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THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS MET IN COMMITTEE ROOM 2, PARLIAMENT HOUSE, HOBART, ON TUESDAY, 25 SEPTEMBER 2012.

MURCHISON HIGHWAY UPGRADES

Ms SARAH BOYLE, MANAGER, PLANNING & DESIGN, AND **Mr RA'ED AL-QAWASMEH**, ENGINEER PROJECT MANAGER, ROADS AND TRAFFIC DIVISION, DEPARTMENT OF INFRASTRUCTURE ENERGY AND RESOURCES, WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

CHAIR (Mr Harriss) - Welcome to you both. Would you like to speak to your submission?

Ms BOYLE - I would like to thank you for agreeing to trial the on-the-road video. This site is constrained and it would be very difficult to stop and talk about it, so it would be much easier for us to discuss the specific projects. We can stop the video whenever we want and talk to it.

As a bit of a background to this work, \$21 million was allocated to this project through the community roads on the west coast program. We have targeted several different areas for the work. The bulk of the money will be expended on the section from the Cradle Mountain link road south towards Anthony Road. That part of the Murchison Highway is already a gazetted HPV-HML route. It carries mine freight and salmon farm freight. It is part of the west coast wilderness way touring route. It is the main connector between Cradle Mountain and Strahan, so it sees very heavy traffic during the summer months. With that comes the safety concerns of non-local drivers, people who aren't familiar with driving on Tasmanian style roads, mixing their travel with heavy freight and also for the local community on the west coast it has a significant commuting function between the towns on the west coast of Tullah, Rosebery, Zeehan and Strahan, through to the retail and social areas on the north-west coast.

There is quite a mix of traffic on this section of the Murchison Highway and we have done very little work on it since it was initially built in 1963 when it was opened. It is an old-fashioned road and this work is to bring it up to a more contemporary standard. We are targeting an 8-metre sealed cross-section for as far as we can on the section of road, but in recognition of the fact that it is mountainous and has a lot of steep hills, extended sustained climbing for heavy freight particularly, and the platooning and queuing of vehicles behind the trucks. We have also added in a three-four climbing lane or slow-vehicle turnout. The function of the road will change and there will be an increased efficiency and in particular the light passenger vehicles will have an increased number of opportunities to bypass and overtake the freight movement on the road.

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The second area we are targeting is Mount Black and that is between Anthony Road and Rosebery. There are some targeted sites on Mount Black that will receive a range of different treatments. We are putting a pair of slow-vehicle turnouts up on the summit of Mount Black, one for each direction and there are two sites where we are stabilising pavement which is starting to move down the hill and we keep putting asphalt in, so there is very deep asphalt. Every time we put more asphalt in to keep the surface level it is adding weight and moving down the hill.

We have identified two sites that need stabilisation. There are also two sites where we are sealing existing wide gravel pull-over areas that the freight vehicles are using at the moment to pull over, and it is courtesy pull-over. They are pulling over to a stop to allow the queued passenger vehicles to get past. That is a summary of the intention of the works.

The time frame for the project is: we have completed detailed design for the Mount Black section of road - from Anthony Road to Rosebery - and we are looking to tender that in early October. We will focus on construction over Mount Black over this summer. Then the significant part of the works from Cradle Mountain link road toward Anthony Road will be tendered in May next year. There will be two construction seasons for the 2013-14 and 2014-15 construction years. We are looking for practical completion of works so that all the works will be completed by May 2016.

Mr BOOTH - I wanted to get on the record a few issues with regard to prioritisation of projects - where this fits in with regard to the whole of the state's road infrastructure projects and how it came to be that this project was decided upon and prioritised. I'm not making a comment on that, I am interested to know how you go about the prioritisation.

Ms BOYLE - Over the last 10 or 15 years DIER has had a program of moving south from the Ridgley Highway that comes in around the Waratah area; at Guilford there is a junction so we have invested in upgrading the highway from the end of Ridgley Highway down to the Cradle Mountain link road. That section of highway is being upgraded and we have been gradually, as we have had funding, moving south from Ridgley Highway towards Anthony Road. It has been a progressive program. About seven years ago we installed a slow-vehicle turnout facility just south of the Cradle Mountain link road as it is now, so we started that investment. We did some pavement strengthening and rehabilitation, and just south of that a slow-vehicle turnout as well. It is the next section in the Murchison Highway that has been targeted for a while for upgrading, on that progressive north-to-south policy we have been putting into place.

Mr BOOTH - What is the basis to that or the methodology? How do you decide that that is what you are going to do? Is it, as you said, part of a longer-term decision seven years ago to upgrade that highway for some specific reason -

Ms BOYLE - It is driven primarily by the section from Ridgley Highway south and the pavement restrengthening we have done south of the Cradle Mountain link road has been driven predominantly by pavement failure. We have actually needed to go into full pavement strength work. The work in the last 10 years has been driven by failed pavement.

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It has had a lot of work over the years; it is now nearly 50 years and the life of the pavement has come to the end, so while we are doing that now and the restrengthening of the pavement - and this work [inaudible] a lot of pavement strengthening associated with the [inaudible] as there are quite a lot of failed sections. We are seeking to contemporise the cross-section and get the extra width to accommodate the mix of traffic that we have and get an improved efficiency in movement, and consistency.

Mr BOOTH - Is there an overarching priority across the state or do you do it on a regional basis? Are there other roads in the state that would be of a higher priority for upgrading, either for safety reasons or pavement failure reasons, for example?

