. I find that the fatal injuries were sustained in the collision on 24 May 2000.

3.6. Toxicology

A sample of Mr Rowe's blood was analysed by Forensic Scientist Chris Kostakis. The results revealed that Mr Rowe's blood contained a level of 0.010% alcohol, 0.11mg methamphetamine per litre (above therapeutic levels) and traces of Tetrahydrocannabinol (THC).

3.7. No evidence was provided during the Inquest to establish the likely effect that this combination of substances would have had on Mr Rowe's capacity to drive a motor vehicle at the time of the collision. Notwithstanding the absence of evidence on the topic, I am prepared to draw some logical inferences nevertheless. On the basis of the toxicology analysis and the evidence concerning Mr Rowe's previous conduct during the day and evening, I find that Mr Rowe consumed a quantity of alcohol and marijuana as well as amphetamine, which in combination may have affected his driving behaviour at the time of the collision.

3.8. Police Investigation of First Fatal Collision

Senior Constables Nicolle Dempster and Gregory Rowland from the Major Crash Investigation Unit arrived about 11:00pm and started examining the scene, taking measurements and marking relevant locations. By this time Mr Stevens had been transferred to the Flinders Medical Centre, whereas Mr Rowe's body was still trapped within the Toyota vehicle at the scene. It was noted that he had not been wearing a seat belt. Mr Rowe was later conveyed to the Victor Harbor Hospital where he was pronounced deceased at 1:30am on 25 May 2000[9].

3.9. Senior Constable Dempster later provided a brief statement outlining her investigation. She described the road as bitumen, with one lane for northbound and one lane for southbound vehicles edged by a dirt shoulder and then a vegetative verge. The road was divided by a solid white line for the southbound vehicles and a broken line for northbound vehicles[10]. The point of impact was determined from observations made of the vehicles in their final resting position and from scratches

[8] Exhibits C3a, C4a
[9] Exhibit C51a
[10] Exhibit C6b

and recent gauge marks in the road. Photographs taken at the scene depict both vehicles where they came to rest on the wet road. The Toyota, driven by Mr Rowe, ended up wholly within the northbound lane with the rear of the vehicle smashed against the Armco rail which followed the curve in the road on both sides. Yellow painted markers were made as reference points to indicate the position of the vehicles and the points of impact.

3.10. Following her investigation, Senior Constable Dempster formed the view, that the southbound vehicle driven by Mr Rowe had lost stability as he was negotiating the sweeping right-hand bend travelling in a southerly direction. I assume that if there was evidence showing that the Toyota had left the bitumen surface prior to the collision, Senior Constable Dempster would have noted it. Because there is no reference to this in her statement nor in any other documentation concerning this collision, I find that the Toyota is likely to have remained upon the sealed roadway before the vehicle lost stability. Photographs taken of Mr Rowe's vehicle depict the extensive damage to the rear passenger side of the sedan, confirming that the point of impact was in that position[11].

3.11. Applicable Speed

On 5 June 2000, Senior Constable Dempster returned to the scene during daylight hours to take photographs of the roadway. One photograph taken on that occasion depicts an 80 kilometres per hour sign just before the curve for southbound drivers[12]. According to Senior Constable Dempster's statement, the 80 kilometres per hour limit was the applicable limit at the time of the collision. In a separate vehicle collision report, said to be generated by Senior Constable Dempster, the applicable speed limit is documented as 110 kilometres per hour. Unfortunately Senior Constable Dempster was not called to give evidence to clarify this point.

3.12. A question arose during the Inquest about whether the 80 kilometres per hour sign might have been installed there shortly after the collision to accommodate the construction of the overtaking lane further south. Departmental records for Transport SA did not assist. The official position as far as the Department is concerned is that the applicable limit on 24 May 2000 was 100 kilometres per hour[13]. However, Transport SA employee Trevor Sachse, was asked to examine this stretch of roadway

[11] Exhibit C6b, photograph 13
[12] Exhibit C6b, photograph 6
[13] Transcript, Page 1235

after the collision and when he did this on 1 June 2000, he noted that the collision occurred in an 80 kilometres per hour 'work zone area'[14].

3.13. Within days of the collision, temporary, A-framed style 60 kilometre per hour signs were placed by road workers in a position further south than the point of impact for the road works. According to Senior Constable Dempster's statement, these temporary signs were not in place on the day of the collision[15].

3.14. When Glenn Stevens first gave an account of what occurred to Senior Constable Dempster on 5 June 2000, he stated that just before the collision, he was in a speed restriction zone which was about 80 kilometres per hour for northbound vehicles as he was coming over the hill heading down into a left hand bend. He estimated that he was travelling at between 80 and 85 kilometres per hour just before the collision[16].

3.15. Given the inconsistencies in the evidence, it is difficult to be certain about the applicable speed limit for southbound drivers on 24 May 2000. Having considered the available evidence, I find that it was likely to have been 80 kilometres per hour, on a temporary basis, in connection with nearby roadworks.

3.16. Police Prosecution Process

Following the Major Crash Unit investigation, Senior Constable Syrus was given the task of adjudicating on the material to decide whether there ought to be any prosecution arising out of the collision. On the basis of the available information, Senior Constable Syrus formed the view that Mr Rowe was at fault by driving at excessive speed and under the influence of alcohol and drugs. No action was taken obviously because of the outcome of the collision[17]. Senior Constable Syrus would later reflect upon the circumstances of this collision in more detail when he became involved in the investigation of the third fatal collision at this location. I say more about Senior Constable Syrus's involvement subsequently.

3.17. Vehicle Examination

Following each of the three fatal collisions, police mechanic Elliot McDonald examined the vehicles concerned in each collision with a view to determining whether there was any mechanical defect or finding which might have caused the collision or

[14] Exhibit 48, Attachment E
[15] Exhibit C6b, photograph 2
[16] Exhibit C32
[17] Exhibit C45, Transcript, Page 482

contributed to it. No such defect was found. Given the descriptions of each collision, the most relevant vehicles examined were the southbound vehicles which moved into the path of the oncoming northbound vehicles. The tyre pressure of the Toyota could not be measured because of the damage sustained during the collision and the shock absorbers were not examined on any of the vehicles concerned in each collision. The tyres on the Toyota were said to be satisfactory except for the front right tyre, which was bald. Mr McDonald concluded that the 1991 Toyota Corolla sedan driven by Mr Rowe was in reasonable condition before the collision and he could find nothing mechanically wrong that would have contributed towards or caused the collision[18]. I accept the opinions formed by Mr McDonald concerning his examination of the vehicle.

3.18. Analysis of the First Fatal Collision by Christopher Hall

Mechanical Engineer, Christopher Hall reviewed the circumstances of the collision which claimed Mr Rowe's life. Mr Hall holds an Honours degree in Mechanical Engineering from the University of Adelaide in 1974. He is a member of the Society of International Automotive Engineers and the Chair of the Motorcycle Resources Group within the Accident and Investigation Practices Committee of that Society. Mr Hall's principal area of work involves examining the circumstances surrounding motor vehicle accidents and providing opinions on how accidents occur, the speed of the vehicles involved and the influence of the vehicle dynamics on the forces applied to vehicle occupants, motorcycle riders and pedestrians[19].

3.19. Mr Hall examined the available documentary material including accounts from witnesses, police reports, photographs and vehicle examination reports. When he inspected the road on 4 May 2004, he noted a very subtle undulation in the roadway when watching southbound traffic pass over it. By this time, the road had been re-paved and it is therefore not possible for him to make accurate comparisons with any undulation said to have been present in the vicinity previously. Mr Hall formed the view that if vehicles travelled over an undulation of this type, significant vertical movement occurs, which in combination with changing tyre load conditions, suspension effects and very low skid resistance levels would, lead to loss of stability.

[18] Exhibit C7a
[19] Exhibit C50

3.20. After comparing the available information regarding each of the three fatal collisions, Mr Hall concluded that the collision concerning Stephen Rowe and the collision concerning Peter Ferguson, occurred within very close proximity to each other in the northbound carriageway approximately 15 metres north of the area where Mrs Hunt collided with the Ford F100 driven by Mr McKinnis. Based upon evidence from Mr Stevens, police photographs demonstrating the collision in a near head on condition, an analysis of the movement of the Ford after impact and damage to the Armco rail, Mr Hall concluded that immediately prior to the collision, Mr Rowe was likely to have been travelling between 110 and 120 kilometres per hour or perhaps 5 kilometres per hour greater if one took into account that he had been travelling downhill prior to negotiating the bend. I accept Mr Hall's opinion concerning the likely speed travelled by Mr Rowe before the collision.

3.21. According to Mr Hall, the motion of the Toyota as described by Mr Stevens is consistent with the vehicle developing a clockwise 'yaw' which continued unabated until impact. Mr Hall explained that in all three fatal collisions, the southbound vehicles moved onto the incorrect side of the road and collided with traffic in the northbound lane. He noted that the southbound vehicles crossed over at an angle, heading in a westerly direction. According to Mr Hall, this commonly occurs when a vehicle leaves the bitumen surface to the left, momentarily travelling onto the unsealed shoulder. In this situation, drivers generally react by over-correcting the steering in an attempt to get back onto the road. Mr Hall suggested that it would be the first thing police would think of when investigating collisions occurring along stretches of roadway where the shoulders are unsealed[20].

3.22. Mr Hall explained that this 'yaw' condition can also develop without leaving the bitumen surface, along a curve in the road where the speed is too high, taking into account the radius of curvature and the friction level along that stretch of roadway[21]. Mr Hall elaborated upon the forces involved by reference to the right-hand curve for southbound vehicles at Cactus Canyon as follows:

> 'Because there is a curve involved in the location of these accidents, when the car goes around the corner it would be developing sideways forces at the wheels and it's those

[20] Transcript, Pages 762, 766)
[21] Transcript, Page 766

> sideways forces that in fact cause the vehicle to turn, and for those forces causing the vehicle to turn, by Newton's law, there is an equal and opposite force. That opposite force is trying to throw the car off the road to the outside of the bend and it's what we call centrifugal force. The only thing that's stopping the car from being thrown off to the outside of the bend is the frictional force between the road tyre and the road surface, and when that centrifugal force, trying to throw the vehicle off the road, exceeds the frictional force acting in the opposite direction, then the car will start to slide. So the lower the friction, the lower the force of resistance to the car sliding.'[22]

3.23. Mr Hall confirmed that he could see nothing in the material supplied to him which indicated that any of the southbound vehicles had left the road surface prior to losing control. On the assumption that the applicable speed limit was 100 kilometres per hour, Mr Hall suggested that Mr Rowe could have approached the right hand curve slightly in excess of the speed limit which was enough to make his vehicle slide, if the friction level where his tyres tracked, was very low[23].

3.24. The following description was given by Mr Hall of how the 'yawing' condition generally occurs when travelling along a right hand bend:

> 'The back of the vehicle tends to track to the left outside of the path of the front wheels and, in layman's terms, we call it 'the vehicle spins out', and that is because the vehicle goes into a condition of oversteer, the traction at the rear of the vehicle is lost and the rear of the vehicle slides to the left while the front of the vehicle is turning to the right and the vehicle then very quickly starts to spin out, but, in doing so, the vehicle's wheels are still rotating and trying to push the car forward but its orientation is now towards the west rather than towards the south and so it drives across the roadway, and that is the whole process of the yaw condition. Some drivers are able to respond in time and then their steer input can try to reverse the direction that the vehicle is heading in and then they get into what is euphemistically called 'snaking down the road' as they try to control the yaw condition that is initiated into the vehicle due to subsequent steer input, but sometimes the yaw condition develops so quickly that they don't even have time to counter-steer.' [24]

3.25. According to Mr Hall, when estimating the speed at which loss of traction could occur, it is necessary to consider the radius of the bend and the skid resistance values of the road surface by testing for a wet road in that location. If the skid resistance levels in the area where loss of control occurred, were around the 0.3 level, then according to Mr Hall, southbound vehicles travelling between 100-110 kilometres per hour would be approaching the point where loss of traction could occur. Mr Hall explained the situation as follows:

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[22] Transcript, Page 769
[23] Transcript, Page 770
[24] Transcript, Page 763

> 'Slight alterations to the turning path, brake or power application or undulations in the road surface can induce loss of traction and yaw. Vehicles travelling significantly slower than 110 kilometres per hour would require greater changes to their paths or ride condition (vertical movement) in order to induce loss of traction. Vehicles travelling at 100 kilometres per hour or less would be very unlikely to encounter conditions on that section of road which would cause instability if the skid resistance were 0.45 or more in the wet.'[25]

3.26. He considered that if the skid resistance levels along that stretch of road were at or above 0.45, (referred to as the 'recommended intervention level') then a speed of 135 kilometres per hour or greater would be required before a vehicle would lose stability. Nevertheless, Mr Hall calculated that even if the skid resistance levels were at or above 0.45, an appropriate design speed for this section of road would be 90 kilometres per hour[26]. I assume that in determining a design speed, factors including driver experience, variability of vehicle suspension and tyre characteristics would be taken into account.

3.27. Mr Hall explained that when entering a sweeping bend to the right, additional pressure is placed upon the tyres on the left-hand side of the vehicle. He added that to some extent a poor quality tyre on the right front of the vehicle would not have the same potential for loss of traction as it would on the left hand side of the vehicle. Hence he argued that the bald front right tyre on the Toyota would have had a very minor effect on the capacity of the vehicle to maintain friction at the relevant time[27]. According to Mr Hall, it appeared that Mr Rowe tried to respond to the developing yaw, but due to the lag period associated with his steering input, total loss of control quickly developed[28]. In Mr Hall's opinion, Mr Rowe's vehicle was travelling sideways at the time it impacted with the Ford Falcon. He estimated that this might have occurred over a distance of some 70 metres in just over two seconds as follows:

> 'In terms of correctable yaw, it was likely that the Toyota was past the 'point of no return' within ½ - ¾ second…. it would be understandable that a driver could not effect any correction to the yaw condition, although he may have been attempting to do so by rapid steer input.' [29]

3.28. When taken together with the examination of the circumstances surrounding the subsequent two fatal collisions, Mr Hall considered that there was a strong inference

[25] Exhibit C50
[26] Transcript, Page 780
[27] Transcript, Page 761
[28] Exhibit C50
[29] Exhibit C50, p10

that the loss of stability was likely to have been in the same general area for each of the vehicles at around 70 to 90 metres north of the points of impact, where there was very low skid resistance and a significant road undulation.

3.29. Mr Hall was unable to exclude the possibility that poor suspension, steering or brake adjustment - bias, contributed to loss of control of Mr Rowe's vehicle. But he claimed that even if these were substandard, they would not be critical factors unless the vehicle was 'approaching its stability critical point'[30]. The same comments were made concerning the vehicles driven by Mr McKinnis and Ms Hearl in the second and third fatal collisions.

3.30. The evidence enables me to find that Mr Rowe's vehicle lost traction whilst negotiating the right-hand bend at Sellicks Hill, travelling along a wet road surface onto the incorrect side of the road, in accordance with the explanations provided by Mr Hall. It is not possible to determine the extent to which an undulation in the road, may have contributed to loss of traction before the collision. It is also not possible to accurately determine what the relevant skid resistance levels would have been in the pathway tracked by the Toyota at the time of the collision. I find however, that because consistently low results were revealed in testing eighteen months later, it is likely that in May 2000, the skid resistance levels long the eastern carriageway would have fallen below the recommended intervention level at least in some areas.

3.31. According to Mr Hall, Mr Rowe's failure to wear a seat belt was unlikely to have affected the outcome, given the severity of the impact[31].

3.32. <u>Communication between police and Transport SA following the first fatal collision</u>

At 11:35am on 25 May 2000, a document was generated by the Major Crash Investigation Unit of the police department and faxed to the central office of Transport SA at Walkerville. This document, referred to in evidence as an 'ABC' document, was used to advise the Department of a fatal collision where police had attended[32]. The one page document contained an alphabetical list of typed headings under which are entered very brief handwritten details concerning the collision. The collision is said to have occurred at 'Main South Rd, Sellicks Hill – Good bitumen. Wet at time'. The driver of the Toyota is said to have lost control and collided at right

[30] Transcript, Page 760
[31] Exhibit C50
[32] Transcript, Page 1098

angles with the front of the northbound Ford sedan. An opinion is expressed in the document that speed and the condition of the Toyota may be possible causes of the collision[33].

3.33. An additional handwritten document with further detail was faxed to Transport SA from the police at about 10:00pm the same day. This document is a copy of the police journal concerning the collision. The speed limit for the collision site is said to be 80 kilometres per hour. I assume that either Senior Constable Dempster or her partner was responsible for the information contained within these documents which were processed by the Road Crash Information Unit of Transport SA, managed by Steven Lippett.

3.34. Action taken by Transport SA following the first fatal collision concerning Stephen Rowe

According to Mr Lippett, his Unit processed data received in this way and caused it to be entered in an electronic data base for Departmental purposes[34]. I make further comment about this topic later in these findings.

3.35. In accordance with the system operating at the time, Mr Lippett's Unit sent a very brief 'fatal accident notification' to Transport SA's Eastern Region, which was responsible for the road at Cactus Canyon. This document is said to be no longer available, however an example of the type of document used for this purpose was received into evidence and amply illustrates its limitations. The document sometimes called a 'slip', notes the date and time of the collision, a description of its stated location, the number of people killed, the type of vehicle and type of crash by reference to some simplified code description such as 'roll-over' or 'head-on'. It also suggests a possible cause, for example 'excessive speed'. A footnote explains the purpose of the notification as follows:

> 'NOTE: The above information is based on preliminary advice from the police and is provided to alert you to the incidents of a fatal crash in your council's area.' [35]

3.36. At that time, there was no ready access by staff in regional areas to the Department's road crash data. The only information received was generally the information recorded in these brief notification slips.

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[33] Exhibit C51a
[34] Transcript, Page 1097
[35] Exhibit C51d

3.37. Kevin Wynne was the maintenance and contract delivery officer for the Eastern Region which covered the South East, the Riverland, Upper and Lower Mallee, Fleurieu Peninsula and Kangaroo Island. Mr Wynne acknowledged during the Inquest that he may have been the person who received the report of the fatal crash notification concerning the collision on 24 May 2000, but he could not recall. He was responsible for organising routine maintenance needs of the region. In accordance with normal practice, he said that he would have arranged for contract supervisor Trevor Sachse to go to the site of the collision and to prepare a report about anything arising out of the collision which required maintenance activity, such as unfilled potholes, obvious road surface problems, damaged sign posts or other defects along the roadway[36]. Depending upon what was found, defects requiring maintenance were entered into the maintenance defects register and were attended to subject to the availability of contractors. According to Mr Wynne, the maintenance work was primarily undertaken by independent contractors[37].

3.38. Trevor Sachse stated in evidence that he was instructed by his supervisor Mr Wynne, to go to the site on Main South Road for each of the three collisions in that location. He was never shown the fatal accident notifications and was usually given a short verbal description of where to go, but nothing about the circumstances of the collision. After inspection of the area, he was required to complete a proforma document referred to as a 'Fatal Accident Report Form'. To help him fill in the forms, Mr Sachse made a habit of cutting out newspaper articles and sometimes noted what was said on the radio about the collisions[38].

3.39. When Mr Sachse attended the collision site on 1 June 2000, he identified the location by looking for the yellow painted marks made by police a few days earlier. He recorded the location, with the assistance of a Houldermetre, by reference to maintenance marker posts (MMP) positioned at one kilometre intervals along the roadway. Mr Sachse noted that the collision site was between MMP 20 and MMP 21 at 20.44, within a stretch of road known as Cactus Canyon[39]. An issue arose during the Inquest about inconsistent methods used by police and others when recording the precise location of collisions. This is said to have compromised the quality of the

[36] Transcript, Pages 534, 647
[37] Transcript, Page 518
[38] Transcript, Page 651
[39] Transcript, Page 648

database used to research danger spots along the road network. I say more about this topic later in these Findings.

3.40. Mr Sachse took photographs of the area, sketched it and attached these items to the completed Fatal Accident Report Form. He explained in evidence that he was unable to complete all of the sections of the form because he had insufficient information. A small newspaper clipping describing the collision was inserted by him into the document[40]. According to Mr Sachse, he did not notice any defects when he looked at the site which required an entry to be made into the maintenance defect register.

3.41. According to Mr Sachse, the forms were only completed for maintenance purposes. He explained that he did not touch the surface of the road to see whether it was smooth or not because it was not the type of thing which was relevant to the maintenance defect register[41]. Mr Sachse had no formal qualifications or training which might have equipped him to do anything other than what he did.

3.42. A road crash report concerning this collision was later generated from the database managed by Mr Lippett's Road Crash Information Unit. The report outlined the essential facts in which the southbound Toyota lost control and crossed over the dividing line into the oncoming northbound vehicle. Three different locations, said to be the location of the collision, have been written in handwriting as '20.22, 21.18 and 20.44'. The speed limit applicable is noted to be 110 kilometres per hour[42].

4. Events Concerning the deaths of Charmaine Tricia Hunt & Olivia Kate Hunt

4.1. Second Fatal Collision – 12 November 2001

At about 3:45pm on Monday 12 November 2001, Raymond McKinnis was driving his 1985 Ford F100 utility in a southerly direction along Main South Road towards Cactus Canyon. As he negotiated the right-hand bend, his vehicle crossed onto the incorrect side of the road and collided with a Ford sedan travelling in the opposite direction, driven by Charmaine Hunt, killing her and her six year old daughter Olivia, who was seated next to her in the middle of the front seat. Mrs Hunt's other two children Emma 8 years and Anita 14 years were injured.

[40] Exhibit C48, Attachment E
[41] Transcript, Page 689
[42] Exhibit C51a

4.2. Barrie Smith

Barrie Smith had been driving a United Water Ford Utility in a northerly direction approximately 100 metres behind Mrs Hunt's brown Fairlane before the collision. Mr Smith stated that he was travelling at about 100 kilometres per hour and was slowly catching up with a brown Fairlane ahead of him. There was light misty rain falling and the roadway was slightly wet. As Mr Smith descended the road towards the left-hand bend, he noticed a vehicle travelling in the opposite direction. As the oncoming vehicle approached the bend, it appeared to travel normally but then suddenly, the right rear corner of the vehicle commenced sliding to its right. The driver appeared to use hand over hand movements with the steering wheel and had a facial expression indicating either pain or fear. Mr Smith then saw the vehicle travel across the dividing line towards brown Fairlane, but then it swung back to the left and then back to the right. Mr Smith applied his brakes in anticipation of a collision and then he saw the oncoming vehicle collide with the driver's side of the Fairlane[43]. The impact caused the southbound F100 utility to rotate clockwise. In the process of applying his brakes, Mr Smith's vehicle slid on the slippery wet surface and he was unable to prevent his vehicle colliding with the Ford F100. Fortunately he was not seriously injured and was able to get out of his vehicle. Once he was out of the vehicle, he noticed that that it was slippery all the way around the vehicles and even though he was wearing sneakers, he slipped to the ground straight away.

4.3. When Mr Smith approached the driver's side of the Fairlane, he saw that the female driver had a large head wound. He checked for her pulse but could not find one. On the front passenger side he saw a child lodged partly underneath the dashboard on the passenger's side. Upon checking for the child's pulse he could not find one.

4.4. According to Mr Smith, the driver of the Ford F100 utility, now known to be Raymond McKinnis, also got out of his vehicle and asked what had happened. He appeared rather vague and confused. The Ford F100 ignited shortly afterwards, but the fire was extinguished by others who came to the scene.

4.5. Mr Smith explained in evidence that he had vivid memories of the collision. He estimated that the Ford Fairlane ahead of him was travelling at approximately 85 kilometres per hour before the collision.

[43] Transcript, Page 83

4.6. Mr Smith said that he was familiar with that area of Main South Road because on a previous occasion, a work colleague from United Water had been negotiating the bend when strong winds caused him to leave the road and hit the guardrail. He said that the cross wind warning sign was in place on that occasion and it was still there when this collision occurred. He said that he generally slowed his driving down to accommodate potential cross wind, but he had never encountered any loss of steering or control at that area personally[44].

4.7. Whilst Mr Smith stated in evidence that he saw the oncoming vehicle make two manoeuvres before the collision, in a statement given shortly after the collision he described only one 'fish tail movement'[45]. I find that the version described in his earlier statement is more likely to be accurate, although one needs to be cautious about the reliability of recalled events observed over a period of seconds in a situation like this. Mr Smith stated also that he was certain that the oncoming vehicle did not go off the shoulder of the road and then come back again. He said that it looked as though the vehicle had lost control.

4.8. Ambulance attendance

Mrs Hunt was located in the driver's seat by ambulance officers with her seat belt in place. She was unresponsive. There were no heart sounds or respiration and her pupils were fixed and dilated. Charmaine Hunt was declared deceased by Intensive Care Paramedic Cindy Lee Hein at 5:00pm on 12 November 2001[46].

4.9. Olivia Hunt was located in the front middle seat with a lap seat belt fitted. She was positioned between her mother and sister Emma. Olivia was wedged beneath the dashboard and was difficult to access until assistance was provided. When examined, Olivia was unresponsive. There were no detectable heart sounds or respiration and her pupils were fixed and dilated. Olivia Hunt was declared deceased by Ms Hein at 5:00pm 12 November 2001.

4.10. Anita Hunt

Anita Hunt, aged 14 years, provided a short statement to police on 22 March 2002 concerning her recollections of the collision. Anita stated that her mother picked her up from the Yankalilla Area School that afternoon. Olivia sat next to her mother in

[44] Transcript, Page 97
[45] Exhibit C33
[46] Exhibits C9a, C9b

the middle of the front seat and Emma sat on the front passenger side. Anita sat in the rear left seat behind Emma. Anita stated that she talked to her mother about plans for the future and her next memory was waking up in hospital with severe injuries including broken ribs, punctured lungs and other internal injuries[47]. The Inquest was not provided with any information concerning the injuries suffered by Emma Hunt.

4.11. Post Mortem Examination of Charmaine Hunt

Dr Ross James, Forensic Pathologist, conducted a post mortem examination of 33 year old Charmaine Hunt on 13 November 2001 at the Royal Adelaide Hospital. As a result of this examination, Dr James concluded that the cause of Mrs Hunt's death was compound skull fractures which involved 'all fossae in the cranial skull base with attended brain damage'.

4.12. Additional injuries were observed as follows:

'1. Laceration 3.2cm across left eye socket below the eyebrow with orbital bruising.
2. Massive gaping defect 11 x 6 cm behind right ear with underlying compound skull fracture and brain extrusion.
3. Circular protrusion over the left upper chest 4 cm diameter (medial end of left clavicle).
4. Paint and glass fragments scattered over the anterior chest.
5. Windscreen type lacerations scattered down the lateral aspect of the right upper and lower arm with a laceration above the elbow and a 9cm laceration on the mid forearm. Underlying compound fracture of humeral shaft noted.
6. Curved abrasions sweeping obliquely down the anterior abdomen to a series of windscreen type injuries on the right loin.
7. 5cm laceration medial aspect of left wrist with underlying fracture dislocation of wrist.
8. Laceration 6cm and 8cm on the postero-lateral aspect of the right thigh with underlying fracture of right femoral midshaft (compound).
9. Multiple transverse lacerations down the left shin 9cm in length and compound fracture of the tibia.
10. Fracture lower left femoral shaft.'[48]

4.13. The cause of death of Mrs Hunt was confirmed by macroscopic and microscopic brain examination by Professor Peter Blumbergs, Pathologist from the IMVS[49].

[47] Exhibit C15a
[48] Exhibit C10a
[49] Exhibits C11a, C11b

4.14. Toxicology analysis by Heather Felgate, Forensic Scientist from Forensic Science SA, revealed no blood alcohol and no drugs that would have any bearing upon Mrs Hunt's driving ability at the relevant time. I accept the opinions expressed by Dr James concerning the cause of death and other injuries sustained by Mrs Hunt. I also accept the conclusions reached by Professor Blumbergs and Heather Felgate. I find that Charmaine Hunt sustained her fatal injuries in the collision on 12 November 2001.

4.15. Post Mortem Examination of Olivia Kate Hunt

A post mortem examination of 6 year old Olivia Hunt was conducted by Professor Roger Byard, Forensic Pathologist of the Forensic Science Centre on 13 November 2001 at the Royal Adelaide Hospital. Professor Byard attributed Olivia Hunt's death to 'atlanto-occipital fracture/dislocation with trauma to the underlying high cervical spinal cord' which essentially meant that Olivia suffered a broken neck. Professor Byard noted another catastrophic injury and described it in his report as follows:

> 'In addition, transection of the aorta was a second lethal injury which was associated with the filling of the chest cavity with blood. These injuries would not have been amenable to medical treatment and would have resulted in rapid death.'[50]

4.16. Other injuries were observed including left-sided subdural haemorrhage, right-sided rib fractures with laceration of the right lower lobe of the lung, lacerations of the liver, disruption of the right adrenal gland, compound fracture of right tibia and fibula, fracture of the left femur, fracture/dislocation of the left ankle and multifocal areas of superficial abrasions, bruising and lacerations. I accept Professor Byard's opinions and conclusions concerning the cause of death and other injuries sustained by Olivia Hunt. I find that Olivia Hunt sustained her fatal injuries in the collision on 12 November 2001.

4.17. Initial Police Attendance

Senior Constable Gordon Little from Aldinga Police Station was one of the first police officers to attend the scene of the collision which he recorded as approximately 1.3 kilometres south of Justs Road. All three vehicles involved in the collision came to rest in the northbound traffic lane. The sealed bitumen surface was wet, and it was drizzling with rain. Mr McKinnis had deep lacerations to his forehead and was attended to by an ambulance officer. Subsequent investigations revealed that alcohol

[50] Exhibit C14a

was not a factor concerning any of the drivers in this collision[51]. Country Fire Service (CFS) personnel at the scene assisted ambulance officers in extracting Anita Hunt and Emma Hunt from the Ford sedan after which they were conveyed to the Flinders Medical Centre by ambulance for treatment[52].

4.18. Evidence of Noel Raper

Mr Raper was a member of the Myponga branch of the CFS for 39 years and a volunteer ambulance officer for 18 years. In his capacity as a member of the CFS, Mr Raper attended the scene of this collision. He had also attended several other collisions in the same location over the years. According to Mr Raper, there had been a level of concern amongst CFS members in his locality about this particular road and how slippery it was when it had rained, especially after a period of dry weather. During evidence given at the Inquest, Mr Raper stated that he vividly remembered that the road was so slippery on this particular day that he had trouble walking on it even in his rubber soled work boots. He said that he slipped while he was lifting a patient. Mr Raper discovered that even at a distance of some 50 metres away from the crash scene in a northerly direction, it was still very slippery. Each time he went to that location to an accident, it appeared to be slippery[53].

4.19. Police Investigation of Second Fatal Collision

Senior Constables David Kuchenmeister and Keith Atkins from the Major Crash Investigation Unit attended the scene at about 5:12pm on 12 November 2001. Light rain was falling and the road surface was wet. Mrs Hunt's brown Ford sedan registration REH-636 had come to rest on the western gravel shoulder against the bitumen edge of the roadway, facing generally north. The front and right side of Mr Smith's Ford utility had extensive collision damage. Immediately south of this was the white Ford F100 utility VHG-146 across the northbound traffic lane facing generally southeast. The bullbar attached to the front of the vehicle had been dislodged on the right side and was bent 90 degrees to the front. There was extensive collision damage to the front of the vehicle

4.20. Two tyre marks seen on the northbound traffic lane were said to be consistent with the front tyres of Mr Smith's vehicle when he was applying his brakes, trying to avoid the

[51] Exhibit C45
[52] Exhibits C16a, C17a
[53] Transcript, Page 320, Exhibit C38

collision. The weather conditions changed while the police were at the scene and the road surface began to dry out before photographs were taken.

4.21. For southbound vehicles approaching the sweeping right hand bend, there was a 'cross wind' sign in place, but no other signs[54]. Transport SA witnesses were unable to confirm when this 'cross wind' sign was installed by reference to Departmental documents, other than to say that it would have been in place by 31 May 2001[55]. Whilst it is not strictly relevant to matters arising out of this Inquest, it is noteworthy that contrary to Departmental operating instructions, there was no windsock in place to enable road users to respond appropriately to changing wind conditions in this location[56].

4.22. Senior Constables Kuchenmeister and Atkins re-attended the scene on 18 November 2001 to take further measurements with a Geodimeter Total Survey Station (an electronic surveying device). The features of the locality were recorded in detail and incorporated subsequently into witness statements. Senior Constable Kuchenmeister stated that the roadway appeared in good condition and was free of any loose debris or other substances which may have contributed to the collision. He determined the location of the collision by reference to gouge and scrape marks on the western side of the northbound traffic lane. He measured the point of impact at approximately 1.35 kilometres south of Justs Road where it intersects with Main South Road at Sellicks Hill. He noted that the applicable speed limit was 100 kilometres per hour.

4.23. Senior Constable Atkins summarised the outcome of the investigation as follows:

> 'The collision occurred when the driver of the Ford F100 lost control of that vehicle, while negotiating a slight bend in the roadway, causing it to cross to the incorrect side of the road and collide head on with the Ford sedan travelling in the opposite direction. Subsequent to that collision, the driver of the Ford utility which had been travelling to the rear of the Ford sedan, braked heavily but could not avoid colliding slightly with the Ford F100 after it came to rest on the incorrect side of the roadway.
>
> An examination of the collision scene and surrounding roadway failed to located (sic) any faults with the roadway or obstacles that could have contributed toward the cause of this collision.' [57]

4.24. Senior Constable Atkins stated that Raymond McKinnis could not be interviewed about the collision because he was said to suffer from severe post traumatic stress

[54] Exhibits C18a, C18b
[55] Transcript, Page 539, Exhibit C41f
[56] Exhibit C48, Attachment F
[57] Exhibit C30

disorder as a result of the collision. A recent interview with Mr McKinnis has confirmed that his condition has failed to improved sufficiently to enable him to give evidence. He claims to have no recollection of the collision[58].

4.25. There is no evidence which suggests that the vehicle drive by Mr McKinnis left the sealed road before the collision. I accept the evidence from Mr Smith that the vehicle appeared to lose control without travelling onto the unsealed shoulder.

4.26. Prosecution arising out of the second fatal collision

Police records indicate that a preliminary opinion was formed that the collision occurred as a result of inattention or failure to exercise due care by Mr McKinnis[59]. An examination of Court records reveals that Mr McKinnis was charged and convicted of this summary offence in June 2002. The penalty imposed included a fine and licence disqualification for three months. The charge was uncontested. I assume that the matter was prosecuted on the basis that there was no obvious explanation for loss of control of the vehicle, other than through inattention or a failure to exercise due care. I find that an alternative explanation has been established by evidence during this Inquest.

4.27. Vehicle examination

A mechanical examination of the vehicles concerned in this collision was conducted by police mechanic Elliot McDonald. The vehicle driven by Raymond McKinnis on the day of the collision was found to have been in reasonable condition before the collision. No mechanical defect was detected which would have contributed to or caused the collision. No defects were found during examination of the other two vehicles concerned in this collision[60]. I accept the opinions expressed by Mr McDonald in his reports concerning examination of these vehicles.

4.28. Analysis of the Second Fatal Collision by Christopher Hall

Mr Hall calculated that this collision occurred approximately 15 metres north of the southern end of the Armco barrier which extended along the western side of the roadway[61]. By reference to witness reports, the final resting positions of the vehicles and the relative mass of the vehicles, Mr Hall considered that it was unlikely that Mr McKinnis was driving in excess of 80 kilometres per hour prior to the collision.

[58] Exhibit C55
[59] Exhibit C45
[60] Exhibits C19a, C19b, C19c
[61] Exhibit C50

He conceded that an additional 5 kilometres per hour might be considered reasonable to account for the fact that the vehicle was travelling downhill as it entered the right-hand curve. I accept Mr Hall's opinion concerning the speed travelled by Mr McKinnis prior to the collision. Even at 85 kilometres per hour, he was travelling well within the applicable 100 kilometre per hour limit.

4.29. As indicated above, Mr Hall considered that a clockwise yaw condition developed in the vehicle driven by Mr McKinnis before the collision while he was negotiating the sweeping right-hand bend. In Mr Hall's view, the loss of stability most likely occurred in the same general area as the other two fatal collisions and was associated with very low skid resistance as well as a road undulation[62].

4.30. Grip testing, which took place about two weeks later, confirmed that the skid resistance levels along the eastern carriageway in that location, were consistently below the recommended intervention level for a road of that nature. Having considered the evidence on this topic, I find that the results revealed the potential for this road to become dangerously slippery in wet weather. Mr Hall explained that at a speed of 80 kilometres per hour, one would not expect loss of traction even where the skid resistance levels were as low as they were in this location. But in his view, where other factors combined with the low skid resistance levels, loss of traction might occur even at 80 kilometres per hour. One such factor, according the Mr Hall, might be a slight vertical movement of the vehicle whilst travelling over an undulation like the one which Mr Hall observed along this stretch of road in May 2004.

4.31. Mr Hall considered that another factor resulting in lost traction in combination with the low skid resistance levels, might be a change in the turning radius through the curve. Mr Hall also acknowledged that some four-wheel drive tyres, such as those on the vehicle driven by Mr McKinnis, are less effective on wet roads than standard domestic tyres[63].

4.32. I accept Mr Hall's conclusion that if the skid resistance had been at or above the 'intervention level' (0.45), it was likely that Mr McKinnis would not have lost control. Mr Hall considered that the counter steering reaction was inappropriate, but it had to be viewed in context as an emergency reaction during the 'agony of the

[62] Exhibit C50
[63] Transcript, Page 770

moment'[64]. I accept Mr Hall's assessment of the situation and refer to this topic again when I discuss the role of 'Electronic Stability Control' devices in motor vehicles.

4.33. Because Olivia Hunt was said to be wearing a lap seat belt at the time of her death, an opinion was sought from Mr Hall about whether or not this might have contributed to the level of forces imposed upon the child during the collision. In Mr Hall's view, the magnitude of the forces and deformation to the right side 'pillar' and dashboard of Mrs Hunt's vehicle was high. He was unable to determine whether or not a lap sash seat belt would have significantly reduced the level of forces imposed upon her to the extent that she might have survived the collision. He did comment that lap belts are not recommended for front seats because they do not prevent forward head extension[65]. I endorse this comment.

4.34. The evidence enables me to find that the collision which resulted in the deaths of Charmaine Hunt and Olivia Hunt occurred in accordance with the explanations and opinions provided by Mr Hall.

4.35. Communication between Police and Transport SA following the second fatal collision

At 10:19pm on 12 November 2001 police faxed their 'ABC' sheet of information concerning this fatal collision to Transport SA, Head Office, Walkerville. This brief communication described the collision as a 'head-on' collision 1.3 kilometres south of Justs Road at Sellicks Hill in an area with a speed limit of 110 kilometres per hour. By reference to other evidence however, I find that the applicable speed limit was 100 kilometres per hour[66]. The bitumen surface was said to be wet after recent rain on a left bend for northbound vehicles. Under the heading 'police opinion as to possible cause' are the words 'inattention/due care'[67].

4.36. Action taken by Transport SA following the second fatal collision

After receiving the above facsimile, Mr Lippett's Road Crash Information Unit generated a Fatal Crash Notification slip to advise the Eastern Region about the collision. My Wynne acknowledged that he would have received the notification and then asked Trevor Sachse to complete a fatal accident report to see whether any maintenance work was required. He made no link with the previous collision in May 2000.

[64] Exhibit C50
[65] Exhibit C50, Transcript, Page 774
[66] Exhibit C18a, C48, Attachment E
[67] Exhibit C51b

4.37. Trevor Sachse acknowledged that he would have received a brief verbal instruction from Mr Wynne about where the collision occurred[68]. When he attended the site and completed his report on 13 November 2001, he found yellow painted markers made by police the previous day and he measured the location by reference to maintenance marker posts at 20.35. As with the first fatal collision in this location, Mr Sachse took photographs and completed the report as best he could, relying partly on the police markers and what he had read about the collision in the newspaper[69]. He conceded that generally he chose to do inspections in dry weather and he did so on this occasion. After inspecting the area, he found no defects which warranted maintenance work[70]. When asked whether he gave consideration to the fact that the collision site was only metres away from that of the first fatal collision, Mr Sachse answered as follows:

> 'No, actually, I didn't think about the accident at all. I just went out there to fill out the form.' [71]

4.38. Mr Wynne acknowledged that following receipt of Mr Sachse's report, they would have discussed it and then decided that there was no maintenance required[72].

4.39. Letter Sent by Peter and Christine Raper to Dean Brown MP

Following this second fatal collision, Noel Raper's son, Peter Raper, documented his family's concerns about the road at Cactus Canyon. On 14 November 2001, Peter Raper sent a letter to the Deputy Premier, the Honourable Dean Brown MP as follows:

> 'On Monday 12th November 2001, there was a terrible accident on this section of road and consequently a mother and daughter are both deceased and two other sisters fighting for their life in hospital.
>
> I am writing to you on behalf of the local Fleurieu people and other road users. This section of road that I mentioned above, known as Cactus Canyon, which is between Myponga and Sellicks Hill, needs to be 'upgraded'. As mentioned, the most recent accident has left a young family devastated by death and injury. I can only imagine what this would be like if this happened to my wife and young girls. My deepest sympathy goes to that family and the other people involved, which include all rescue workers, etc.
>
> This section of road has seen many cars 'go out of control' on it. The Myponga CFS advises the following,

[68] Transcript, Page 651
[69] Transcript, Page 655
[70] Transcript, Page 656, Exhibit 48e
[71] Transcript, Page 691
[72] Transcript, Page 534, Exhibit C48e

1999	2000	2001	(to date)
15	20	13	Number of accidents attended
4	5	3	Number at Cactus Canyon

The CFS attended, in total 48 accidents in the last 3 years, with 25% of them being at Cactus Canyon. We also need to take into account that Sellicks CFS attends accidents there and the 'near misses' or cars that regain control and go on their way. When you are travelling on the road coming from Myponga the road sweeps to the left and goes downhill, with several undulations and the camber maybe not quiet (sic) right the vehicles weight can shift and control is difficult to maintain. If you are travelling to Myponga from Sellicks Hill, it goes the opposite way, and sweeps right and up hill, undulations and the camber questionable but also the road edge is sharp and broken where the shoulder starts. With all this and some rain, this section of road is 100x's worse.

I have listed hereunder a few suggestions, which I think could lesson the potential for accidents and victims and would like them to be considered,

Short term (2 – 3 weeks)

1. Bold signage *undulating, *slippery when wet, *narrow road
2. Speed reduction and enforce it
3. Rumple strips on the side, middle and across to get attention

Medium term (2 – 3 months)

1. Resurfacing – right of the camber, take out undulations and bitumen right across from guard rail to guard rail

The short term points wouldn't cost much and could be implemented quickly, with the medium term point, it may cost more however I don't think you could put a $ figure on any accident that claims lives on innocent people and my deepest sympathy once again goes out to that family.

There maybe more that can be done. I am not a road engineer and I am purely making some suggestions to try and restrict the number of casualties this section of road takes. This is my opinion but I am sure I speak on behalf of many others, so I would appreciate if you could consider my request and advise me on same so quick and responsive action can be taken before it is too late for someone else's family.'[73]

4.40. Letter from Dean Brown MP to Minister for Transport 21 November 2001

On 21 November 2001, the Honourable Dean Brown MP wrote to the Honourable Diana Laidlaw MLC, Minister for Transport and Urban Planning, attaching a copy of Mr Raper's letter. Mr Brown endorsed the concerns expressed by Mr Raper as follows:

[73] Exhibit C39, p268

> 'You would be aware that the most recent accident was fatal and I request that urgent attention be given to this portion of the road to ensure that it is made as safe as possible and that appropriate warnings are placed for motorists using the road.'[74]

4.41. Ministerial request for information from Transport SA employees

The receipt of Mr Brown's letter created a flurry of activity within the Department from 23 November 2001. An email was sent to the Manager of the Eastern Region of Transport SA, Peter Tymukas, on behalf of the Minister, attaching a copy of Mr Brown's letter and Mr Raper's letter. The email was regarded as a 'ministerial' which required a response and a draft reply for the Minister's consideration by 5 December 2001.

4.42. A bundle of Transport SA documents was introduced into evidence, following a Freedom of Information application by solicitors for Ms Hearl (the driver involved in the third fatal collision)[75]. The material includes some of the email communications between respective members of the Eastern Region in contemplation of a draft reply for Minister Laidlaw. These documents should have been provided in advance of the Inquest by representatives of Transport SA in answer to a summons for relevant documentation. The failure to provide relevant material in a timely fashion reflects poorly upon the Department and upon those advising the Department.

4.43. According to Mr Tymukas, he instructed planning engineer Andrew Excell, to investigate the collision on November 2001. Information was sought from Damien Edwards, Kevin Wynne and Mark Moreland who were given a range of tasks seeking information including an analysis of all accidents in the area, the maintenance history for that section of road, the camber of the road, appropriate speed zoning and signage. According to Mr Tymukas, because he was ultimately responsible for 'signing off' on replies to the Minister, he needed to be aware of what was happening. He understood that the Minister expected his staff to conduct a full investigation into the matter[76]. According to Mr Tymukas, he formed the impression from what staff were telling him that the collision did not occur in the same location as the fatal collision in May 2000[77]. It is difficult to understand how he could have formed this view when one

[74] Exhibit C39, p267
[75] Exhibit C39
[76] Transcript, Pages 920, 914, Exhibit C39, p266
[77] Transcript, Page 933

considers the contents of Mr Sachse's Fatal Accident Reports which included photographs of the area[78].

4.44. Inspection of the road surface by Mark Moreland, 30 November 2001

Mark Moreland was a reseal coordinator who worked in the eastern region from about May 2000 and had worked in the Department for 33 years. In November 2001, he was preparing programs which identified areas of the road network requiring attention. After reading documents obtained via the Freedom of Information application, Mr Moreland acknowledged that he attended the site at Cactus Canyon on 30 November 2001, although he had virtually no recollection of it[79]. He took photographs and drew a detailed sketch setting out the features of the road. He noted on his sketch that the 'shoulder' along the roadway should be sealed[80].

4.45. Mr Moreland explained in evidence that he recorded the location of the collision at 20.46 by reference to maintenance marker posts[81]. According to Mr Moreland, he noted some deformation in the surface of the road to a depth of 15mm. There was some 'pumping' in the bitumen which he explained was a defect where water collects upon the surface of the road after wet weather. He also noted some undulations on the metropolitan side of the road at MMP position 19.5 up to MMP 20. Whilst the camber of the roadway was the subject of some comment during evidence and in various documents, it does not appear to be a relevant factor in the three fatal collisions and therefore it will not be discussed in the course of these Findings.

4.46. According to Mr Tymukas, when the collision occurred on 12 November 2001, he assumed that the unsealed shoulders of that portion of road may have contributed to it, although he did not seek information to confirm whether it was a relevant factor or not. According to Mr Tymukas, a list of roads requiring 'shoulder sealing' had been drawn up in the Eastern Region and the work was undertaken subject to available funds. The road along Cactus Canyon was one of those on the list. After the collision in November 2001, Mr Tymukas claimed that he tried to obtain funding for the

[78] Exhibit C48, attachment E
[79] Transcript, Page 1091
[80] Transcript, Page 1081, Exhibit 39a
[81] Transcript, Page 1072

shoulder sealing work on a higher priority basis. Funds were ultimately made available, but not until April 2002[82].

4.47. Mr Tymukas did not seek any information from police or the CFS concerning the circumstances of the collision. Nor it seems did anyone else within the Department who was involved in the 'investigation'. Had Mr Tymukas successfully undertaken this type of inquiry, he could have learned that the surface of the road was wet and slippery and that the southbound vehicle, whilst travelling well within the speed limit, lost control without going onto the unsealed shoulders of the roadway, whilst negotiating the sweeping right-hand curve. With this information, he may have thought about arranging to have the surface of the road tested to determine whether the skid resistance levels were a concern. Even without this information, the contents of Mr Raper's letter alone should have prompted a request by Mr Tymukas or someone on his behalf to have the road tested to determine its skid resistance levels.

4.48. Skid resistance testing conducted on 7 December 2001

Grant Mackey was the Technical Support Manager of Materials Technology Section of Transport SA and was concerned in management of the road network. According to Mr Mackey, during 2000, staff in his section conducted field-testing with a machine called a 'grip' tester designed to determine skid resistance levels along a section of roadway.

4.49. Mr Mackey explained that the grip tester is towed behind a vehicle driven by an operator and works as follows:

> 'It's a small three-wheeled trailer that has two towing wheels and a third test wheel. The test wheel is a smoothed, finished tyre which is chain driven off the two towed wheels and rotate at 85% of the rotation of the trailer wheels causing it to skid slightly all the time as it travels along the road surface. Water is laid on the road in front of the tyre to give it a wet surface and on the small stub axle of the test tyre there is a series of strain gauges, vertical and horizontal, that measure these various forces as the tyre skids over the road surface and these two sets of strain gauges, the signal that comes from them are used to generate what is called the grip number or the skid resistance number.' [83]

[82] Transcript, Pages 914-915
[83] Transcript, Pages 721-722

Grip Tester[84]

4.50. Mr Mackey explained that the distance between the two outer wheels of the grip tester is approximately 600mm. The target speed stipulated by the manufacturer and used during testing was 50 kilometres per hour, although as Mr Mackey and other witnesses explained, this speed is specifically designed to produce accurate skid resistance results and it is not necessary to test at the higher applicable speed limits for a given stretch of roadway. The machine is taken on runs which are intended to measure the skid resistance levels in the wheel paths where vehicles most commonly track along the roadway.

4.51. Mr Mackey stated that when establishing the grip testing program for the Department, he visited the Eastern Region, gave a demonstration of the equipment and provided an information session to staff. Mr Mackey claimed that he began to examine some of the accident records held in Mr Lippett's Road Crash Unit , when the collision on 12 November 2001 came to his attention[85]. According to Mr Mackey, he retrieved the information provided in the police facsimile and after reading it organised his group to conduct skid resistance testing at Cactus Canyon[86]. Mr Mackey originally stated in evidence that it was Mr Moreland who suggested that this area be tested when the Regions were invited to make suggestions for suitable sites to test[87]. When Mark Moreland was asked whether he discussed skid resistance testing at Cactus Canyon at

[84] Exhibit C48, p108
[85] Exhibit C41c
[86] Exhibit C51b, Transcript, Page 896
[87] Transcript, Page 720

that time with anyone from Transport SA, he said that he could not recall, but would be surprised if he did[88].

4.52. In the Department's 'Report to the Coroner', it is suggested that testing was undertaken on 7 December 2001 as a result of a request from the Manager of the Road Crash Information Unit, Mr Lippett[89]. Unfortunately, when Mr Lippett was giving evidence about how the road crash database was managed, this topic was overlooked. The evidence does not enable me to determine who initiated the testing.

4.53. Regardless of how it came about, I find that skid resistance testing was conducted on 7 December 2001 between MMP 20 and a distance of 700 metres south. The grip tester made two 'runs' along both lanes. I find that the purpose of the test was to discover the extent to which the road might become dangerously slippery in wet weather[90].

4.54. When the results were interpreted, they were significantly below the level at which further investigation or intervention was indicated. The road at Cactus Canyon is classified as a rural arterial road. The road was originally constructed in 1968 and in 1982, was treated with a 're-seal' which was expected to have an effective life of between 10 and 15 years. By December 2001, the surface was at the end of its intended life, a situation which the Department conceded also applied to a high proportion of the road network in South Australia[91]. For this type of road, the minimum grip number below which it was recommended to commence an investigation was 0.45. The mean grip number recorded for the eastern or southbound carriageway at Cactus Canyon was 0.36. Along the western carriageway of the same stretch of road, the mean grip number recorded was 0.40, which was also below the intervention or investigatory level, but to a lesser extent[92].

4.55. For both runs conducted, the eastern carriageway gave results between 15 and 20 percent below the recommended investigatory level and they were consistently below that level. According to Mr Mackey, they were falling into an area of 'concern'[93]. Mr Hall regarded the results as very low for 'general traffic conditions'[94].

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[88] Transcript, Page 1091
[89] Exhibit C48a
[90] Exhibit C52
[91] Exhibit C48, Transcript, Page 1180, 1210
[92] Exhibit C48, p70
[93] Transcript, Page 728
[94] Transcript, Page 768

4.56. Given the combination of features relevant to this stretch of road, particularly the sweeping right-hand curve for southbound motorists, some form of re-surfacing treatment should have been contemplated. As an interim measure, motorists needed to be alerted appropriately to the hidden dangers of driving along that section of road in wet weather. Speed restriction should also have been considered. These interim measures were inexpensive and could have been implemented without delay. As Mr Tymukas indicated, the Department had the capacity to conduct a test to determine what speed was advisable for motorists negotiating this stretch of road, but this was not conducted until July 2005[95].

4.57. Failure to alert the Eastern Region to the skid resistance results

Mr Mackey claimed that he requested staff in his section to fax the results of the skid resistance testing at Cactus Canyon to the Eastern Region so that they could determine what remedial work needed to be done. Mr Tymukas and Mr Wynne claimed that they were unaware of the results from the grip testing at Cactus Canyon on 7 December 2001 until after the next fatal collision in March 2002. Mr Moreland claimed to be unaware of the results. A journal, said to list all facsimiles received by the Eastern Region at that time, was examined during the Inquest. There is no indication in the journal that the skid resistance results were received[96]. An email communication dated 25 September 2002 (amongst the 'Freedom of Information' documents) from Mr Tymukas to colleagues in the Department, contains a statement that the December 2001 results were not passed on to the Region by Mr Mackey's unit[97]. Yet in the report to the Coroner, dated 9 February 2006 prepared by Keith Walter on behalf of the Department, there is no mention of this breakdown in communication. Instead, the Department's position is expressed as follows:

> 'As previously noted, on completion of the skid resistance testing in December 2001, W5-20 and W8-7 "Slippery when Wet" signs were installed on 16 January 2002 to provide warning for road users whilst further investigation (as detailed above) was undertaken and funding was sought to provide a solution to the poor skid resistance of this section of road. Funding for shoulder sealing and some form of surface treatment was being sought, however this was dependent on determining statewide priorities and the fatal crash of March 2002 occurred whilst funding was being sought.[98]

[95] Transcript, Page 983, Exhibit C48, p62
[96] Exhibit C51e
[97] Exhibit C39, p8
[98] Exhibit C48, p8

4.58. Having reflected upon the evidence on this topic, I find that the December 2001 skid resistance results were not conveyed to the Eastern Region until after March 2002. The failure to communicate the results to someone responsible in the Eastern Region reflects poorly upon Mr Mackey's section and the Department generally. Given the importance of the matter, it would have been appropriate for Mr Mackey to discuss the results directly with Mr Tymukas in a timely fashion. I also find that the report to the Coroner on this topic is misleading to say the least.

4.59. According to Mr Mackey, he knew nothing about the investigations being conducted within the Eastern Region to examine matters arising from Mr Raper's letter. It seems remarkable that this testing could have occurred quite independently of the investigation, at the very time when the Minister was seeking relevant information about the safety of this stretch of roadway.

4.60. On the same day that skid resistance testing was being conducted on 7 December 2001, Mr Tymukas endorsed a draft letter for the Minister to respond to Dean Brown MP's concerns set out in his letter of 21 November 2001[99]. Ultimately, a letter of response was signed by the Minister which included text from the endorsed draft, some of which I find was incorrect and misleading[100]. I say more about this topic later in these Findings.

4.61. <u>Misinterpreted instructions to install 'Slippery When Wet' Signs</u>

A decision was made by management within the Eastern Region to install 'slippery when wet' signs as a result of the Minister's inquiry. I find that the decision was taken without any knowledge of the skid resistance results. It was a sensible short term response, pending a more detailed analysis of the road, but I note that without knowing what the skid resistance levels were, the decision making process departed from the Department's own operating guidelines, which read as follows:

> 'The slippery surface sign (W5-20) is probably one of the most misused signs in this series. It should be used to warn of a condition where the pavement surface may be slippery due to the low skid resistance, or where a significant drainage flow runs across the road after heavy rain.
>
> To ensure consistent use of the signs the pavement shall be tested to determine the skid resistance and texture values before the sign is installed.

[99] Exhibit C39, pp260-261
[100] Exhibit C39, p254

> Where these values fall below the recommended intervention levels of skid resistance or the surface texture for the speed environment and road category the sign shall be installed until the pavement surface can be improved.'[101]

4.62. The guidelines also state that the slippery sign should only be used if skid resistance values had been proven to cause the crashes. The 'when wet' supplementary plates were said to be required in situations where water 'ponds' on the road.

4.63. Mr Wynne was responsible for making the arrangements to install the signs. The contract for the work specified that two 'slippery when wet' signs were to be installed from MMP 20.18 to MMP 20.60. By reference to a tax invoice prepared by the contractors, Mr Wynne understood that the work was done on 19 December 2001[102]. He said that he assumed that the contractors would install a slippery sign (coded 'W5-20') together with a sign beneath this carrying the words 'when wet', (coded 'W8-7'). He conceded that there was no system in place to check whether the work was done properly[103].

4.64. When the third fatal collision occurred in March 2002, photographs were taken during the investigation which revealed that on the eastern side of the roadway, for southbound drivers, a 'slippery' sign was attached to the pre-existing 'cross wind' sign rather than on a separate sign bearing the words 'when wet'[104]. This fact was apparently not appreciated by staff from Transport SA until it was pointed out to witnesses from the Department during the Inquest. When Senior Constable Syrus from the Major Crash Investigation Unit was shown the photograph depicting this sign during his evidence, he interpreted the sign to mean that if there was cross wind, it could be slippery[105]. If a police officer interprets the sign in this manner, it is reasonable to assume that motorists might do the same.

4.65. When this topic was first explored during Mr Wynne's evidence, counsel for Transport SA suggested that the signs were properly installed, but that they might have been tampered with subsequently. On further reflection, this suggestion was abandoned. Having considered the evidence on this topic, I find that the contractors installed 'slippery' signs, by incorrectly attaching them to the pre-existing cross wind signs. The additional 'when wet' signs were never installed. This was a serious error

[101] Exhibit C48, Attachment F
[102] Transcript, Page 544, Exhibit C41h
[103] Transcript, Page 525
[104] Exhibit C27b
[105] Transcript, Page 390

which should have been detected and rectified. It seems that no-one within the Department contemplated how the new sign would work in conjunction with the pre-existing cross wind sign.

4.66. Peter Tymukas said that he assumed that the new signs had been correctly installed and for that reason he inadvertently misled the Minister about what was being done to warn motorists that the relevant stretch of road might be slippery in wet weather. If staff in the Eastern Region were familiar with the Department's guidelines for this type of signage, someone should have thought about making arrangements to have the skid resistance levels tested in that location. In doing so, the Region would have discovered that the site was tested co-incidentally on 7 December 2001, giving results which demanded an appropriately prompt response.

4.67. When Mr Tymukas was questioned about what action he would have taken had he been provided with the December 2001 skid resistance test results in a timely fashion, he claimed that he would have re-tested the area to make sure that those results were correct and he would try to interpret them and have funds reallocated to enable the road to be resealed with a spray reseal[106]. He said that he would initiate an investigation to determine the extent of the problem and then would have had to weigh this up with other priorities competing with it. He speculated that by the time funds had been secured and the tender process had closed for the work to be done, it might not have been completed until possibly April 2002[107]. According to Mr Tymukas, spray sealing was a lighter resurfacing treatment which was cheaper than an asphalt overlay, but could only be done in the warmer months. He acknowledged that appropriate warning signs would be an affordable immediate response[108]. I return to the topic concerning how the Department should have reacted to the December 2001 skid resistance results later in these Findings.

4.68. <u>Letter from Minister Laidlaw responding to Dean Brown MP</u>

Minister Laidlaw responded to Dean Brown MP's letter on 28 December 2001. The Minister's letter was based upon part of the draft response, endorsed by Peter Tymukas on 7 December 2001. The significant portion of the letter reads as follows:

> 'I am advised by Transport SA that, at this stage, it is not known if wet weather conditions contributed to the cause of the crash. However the crash location will be investigated to determine if improving the road surface and cross section could improve

[106] Transcript, Page 977
[107] Transcript, Page 980
[108] Transcript, Pages 926-927

> the safety to motorists travelling to Cactus Canyon. As part of this investigation Transport SA will contact the SA Police and CFS. The results of the investigation will not be known until March 2002 - and I will write to you again as soon as the outcome of the investigation is known. In the meantime, I am pleased to advise that Transport SA will install the suggested 'slippery when wet signs' by end of January 2002.'[109]

4.69. At the time this letter was sent, there was information available to the Department which suggested that wet weather conditions contributed to the collision and that the skid resistance levels along this stretch of road were very low. The evidence received during the Inquest enables me to infer that no-one in the Eastern Region of Transport SA at any time during the investigation, requested information from police or the CFS concerning the circumstances of the collision. I find that Minister Laidlaw and ultimately Dean Brown MP, were misled about the nature of the investigation which was being conducted and also about the installation of the 'slippery when wet' signs.

4.70. Pattern of crashes in the Cactus Canyon region of Main South Road

When questioned about what he learned during the investigation about the pattern of vehicle accidents at Cactus Canyon, Mr Tymukas said that he relied upon information from engineer Damien Edwards, who was tasked by Andrew Excell to research this topic. Neither of these men gave evidence at the Inquest. Mr Edwards is said to have reported that between 1996 and 1999 there had only been two accidents in that location, and not the number which Mr Raper had mentioned in his letter[110]. A careful examination of records within Transport SA, but more particularly within the police department, reveals a much more serious pattern of crashes in that location. Mr Tymukas acknowledged that when preparing to give evidence, he was provided with additional departmental records which showed that collisions had been reported in incorrect locations, which meant that they had been overlooked during the investigation[111].

4.71. According to data provided in evidence by Transport SA, there were 8 crashes recorded between MMP 20 and MMP 21 of Main South Road between early 1996 and May 2000 when the first fatal collision occurred[112]. Six of these are recorded as occurring in wet weather.

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[109] Exhibit C39, pp254, 261
[110] Transcript, Pages 996, 1019, Exhibit C48a
[111] Transcript, Page 1021
[112] Exhibit C48, p12, Exhibits C47d, C45

4.72. The South Australia Police Department records indicate that a larger number of collisions occurred in this vicinity but because of discrepancies in the description of the precise location of some of these collisions, they have not been detected in the Transport SA's Road Crash Register. An amalgamation of the records illustrates an alarming pattern of vehicle collisions in this general location. Before the first fatal collision, the subject of this Inquest, there appears to have been approximately 17 collisions since January 1996. Information obtained from police vehicle collision reports, suggests that the large proportion of these collisions occurred whilst motorist were negotiating the bend in the Cactus Canyon area and that these collisions were associated with wet road conditions causing the driver to lose control of the vehicle. Some drivers were said to lose control when driving in a southerly direction whilst others lost control travelling in the opposite direction.

4.73. In hindsight, it appears that even before Mr Rowe died on 24 May 2000, there was information available to the police department which if it had been recorded with more accuracy and consistency, might have alerted police and Transport SA to an ongoing pattern of collisions in this particular location, confirming what was suggested by Noel Raper and his son Peter.

4.74. The summary of crashes provided by Transport SA in its report to the Coroner, lists 16 crashes between MMP 20 and MMP 21 on Main South Road between January 1996 and August 2005. This database printout includes the three fatal collisions, the subject of this Inquest, as well as non-fatal collisions and collisions where no injuries were reported[113]. According to this list, there was no collision in that location between 24 May 2000 and the time of the fatal collision on 12 November 2001. Police crash reports obtained by Senior Constable Syrus, suggests that there were collisions occurring in this location on 6 July 2000, 17 December 2000, 21 March 2001, 18 May 2001, 27 July 2001, 21 August 2001 and 10 November 2001, only two days before the fatal collision claiming the lives of Charmaine Hunt and Olivia Hunt.

4.75. According to Senior Constable Syrus, to obtain these police reports it was necessary to search the police database by using a variety of search names including Cactus Canyon, Sellicks Hill and Myponga. These reports give descriptions of locations by reference to distance from nearby intersections, hence the inconsistency in the

[113] Exhibit C48, p12

recorded locations of collisions[114]. The collision occurring on 10 November 2001, two days before the second fatal collision, was described as follows:

> 'Unit 1 proceeding South on Main South Road at Sellicks Hill. Driver lost control of vehicle on wet road and collided with embankment.'[115]

4.76. According to the police report, this collision was attributed to inattention or failure to exercise due care and a decision was made to prosecute the driver.

4.77. On 17 November 2001, five days after Mrs Hunt and her daughter Olivia were killed in that location, a collision was reported by the police on 'Main South Road, Cactus Cannion (sic) Bridge, Myponga'. The summary of this collision seems to fit a pattern in which drivers have lost control in wet weather:

> 'Unit two was parked on gravel shoulder of Main South Road facing N/E. The driver was at the time seated in the front passenger seat. Unit two was travelling south west taking a right hand bend. Raining at the time. He lost control, slid sideways, collided into the barrier into the front of unit two. Driver of unit two banged her head onto the windscreen.'[116]

4.78. This crash is included in Transport SA's 'summary of crashes' and is attributed to 'inattention' by the driver. Another entry in the summary refers to a collision on 6 January 2002, again attributed to 'inattention'. The police report states that the driver travelling south on Main South Road at Sellicks Hill lost control and left the roadway colliding with an embankment. It was raining at the time and the roadway was wet[117]. One can only speculate about how many drivers have been prosecuted for driving offences in this location in circumstances similar to that of Mr McKinnis.

4.79. Mr Tymukas acknowledged that he could have made a request to Mr Lippett to provide him with relevant accident reports received after the November 2001 collision, but he did not think of it. After reading some police reports for the first time during the Inquest, Mr Tymukas conceded that the information disclosed in them would have influenced how he responded to the 'ministerial' following the fatal collision in November 2001[118]. I find that the 'investigation' undertaken by Mr Tymukas was compromised by the failure of staff to adequately interrogate the road crash unit database. It was also compromised by the deficiencies in the database itself and the failure to seek relevant information from the police.

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[114] Exhibit C45
[115] Exhibit C45
[116] Exhibit C47c
[117] Exhibit C47d
[118] Transcript, Pages 1029-1031

5. Events concerning the death of Peter James Ferguson

5.1. The third fatal collision - 25 March 2002

At about 5:30pm on Monday 25 March 2002, Wolfgang Baumer was driving his Holden Commodore station wagon in a southerly direction along Main South Road at Sellicks Hill. It was drizzling with rain and the road was wet. He was aware that a woman driving a Holden Commodore station wagon was travelling behind him along the Southern Expressway. According to Mr Baumer, as he continued along Main South Road he travelled within the 100 kilometres per hour speed limit as did the female driver, who remained about 100 metres behind him[119].

5.2. When Mr Baumer approached the right hand bend to pass through Cactus Canyon, he noticed a couple of slight indentations or dips in the roadway and as he hit one of these dips he felt the back end of his vehicle lose traction momentarily[120]. He described this sensation as like a 'twitch'. As the vehicle moved very slightly to the left he held his breath and clung to the wheel[121]. He maintained control of his vehicle through the bend not withstanding this momentary loss of traction, but he looked in his rear vision mirror to see what would happen to the Commodore behind him. When he first looked, he saw that the woman's vehicle was in the middle of the road. He then heard a loud bang when the vehicle collided with an oncoming vehicle causing debris to fly into the air[122]. At the same time Mr Baumer noticed a second northbound vehicle hit the rear of the vehicle in front of it[123]. Mr Baumer reversed back to the collision scene to provide assistance.

5.3. The driver of the Holden Commodore station wagon was Debra Hearl. Her vehicle collided with an oncoming Ford Meteor sedan, driven by 46 year old Peter Ferguson. Debra Hearl sustained serious injuries which required hospitalisation. Mr Ferguson sustained fatal injuries in the collision and died at the scene.

5.4. Mr Ferguson's two passengers, Norman Stanbridge and Phillip Jennings, suffered serious injuries and were treated at the scene before being taken to the Flinders Medical Centre. A third vehicle, a blue Ford Falcon sedan, driven behind Mr Ferguson by Denise Wadsworth, collided with Mr Ferguson's vehicle after she

[119] Transcript, Page 249
[120] Transcript, Page 233
[121] Transcript, Page 247
[122] Exhibit C36
[123] Transcript, Page 245

was unable to brake in time to avoid contact. Mrs Wadsworth suffered relatively minor injuries and shock.

5.5. Post mortem examination of Peter Ferguson

A post mortem examination of Peter Ferguson was conducted by Forensic Pathologist Professor Roger Byard on 27 March 2002 at the Royal Adelaide Hospital mortuary. Dr Byard attributed the cause of death to bilateral rib fractures with haemothoraces. As Dr Byard explained in his report, 'haemothoraces' is the term used to describe haemorrhage into the pleural spaces associated with collapse of the underlying lungs. Professor Byard's examination revealed multiple injuries including the following:

'1. Flail chest with:
   (i) Bilateral rib fractures
   (ii) Bilateral haemothoraces
   (iii) Laceration of the lower lobe of lung
   (iv) Contusion of the heart
2. Superficial laceration of the left atrium of heart
3. Compound fracture of the right femur
4. Fractures of the left femur, right tibia and fibula, right radius and ulna, left humerus and left side of the mandible
5. Minor subarachnoid and intraparenchymal cerebral haemorrhage
6. Mesenteric bruising.' [124]

5.6. I accept Professor Byard's opinion as to the cause of death and I find that Mr Ferguson's injuries were sustained in the motor vehicle collision on 25 March 2002. A sample of blood taken from Mr Ferguson was analysed by Heather Felgate from Forensic Science SA and was found to contain no traces of common drugs or any alcohol[125].

5.7. Debra Hearl

Ms Hearl, aged 32 years, was interviewed by Senior Constable Robert Syrus on 15 May 2002 about the circumstances leading to the collision. When interviewing Ms Hearl, Senior Constable Syrus was considering whether to recommend that charges, including 'causing death by dangerous driving' might be laid against her. Ms Hearl stated that she had no idea how the collision occurred because she had no memory of it at all. Ms Hearl had struck her head during the collision and lost consciousness. She was in intensive care for a week and claimed to have no

[124] Exhibit C22a
[125] Exhibit C23a

recollection of that experience either. Ms Hearl sustained damage to her diaphragm, a broken wrist, shattered leg and cracked vertebrae. According to Ms Hearl she could remember shopping on the morning of the collision. She stated that she did not consume any alcohol that day and believed her vehicle to be mechanically sound with relatively new tyres fitted.

5.8. According to Ms Hearl she travelled along that section of the road on many occasions but had never experienced any problems before that day. She did say however, that in wet weather it was a bit slippery and she would drive more carefully in those conditions. Ms Hearl did not give evidence at the Inquest. In the circumstances, I accept that she is unlikely to have been able to make any further contribution, given the state of her memory[126].

5.9. Prosecution Process arising out of the third fatal collision

When Senior Constable Syrus had completed his investigation into the matter, he formed the view that the major cause of the collision in Ms Hearl's case was the slippery nature of the road. His recommendation that Ms Hearl should not be prosecuted for any offence was rejected by his superiors as well as the Director of Public Prosecutions.

5.10. A sample of blood taken from Ms Hearl was said to be 'denatured,' which rendered it unsuitable for blood alcohol analysis. According to Senior Constable Syrus, he sent the file back to the Director of Public Prosecutions for a second time, setting out his concerns that the collision was due to the slippery road, but it came back again with the opinion that Ms Hearl should be prosecuted for the offence of driving without due care. Ultimately when the matter was due to be heard, the prosecution abandoned the charge[127].

5.11. Denise Wadsworth - rear end collision with Mr Ferguson's vehicle

Ms Wadsworth had driven along this area of Main South Road for more than 19 years, three days a week. She managed a store at Yankalilla and lived at Hackham. According to Ms Wadsworth, she was driving her Ford Falcon sedan relatively slowly because of the wet weather. She believed that these were the first rains of the season which could make the road slippery[128]. After Ms Wadsworth passed roadworks at

[126] Exhibit C24a
[127] Transcript, Page 483
[128] Exhibit C34, Transcript, Page 150

Myponga, she continued in a northerly direction downhill towards a left-hand bend when she saw a station wagon approaching in the opposite direction. This was Ms Hearl's vehicle, which according to Ms Wadsworth, seemed to be travelling at about 100 kilometres per hour, or 'normal speed' within the correct lane for southbound traffic[129]. In a matter of seconds the station wagon moved onto the incorrect side of the road.

5.12. According to Ms Wadsworth, a smaller car was travelling immediately in front her in a northerly direction at about 90 kilometres per hour. She saw the brake lights of this vehicle come on when the station wagon moved onto the incorrect side of the road. When first giving an account of what she saw, Ms Wadsworth stated the following:

> 'The station wagon remained on the incorrect side of the road for only one or two seconds then moved back onto the correct side of the road. The brake lights of the vehicle in front me then went off.
>
> Almost as soon as the station wagon went back onto the correct side of the road it again went onto the incorrect side of the road but this time it moved almost fully onto the incorrect side of the road. The station wagon was so close to the vehicle in front of me that I knew that they were going to hit.'[130]

5.13. Ms Wadsworth saw the vehicles collide 'head-on but at an angle'. She slammed her foot on the brakes but was unable to stop in time and ended up spinning her car around and coming into contact with the driver's side of the car in front of her. She was quite shaken after the collision and received a minor bump on the right side of her head. When describing the movement of the oncoming station wagon, she described it as a smooth movement across the road, like a snaking movement[131]. After the collision, Ms Wadsworth noticed that men coming to provide assistance were slipping on the road and she heard them comment about it[132].

5.14. When Mr Baumer came back to the scene of the collision he found the roadway to be very slippery and despite wearing sturdy work boots, he was sliding around on the road surface. He estimated that the speed he was travelling when negotiating the bend when he momentarily lost traction, was between about 90 and 100 kilometres per hour. He stated that he travelled this route on a regular basis and had never had this experience before. He estimated that the driver travelling behind him was travelling at about the same speed that he was. Mr Baumer explained that he had previous

[129] Transcript, Page 154
[130] Exhibit C34
[131] Transcript, Pages 160-161
[132] Transcript, Page 168

experience with lost traction on a road in the Adelaide Hills, which he described as like 'aqua planing'. He described himself as an experienced driver, aware of the dangers of overcorrecting when momentarily losing traction. His own vehicle was said to be in good condition with relatively new tyres of the standard type.

5.15. Philip Jennings - passenger in Mr Ferguson's vehicle

The vehicle in front of Ms Wadsworth had three occupants. Peter Ferguson was driving, Philip Jennings was seated in the front passenger seat and Norman Stanbridge was seated behind Mr Ferguson[133]. The three men had been playing bowls at Yankalilla earlier that day. According to Mr Jennings, Mr Ferguson was driving in accordance with the speed limit and they were chatting about bowls. It had been raining and the road was wet. Mr Jennings described how he saw an oncoming vehicle move onto the incorrect side of the road directly towards them. Mr Jennings called out a warning to Mr Ferguson but the collision occurred so quickly there was no time to take evasive action. Mr Jennings confirmed that he and Mr Ferguson were wearing seatbelts at the time of the collision[134]. When Mr Jennings spoke to police about the collision initially, he said that he did not believe that there was any time for Mr Ferguson to apply the brakes or to swerve because it happened so quickly[135].

5.16. Immediately after the collision, Mr Jennings could see that his friend Peter Ferguson was seriously injured and unconscious. Mr Stanbridge was also injured and calling for help. Mr Jennings sustained a number of serious musculo-skeletal injuries including a dislocated right shoulder, torn tendons in his right arm, leg fractures and facial lacerations[136].

5.17. Norman Stanbridge - rear seat passenger in Mr Ferguson's vehicle

Mr Stanbridge gave a short statement to police on 12 April 2002 and did not give evidence at the Inquest. The last thing he claimed to remember about that day was finishing bowling and getting ready to leave. His next memory is waking up in the Flinders Medical Centre with injuries sustained in the motor vehicle collision. Mr Stanbridge suffered skull fractures, severed nerves, lacerations, right sided hearing loss and a damaged right eye, which is now permanently closed[137].

[133] Transcript, Page 208
[134] Transcript, Page 219
[135] Exhibit C35
[136] Exhibit C35
[137] Exhibit C25a

5.18. Nicholas McLelland - eyewitness to third fatal collision

Mr McLelland was driving a Telstra owned Holden Commodore station wagon in a northerly direction along Main South Road at Sellicks Beach at about 5:00pm. As he ventured downhill approaching a left-hand bend he was travelling at approximately 80 kilometres per hour. He could see three vehicles in front of him. The vehicle immediately in front of him was towing a trailer. The two vehicles further ahead are now known to be those of Ms Wadsworth and Mr Ferguson. Mr McLelland saw a Holden Commodore station wagon approaching from the opposite direction at an estimated speed of 80 kilometres per hour, suddenly veer to its right and onto the opposite side of the road colliding with the car at the front[138]. The vehicle towing the trailer moved to its right, somehow avoiding involvement in the collision and proceeded without stopping. The second vehicle driven by Ms Wadsworth moved to its right and spun 360 degrees before hitting the car in front. Mr McLelland stated that when he stopped and ran over to provide assistance, he slipped over and fell on the slippery road, even though he was wearing ridged rubber soled footwear[139]. He stated that he saw another gentleman slip on the roadway as well[140].

5.19. During the Inquest Mr McLelland attempted to elaborate upon the circumstances leading to the collision but like a number of other witnesses, was compromised by the passage of time. He did recall that on his way down to Myponga to meet a client earlier in the day, the road was slippery in the same location and he was conscious of the effect of the build up of oils and potentially dangerous conditions following the first rain after a dry spell. He noticed when applying his brakes in that area that it was difficult to control his steering. He speculated that if he had not been so mindful of that section of the road, he might well have had difficulty himself[141]. Mr McLelland added that when he tried to apply his brakes to avoid being involved in the collision, he found it difficult to keep his wheels straight and felt that he had no control[142].

5.20. Colin Weber

Immediately after the collision, Mr Weber who was driving south on Main South Road, came across the collision scene and pulled over to provide assistance. When he ran back to his car to get some surgical gloves, he noticed how very slippery the road was. In his statement provided to police four days after collision, he stated that it was

[138] Transcript, Page 277
[139] Transcript, Pages 283, 285
[140] Exhibit C37
[141] Transcript, Page 287
[142] Transcript, Page 287

like 'an ice-skating rink'[143]. Mr Weber provided valuable assistance to Norman Stanbridge until the ambulance arrived.

5.21. Noel Raper's coincidental attendance at the third fatal collision

Noel Raper came across the immediate aftermath of the collision when he was driving past on his way to meet his daughter. He was not on duty for the ambulance service or the CFS. He stopped at the scene to render assistance to ambulance and CFS members who were already there. According to Mr Raper, this collision was within about 10 metres of the earlier one in November 2001[144]. He maintained that there were so many times when he and other volunteers attended that stretch of road after collisions, that the feelings were running high about the need to do something about it[145]. Mr Raper said that he called meetings at the CFS Myponga branch to discuss the condition of the road and also successfully agitated to have articles published in the local press to draw attention to the problem.

5.22. Vehicle examination

The three vehicles concerned in this third fatal collision were examined by police mechanic Elliott McDonald over the following week. Insofar as he was able to examine those parts of the vehicles not totally destroyed in the collision, Mr McDonald concluded that the Holden VS Commodore station wagon driven by Ms Hearl had been in reasonable condition before the collision and he was unable to find anything mechanically wrong that would have contributed towards or caused the accident. Mr McDonald formed the same view about the other two vehicles although their mechanical condition is obviously less relevant[146]. I accept the opinions expressed by Mr McDonald concerning his examination of all three vehicles.

5.23. Police Investigation of Third Fatal Collision

At about 7:10pm on 25 March 2002 Senior Constables Syrus and Fuller from the Major Crash Investigation Unit attended the scene and spoke with the local police. Photographs were taken that evening to depict the damaged vehicles in the positions where they came to rest. Senior Constable Fuller noted that the road when they first examined it was wet and extremely slippery under foot[147].

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[143] Exhibit C26a
[144] Transcript, Page 324
[145] Transcript, Page 327
[146] Exhibit C28a
[147] Exhibit C27a

5.24. Senior Constable Fuller noted the applicable speed limit as 100 kilometres per hour for both north and southbound traffic. By examining the collision scene, he noted three separate impacts. The first was head on, between the Holden station wagon (Ms Hearl's vehicle) and the Ford Meteor sedan (Mr Ferguson's vehicle). The second was between the Ford Meteor and a guardrail, and the third was between the Ford Meteor and the Ford Falcon sedan (Ms Wadsworth's vehicle).

5.25. Markings from the previous fatal collision were still visible in the area and this made it difficult for Senior Constable Fuller to locate the exact points of impact. On the basis of fresh gouge marks in the road surface, he nominated the point of impact as 300 metres north of Cactus Canyon Road and 3.4 metres east of the guardrail on the western side of Main South Road[148].

5.26. Senior Constable Syrus stated that when he was examining the roadway, he considered that it was one of the most slippery roads he had been to in his capacity as a Major Crash Investigator during the 11 years he worked in that section. He noticed that other people at the scene were having difficulty with the slippery road surface as well. He said that even though he was wearing rubber soled shoes, it was like being on ice. On the basis of the evidence of eyewitnesses alone, I find that the surface of the roadway in the vicinity of the collision was exceptionally slippery when the collision occurred.

5.27. According to Senior Constable Syrus, it is commonly assumed that drivers lose control after their vehicles momentarily leave the sealed bitumen surface and travel onto the unsealed gravel verge, creating instability and possible over-correction in steering. The over-correction, often done by drivers with limited experience, causes the vehicle to enter a 'yaw' or 'snake' pattern onto the incorrect side of the road. Because he assumed that this might have played a part in this particular collision, he emphasised that he and Senior Constable Fuller looked very carefully for any sign that Ms Hearl's vehicle had moved onto the unsealed verge of the road in the area of the right-hand curve before losing control and colliding with the Ford Meteor. After a very careful search, they were unable to locate any tyre tracks or any indication that Ms Hearl's vehicle had left the sealed surface before the collision.

[148] Exhibit C27b

5.28. When Senior Constables Syrus and Fuller went back to the scene on 9 April 2002 to take photographs, they were completely satisfied that Ms Hearl's vehicle did not go off the road onto the verge before losing control[149]. I accept the view reached by the police on this topic.

5.29. Senior Constable Syrus also examined traffic movement at this location and noticed that vehicles negotiating this right-hand bend in the southerly direction moved over two dips in the road. He realised that when vehicles traversed this area, there was potential for drivers to lose traction on the slippery surface. In hindsight, it appears that this observation was very astute.

5.30. Once he had familiarised himself with the scene, Senior Constable Syrus recognised it from his previous role as an adjudicator following the fatal collision on 24 May 2000. He later retrieved that file, examined the photographs and noticed similarities in the circumstances of the two collisions, where loss of control occurred along a wet road whilst negotiating the same right-hand bend. He also familiarised himself with the circumstances of the second fatal collision in November 2001. Senior Constable Syrus then examined the police vehicle collision database going back to about 1997. He spoke with a number of drivers named in the records concerning crashes which appeared to have occurred in similar circumstances along the same stretch of roadway[150]. According to Senior Constable Syrus, he did this work, largely in his own time, because he lived in that locality and was very concerned about it. From information obtained, Senior Constable Syrus recognised an ongoing pattern, pointing to a problem with the road surface, particularly in wet weather. He is to be commended for his efforts and his initiative.

5.31. <u>Analysis of the Third Fatal Collision by Christopher Hall</u>

Mr Hall concluded that the collision resulting in the death of Mr Ferguson occurred within very close proximity to the collision which resulted in Mr Rowe's death in May 2000. The location was estimated to be approximately 15 metres north of the area where Ms Hunt collided with Mr McKinnis's vehicle in November 2001.

5.32. Mr Hall estimated that before the collision, Ms Hearl was travelling at between 90 and 100 kilometres per hour. I accept Mr Hall's opinion on this topic which is

[149] Exhibit C27b
[150] Transcript, Page 405

consistent with the eye witness accounts. I also accept his opinion that Mr Ferguson was travelling at between 85 and 90 kilometres per hour.

5.33. After examining the available evidence, Mr Hall concluded that a clockwise yaw condition developed in Ms Hearl's vehicle which was consistent with loss of traction while the vehicle was negotiating the sweeping right-hand bend[151]. In Mr Hall's opinion, if the skid resistance levels in the path tracked by Ms Hearl's vehicle had been at or above the recommended intervention level of 0.45, it was likely that Ms Hearl would not have lost control. After drawing reasonable inferences from the evidence, I find that at the time Ms Hearl's vehicle lost traction on 25 March 2002, the skid resistance levels were likely to have been below the recommended investigation or intervention level.

5.34. Having considered the evidence from Hr Hall and Mr Baumer, I find that an undulation in the road, operated as a contributing factor, leading to loss of control of Ms Hearl's vehicle. I find that if skid resistance levels had been at or above the recommended intervention level, this fatal collision is unlikely to have occurred.

5.35. Communication between Police and Transport SA following the third fatal collision

The police advised Transport SA of the collision by way of an 'ABC' facsimile, at 1:00am on 26 March 2002. This document was forwarded to Mr Lippett's Road Crash Information Unit. A brief handwritten entry summarised the collision as follows:

> 'Unit 1 Ford meteor sedan travelling south on Main South Rd has lost control and gone onto incorrect side of road and collided head on with unit 2 Holden s/wagon which was travelling north. Unit 3 Ford sedan also travelling north has lost control whilst trying to avoid collision and slid into unit 2.'[152]

5.36. The weather was noted to be 'wet'. A copy of the police journal with some additional information was also forwarded to Transport SA which included a note that the road was 'wet and slippery' and that it was unknown whether alcohol was detected in the driver of the southbound vehicle. Mr Lippett's Road Crash Unit incorrectly entered data into their system indicating that the driver had a blood alcohol reading of 0.06[153].

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[151] Exhibit C50
[152] Exhibit C51c
[153] Exhibit 51c

5.37. The day after the collision, Senior Constable Syrus telephoned the Eastern Region of Transport SA and spoke with Kevin Wynne about his concerns about the road. According to Senior Constable Syrus, Mr Wynne's response was to advise that there was a plan to seal the shoulders of the road in that location. Senior Constable Syrus emphasised to Mr Wynne that the problem was not with the shoulders but with the road surface which was dangerously slippery. According to Senior Constable Syrus, he had notified Transport SA on an earlier occasion about a potentially dangerous road elsewhere and that road was resurfaced within 24 hours of him contacting the Department. However, on this occasion, Mr Wynne is said to have responded by saying 'you can't flog a dead horse', 'there's no money in the kitty to do any more work'[154]. Senior Constable Syrus said he was very disgusted with this response and decided to take his concerns to the Minister.

5.38. Mr Wynne acknowledged that he did have a telephone conversation with Senior Constable Syrus about the slippery nature of the road at Cactus Canyon shortly after the March 2002 collision. He maintained that he would have said something to the effect that there was no current funding to do anything. He could not recall saying 'you can't flog a dead horse'[155]. He acknowledged that Senior Constable Syrus expressed the view that the unsealed 'shoulders' were not relevant to the fatal collision. Having heard evidence from both witnesses on this topic I have no hesitation in accepting the version of events given by Senior Constable Syrus about what was said during this conversation.

5.39. According to Mr Wynne, he made no record of this discussion with Senior Constable Syrus, but spoke about it with operations engineer Adrian Bolton. He was unsure whether he passed on the officer's view that the problem seemed to concern the slippery surface of the road[156]. Mr Wynne acknowledged in evidence that this was probably the only time he had ever had contact directly from a police investigator about a vehicle collision in his region[157]. In the circumstances, it seems surprising that he did not take the advice more seriously, especially when Mr Wynne should have realised that this section of road was the subject of a ministerial investigation and had now claimed the lives of four people in three separate collisions.

[154] Transcript, Page 405
[155] Transcript, Page 638
[156] Transcript, Page 639
[157] Transcript, Page 640

5.40. Actions taken by Transport SA following the third fatal collision

A fatal accident notification was forwarded to the Eastern Region by Mr Lippett's Unit. Upon receipt of this document (now said to be unavailable), Mr Wynne stated that he would have instructed Mr Sachse to go to the crash site and complete a Fatal Accident Report. Mr Sachse obtained a small newspaper cutting about the collision and fixed it to the form. When he attended on 28 March 2002, he looked for the usual police markers and noted that the collision occurred at MMP 20.35. His brief hand written comment at the conclusion of the form is as follows:

> 'Road surface looks ok in dry conditions'[158]

5.41. Mr Sachse explained in evidence that he did not see any defects in the road and did not consider whether or not the surface may have been a problem in rainy conditions because this kind of examination was outside of his duties and responsibilities[159]. Mr Sachse claimed that he compared photographs taken this day with those taken on a previous inspection of the site. When he did this, he noticed a dip in the road which he described as a defect or a 'deflection' 120 metres north of the collision site. According to Mr Sachse, he told Kevin Wynne about it and was then instructed to return to the area and examine it in more detail, which he did, sketching what he observed[160]. Mr Sachse claimed that he had no knowledge of any publicity calling for an upgrade of the road, nor was he aware of any 'ministerial' interest or inquiry into the matter[161]. He also acknowledged rather surprisingly that he did not have any discussion with Mr Wynne about the fact that there had now been three fatalities along the same stretch of road[162]. Mr Wynne claimed that following receipt of Mr Sachse's report, he inspected the road himself[163]. He explained that he later sketched the area in detail mainly to determine the estimated cost of resurfacing work and materials required.

5.42. Mr Tymukas stated that he was very concerned when he became aware of the third fatal collision because at that stage there had not been a response to Mr Raper's letter of 14 November 2001. According to Mr Tymukas, he visited the location at Cactus Canyon on 26 March 2002 and drove over the road three or four times. He conceded that he might have been made aware that Senior Constable Syrus had passed on

[158] Exhibit C48, Attachment E
[159] Transcript, Page 663
[160] Transcript, Page 698, Exhibit C31
[161] Transcript, Page 700
[162] Transcript, Page 709
[163] Transcript, Page 559

information that the road was slippery, but he was not certain about that[164]. When he drove over the road, he noticed that there was a dip just before the curve, which compressed the suspension, making his vehicle rise up. According to Mr Tymukas he contacted Kevin Wynne to express his concern that the collision may have been caused by a combination of the curve and the dip in the road[165]. He claims to have discussed this with other staff including Kevin Wynne whom he believed then instructed Trevor Sachse to attend and take measurements of the dip.

5.43. Mr Tymukas indicated the area where he saw the dip by marking a photograph taken in November 2001 depicting the approach for southbound drivers to the curve in the roadway[166]. Whilst I accept that a dip was observed by Mr Tymukas in the approach to southbound drivers, I treat his evidence as to precisely where the dip was observed with some caution, given that the photograph taken in November 2001 depicts an obvious dip in the roadway. According to Mr Tymukas, after visiting the site he decided that the dip needed to be fixed as well as the surface of the road and so when examining the various treatments available, it was decided that an asphaltic treatment was appropriate[167]. In the April budget, funding was obtained for sealing the shoulders of the road and approval was sought for funds to repave the road[168].

6. Request by Eastern Region for skid resistance testing

6.1. Mr Tymukas explained that the Eastern Region did not receive the skid resistance results obtained in December 2001 until he commenced an investigation into the third fatal collision in 2002 and arranged for skid resistance testing to be conducted at that time. When he learned that the results from the December 2001 testing showed that the road may have had a skid resistance problem, Mr Tymukas said that he was extremely concerned about that because it was a 'key asset management issue' for the Eastern Region. He claimed that he was 'absolutely flabbergasted and really cross'[169].

6.2. On 27 March 2002, Mark Moreland, presumably on behalf of Mr Tymukas, requested that skid resistance testing to be conducted between MMP 21 and MMP 22 at Cactus

[164] Transcript, Page 1033
[165] Transcript, Page 962
[166] Exhibits C18a, C54, Transcript, Page 973
[167] Transcript, Page 975
[168] Exhibit C39, p276-278, Exhibit C41, Transcript, Page 599
[169] Transcript, Pages 957-958, 1039

Canyon. His request was directed to Grant Mackey via an email[170]. Mr Mackey claimed in evidence that it was his idea that the road be tested to ensure that the Department had a record of the state of the road before re-paving work was done. Initially, testing was conducted on 5 April 2002 in error, between MMP 22 and MMP 23, rather than the requested location. That testing gave mean results above the intervention level at 0.66. There was however an area at about MMP 22.6 along the outer wheel paths of the eastern lane which gave a reading of only 0.38[171]. The correct area was not tested for another four weeks.

6.3. Meanwhile, several articles appeared in the local press expressing concern about the road following the collision in March 2002[172].

7. Letter from Senior Constable Syrus to Minister for Transport SA

7.1. On 10 April 2002, Senior Constable Syrus wrote to the Honourable Michael Wright MP, then Minister for Transport SA, setting out his concerns about the road surface. Senior Constable Syrus emphasised that when investigating the most recent collision, he could find no evidence that the southbound vehicle had moved onto the gravel verge before losing control. He explained how slippery the road was and described his concern about the undulations and the effect it had on vehicles as they negotiated the right-hand bend. Senior Constable Syrus also detailed his telephone conversation with Kevin Wynne and summarised the research he had undertaken, demonstrating that there was a pattern of crashes in that location in similar circumstances[173].

7.2. The letter written by Senior Constable Syrus sets out a comprehensive analysis of the problem with the road. If Transport SA had not worked out the full extent of the problem by now, this letter could have left no doubt about it. He concluded by making a strong recommendation that speed reduction and hazard signs be installed to warn motorists travelling along that stretch of road. It took the Department almost five months to reply to this important letter from Senior Constable Syrus[174].

8. Speed Zoning

[170] Exhibit C39, p313
[171] Exhibit C39, p308
[172] Exhibit C39, pp319-320
[173] Exhibit C42
[174] Exhibit C43

8.1. Peter Larsen, a traffic investigations engineer for Transport SA confirmed during the Inquest that the speed limit applicable to Main South Road at Cactus Canyon has been 100 kilometres per hour, since 1993, when it was reduced from 110 kilometres per hour. According to Mr Larsen, an assessment was made along this section of the road in 1982, at which time it was considered that no advisory speed sign was necessary[175]. The next time it was assessed was in July 2005 after the road had been re-paved. This survey indicated that the advisable speed for that curve was 90 kilometres per hour, but that in accordance with the Australian Standard for Advisory Warning Signs, an advisory speed was not indicated because the difference was not greater than 10 kilometres per hour below the applicable limit.

8.2. When Mr Larsen was questioned about whether or not the speed limit could have been reduced in the knowledge that the road was slippery, he stated that the preferable response was to install a sign alerting motorists to the particular hazard, because reducing the speed limit without any apparent reason is largely ineffective[176]. I fail to understand why a speed advisory sign, or a temporary reduced speed limit was not considered by the Department at a time when they were investigating a potential problem with that stretch of road for southbound drivers. Whilst some drivers may choose to ignore advisory signs or lower limits, responsible motorists should be given the opportunity of paying careful attention to them[177]. Between the time of the third fatal collision and the time when the re-paving work was done in June 2002, there was no reduction in the speed limit in that location, and no relevant hazard warning for motorists. It is fortunate that no more lives were lost in the interim.

8.3. When the skid resistance testing team turned up at the site to do what had been requested by Mr Moreland, they were unable to perform the tests because contractors were undertaking work to seal the shoulders of the roadway. After that work was completed the roadway needed to be swept clear of debris before the testing could take place. When it was finally grip tested on 7 May 2002, the results showed an improvement in the mean level to 0.62, however there remained a 400 metre stretch and a 600 metre stretch of roadway giving values at or below the recommended investigatory level. The improved mean results were unexpected and needed to be interpreted carefully. I say more about this topic shortly.

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[175] Transcript, Page 1245
[176] Transcript, Page 1247
[177] Refer Inquest into the deaths of Lois Sneath and Brendon Howard, 23/02

8.4. On 8 May 2002 Mr Neaylon, supervising surfacing engineer of Transport SA, attended the site to perform an inspection of the road surface. In his report he remarked that the 'aggregate was quite smooth, that is it felt polished to the fingertips, with no micro texture remaining'. In his report, directed to Mr Mackey, he made the following remarks:

> 'In summary, the engineering surface deficiencies are marginal. However, given it's reported road safety record, I recommend that strategies be implemented to address the elevated level of risk from the sections of the road having low skid resistance and texture.'[178]

8.5. The resurfacing treatment was undertaken by contractors in early June 2000 after funds were made available. It is unclear when a formal decision was taken to re-pave the road, but assuming that it was taken shortly after Mr Neaylon's attendance on 8 May 2002, I find that the decision should have been made much earlier. The catalyst for this work should have been the December 2001 skid resistance results. If funding was unavailable, then motorists needed to be appropriately warned of the dangers posed.

9. Interpretation of improved skid resistance results for May 2002

9.1. When Christopher Hall was asked to comment upon how the May 2002 results gave higher levels than those obtained in December 2001, he suggested that there is a potential problem with 'repeatability' of results using the grip tester because it is not currently possible to ensure that with each test run, the machine passes over the same area which gave the earlier results[179]. I encourage the Department to explore ways of improving this weakness in the testing procedure.

9.2. John Statton is the Manager of Road Asset Maintenance, which means that he is the most senior employee within Transport SA responsible for maintenance of roadways[180]. Mr Statton claimed that until shortly before giving evidence at the Inquest he was unaware that the December 2001 skid resistance results for the road at Cactus Canyon were not passed on to the Eastern Region until after the collision in March 2002. There is obviously much room for improvement in the exchange of significant information within this section of Transport SA.

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[178] Exhibit C48
[179] Transcript, Page 781
[180] Transcript, Page 1205

9.3. Mr Statton explained that the only way to assess micro texture of a road surface is by skid resistance testing, currently by way of the grip tester. According to Mr Statton, pavement assessments conducted in May and November 2001 such as 'sand patch' and 'laser testing' would not necessarily disclose a potential skid resistance problem[181].

9.4. Mr Statton warned that the May 2002 skid resistance results for the road at Cactus Canyon needed to be interpreted cautiously because they were conducted shortly after the shoulder sealing work had been done which might have impacted on the road surface as well. It is reasonable to assume that heavy equipment would have been driven over the road surface when this work was done, which might have altered the surface texture to some degree. According to Mr Statton, even sweeping the road before the test was conducted might be sufficient to reinstate some fine texture in the surface of the stone leading to higher values. Mr Statton explained that skid resistance at a particular location can change during the year either because the stone becomes polished during the summer months and then during winter months the surface becomes etched again through abrasion[182].

9.5. Regardless of the explanation for the results in May 2002, Mr Statton acknowledged that the earlier low skid resistance levels recorded in December 2001 clearly indicated that the road had the capacity for a low skid resistance and it was not to the point that it might improve at a different time of the year. As Mr Statton explained, 'the issue is the potential for that site to have a polishing problem'[183]. I accept the force in this statement and find that the correct response was for the Department to act on the results obtained in December 2001, regardless of improved results obtained in testing subsequently.

9.6. According to Mr Statton, if he had been aware of the low results obtained in December 2001, he would have expected to have an 'expert' go to the site for a closer inspection and initiate and immediate investigation[184]. Mr Statton considered that a warning or a speed advisory sign might have been necessary as an interim measure until the road surface could be improved[185]. To investigate the problem, Mr Statton stated that a suitably qualified person would need to look at a range of factors before

[181] Exhibit C48, pp44-46
[182] Transcript, Page 1179
[183] Transcript, Page 1225
[184] Transcript, Page 1224
[185] Transcript, Page 1194

deciding how to respond. These factors included the geometry of the location, the cross fall of the road, the applicable speed limit, the potential for wind to blow across the road, the potential for material on the unsealed shoulders to blow across the pavement, the width of the road at the curve and the potential for lateral acceleration, bearing in mind that southbound drivers had to negotiate a right-hand bend which requires greater friction levels. He conceded that it would also be relevant to know of any reports that the road surface had been slippery in wet weather and whether there had been other collisions in the same location[186]. He would have expected a competent investigator to check all these things and to monitor the site. Unfortunately, it seems that Mr Statton's expectations overestimated the capacity of the Department to do what was required.

9.7. The evidence indicates that since the resurfacing was completed in June 2002, there have been no reported incidents along this stretch of road. The mean skid resistance levels along the southbound lane, obtained in September 2002 were significantly improved at 0.70, with a standard deviation of 0.02. In other words, this stretch of road was at that time, consistently above the recommended intervention level[187]. Whilst the undulation noted by Mr Hall in May 2004 is presumably still present, the evidence from Mr Hall suggests that it is a potential problem, only in combination with very low skid resistance levels. Clearly, the Department will have to conduct skid resistance testing periodically to monitor the situation.

10. Deficiencies in Road Crash Register of Transport SA

10.1. Mr Stephen Lippett explained how when compiling the Road Crash Register, staff received the faxed information from police and conveyed it to a company based in Queensland, to enter the information into a database using a number of 'codes'. The interpretation and application of these 'codes' resulted in some distortion of information in the database[188]. The system was designed on the assumption that collisions occur as a result of driver error and there is no capacity to record any possible defects in the roadway or other factors which might contribute to collisions. Mr Lippett acknowledged that over time, the Queensland workers demonstrated inadequate local knowledge to do the work accurately. It has become clear after

[186] Transcript, Pages 1124, 1203, 1193, 1199
[187] Exhibit C48
[188] Transcript, Page 1103

examining some of the Road Crash Reports during the Inquest that many errors have never been detected.

10.2. A relevant example concerns the report detailing the third fatal collision in which it states that the driver of the southbound vehicle had a blood alcohol reading of 0.06 and that the collision occurred as a result of the driver being under the influence of alcohol[189]. No doubt there are countless other examples. The Court was informed that the contract with the Queensland company was due to terminate in June 2006, at which time the work would be done locally.

10.3. According to Mr Lippett, the quality of the information recorded by his Unit is also compromised by the availability and quality of information from police. One major concern is said to be the imprecise and inconsistent ways in which police record collision locations[190]. Mr Lippett conceded in evidence that one way to overcome this might be for all police to use a GPS system[191]. According to Mr Lippett, the differences between the police 'VCS' data entry system and the system operated by Transport SA limits the available information provided. He also acknowledged that when information is received from the police it was at a very preliminary stage of the police investigation and therefore is incomplete. A longstanding problem, according to Mr Lippett has been a general reluctance of the police to divulge information to the Department[192]. One can readily understand why some information from police cannot be divulged. When Mr Lippett was shown a number of police reports about vehicle collisions, for the first time during evidence, he acknowledged that they could have been very useful for departmental purposes[193]. The evidence enables me to find that many years have been spent by Transport SA, compiling data about road crashes in an inefficient and unreliable manner. If the Department is serious about accumulating data to minimise avoidable deaths on South Australian roads, there is much room for improvement. There is also room for improvement concerning access to the road crash database by staff from the Regions. I understand that some changes have been made to address this latter issue.

11. Accredited road safety auditors

[189] Exhibits C51c, C48 p32, Transcript, Page 1139
[190] Transcript, Page 1154
[191] Transcript, Page 1166
[192] Transcript, Page 1128
[193] Exhibits C45, C47a, C47b, C47c, C47d

A recent initiative of the Department is the creation of accredited road safety auditors to complete assessments mainly after fatal collisions. Mr Lippett explained that from 1 July 2005, his section started to produce a register of fatal crashes or significant events, which is part of a more elaborate procedure concerning the collection of police reports together with a summary of crashes occurring within half a kilometre of each fatality. This information is now forwarded by email to regional managers and to an accredited road safety auditor for the purpose of producing a report. According to Mr Statton, this is part of a proactive programme designed to identify high risk areas which need further investigation[194]. The new reports require the accredited road safety auditor to address multiple issues, including pavement defects and adequacy of skid resistance qualities. It remains to be seen whether the persons completing these new reports will have the necessary skill and judgment to provide accurate and reliable information.

12. Process for selection of sites for skid resistance testing

12.1. Mr Mackey explained that there have been some changes to the way in which roadways are targeted for skid resistance testing[195]. A process has been devised to determine the relative risk in a given location by reference to a table of criteria which gives a ranking from 100 (low risk) to 0 (extreme). Sites giving a risk rating below 60 are "proposed to be grip tested within 2 years". Regardless of what procedure is now in place, one hopes that staff will use a measure of common sense and initiative when relevant information comes to their attention from members of the public, police, emergency services personnel and the press. Any process which operates in accordance with a formula may be satisfactory as a general basis for reviewing the road network, but there should be some scope for exercising discretion.

13. Electronic Stability Control Devices

13.1. In recent years, devices known by various names have been introduced in more expensive vehicles which sense the development of the 'yaw' condition. According to Mr Hall, these computer controlled devices sense when there is a loss of control. Signals are sent to the wheels to either brake or apply power to bring the vehicle back to the desired path. Mr Hall elaborated as follows:

[194] Exhibit C53b, Transcript, page 1196
[195] Exhibit C48c, p108

> 'So its measuring the rotation of the steering wheel, and then when that rotation becomes rapid relative to the direction of heading of the vehicle it knows that there is a problem, and so these appropriately named ESP systems can go about overriding any driver input and simply bringing the vehicle back into control.'[196]

13.2. I note that in recent months, there have been articles published in national newspapers on this topic, one of which indicates that at an Australian car manufacturer is now including this device as a standard feature in one their new models[197]. If as claimed, these devices are potentially critical in situations where drivers lose control following loss of traction, they promise to play an important role in road safety, particularly in rural areas.

14. Recommendations

14.1. In accordance with the provisions of Section 25(2) of the Coroner's Act 2003, the following recommendations are made in anticipation that they might prevent or reduce the likelihood of, or recurrence of an event similar to the event, the subject of this Inquest.

1. That the Minister for Transport and the Minister for Police, do what is reasonably necessary to improve the quality of relevant information provided to the Department for Transport from South Australian Police regarding vehicle crashes. In particular, attention should focus upon the manner in which the precise location of collision sites is recorded which will facilitate the transfer of accurate and consistent information;

2. That the Minister for Transport, undertake an audit of the Road Crash Unit database by a suitably qualified person, to rectify existing errors within the database as far as possible and to devise and implement systems which will make it a valuable and reliable resource for road safety purposes;

3. That the State Government and the vehicle manufacturing industry consider ways in which the potential benefits of electronic stability control devices might be promoted and do what is necessary to facilitate their inclusion as standard features in new vehicles as soon as is reasonably possible.

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[196] Transcript, page 812
[197] Weekend Australian 24.6.06, Australian 19.7.06

Key Words: Braking systems; Country road; Drivers - error; Road design; Road maintenance; Road Transport - Dept of; Transport industry.

In witness whereof the said Coroner has hereunto set and subscribed her hand and

Seal the 7th day of August, 2006.

Coroner

Inquest Number 7/2006 (1234/00; 3000/01; 3002/01; 0787/02)