Ms BOYLE - At this stage the Murchison Highway is one of our preferred and priority highways. It has had five fatalities in the last 10 years on the sections that we are looking at. They are primarily single vehicle 'ran off roads' so the whole cross-section of curves and the nature of how people are travelling is reflected in these fatalities and serious injury accidents. There is a strong safety message in this. It is essentially a long section of black spot project. Although at this stage we are not achieving the full length of eight metre cross-section, we are getting about seven kilometres of eight metre cross-section. We are, in addition, targeting the specific sites of safety concern where there is a record of fatalities and serious injury accidents.

Mr BOOTH - I have talked to you before about the upgrade in the north-east, the Forest Roads project, renamed the Freight Roads project and we had a fairly long discussion about the Herrick extension, for example, and the amount of money spent on that. Now looking at this road and having driven this road myself, I can fully understand why DIER want to improve both safety and its standards. There ought to be some clear understanding from people that they can go to either a document or a website on DIER and have a look at an asset assessment, if you like, of the condition of the roads around the state, and some understanding of where the effort will go in terms of funding. It would be very useful to me because it would help me to understand the need for amounts to be budgeted, the quantum of money that is spent, and the reasons why it is being spent in certain areas.

Mr AL-QAWASMEH - I would like to add here the consultant [inaudible] were undertaken according to an extensive consultation with different stakeholders, industries, local governments and local residents and put this to our personnel, so this has been [inaudible]. This project is addressing safety concerns and inputs from the stakeholders.

Mr BOOTH - Would there be a statewide framework that people such as members of parliament, or anybody else, can get some reference from as to where prioritisation of works has been indicated and where it would likely occur?

Ms BOYLE - We have some documents, which are being revised at the moment, so we have come to that point of review. There is a strategic asset management plan, which is called SAMP for short, and a bridge asset management plan. They were put together and that was looking at the statewide asset condition for the strategic state asset, the roads and the

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bridges, so there are two documents. They are about to be reviewed, so they are the most strategic overarching documents that we have, although it is at a point of requiring review.

Mr BOOTH - SAMP and BAMP, are they available?

Ms BOYLE - SAMP and BAMP are on the DIER website.

Mr BOOTH - That would be the tool or the resource for somebody looking at -

Mr AL-QAWASMEH - One of the tools. There are going to be other things like public display.

MS BOYLE - From the strategic sense that is probably the final document across the state.

Mr BOOTH - That is the reference tool that you would use to decide which road you are going to do?

MS BOYLE - Both of them will provide future input for identifying the future program, and at the moment, across the state, we have a number of bridges that are our links, that are strategic, and we will be focusing on bridges in the near future.

Mr BOOTH - You would presumably choose the worst road and the most damaged bridge to fix first. Is that a general rule?

MS BOYLE - Different roads have different functions, so there is the hierarchy of whether we have to categorise one road, so the main Midland Highway and Bass Highway will receive priority treatment because it has the highest freight and passenger transport function, and then through the categorisation of roads we will prioritise projects depending on what the function is and the demand for use.

If it is a freight route like the Murchison Highway, and we have the significant safety issues and significant pavement failures and vehicle operating costs in line and there is that interaction happening between users, we have the layers of safety and pavement and contemporary cross-section of road, so they all come in together to set the priority direction.

Mr BOOTH - And that is based generally on those assessments of needs rather than political decisions like a determination by a minister? We discussed that before with the freight rail stuff, that that was a political election promise. But in the general maintenance sense, are these things decided on the basis of election promises or ministerial direction or are they genuinely done by the department on a needs assessment?

MS BOYLE - The Murchison Highway upgrades, the \$21 million, was an election commitment.

Mr BOOTH - It was?

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MS BOYLE - Yes. It was an election commitment at the previous state election, and it was based on advice from DIER, so there was recommendation for a quantum of funding that would be required to get started on the next phase moving south.

Mr BOOTH - Was that election promise consistent with the prioritisation of this project in terms of the need, demonstrated need for safety and infrastructure maintenance or improvement, or was it because there was an election promise that it then became the priority?

MS BOYLE - The Murchison Highway has come on as a priority because of the forecast increase in mining traffic, so there is that projection looking forward, as well as the historical crash and safety and the current existing pavement condition. It is looking at what is the use of the road in the future.

Mr AL-QAWASMEH - It is the only highway in that area.

Mr BOOTH - I am not disputing it. I am just interested to know what methodologies are used. What would the answer be to a question I asked you previously: if I came to DIER with \$21 million and said, 'Look, here is \$21 million to spend on roads in the state'. Is this the priority that you would choose to spend it on? Is it the highest priority?

MS BOYLE - It is a high priority. There are other priorities around the state that are dependent on the function of the road and the condition of bridges and condition of pavement and have the safety history, so there is a whole range of priorities across the state, and this is certainly in the high priority category, and where DIER is seeking additional funding to complete the work. This project, this \$21 million, will not complete the work through to Anthony Road. It does part of it, and it is high enough priority that we are seeking additional funding through other avenues to continue the work to the south. It is a high priority part of our network.

Mr BOOTH - It is a project following a promise rather than a project following a prioritisation of needs by DIER?

Ms BOYLE - The construction has been enabled by a political commitment. Prior to that we identified a range of projects for the extended works.

Mr BOOTH - This was one of the ones that happened to be of the highest priority alongside some others?

Ms BOYLE - Yes.

Mr BOOTH - In managing infrastructure budget, I want to phrase this so it is not a political question and expecting you to answer. We are talking to you as infrastructure managers and making decisions about where to best spend money in the state on maintaining road assets. Is it helpful to have politicians making promises about what should be built, rather than you getting on with the job as a department and maintaining the asset to a safe standard?

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Ms WHITE - You have a parliament [inaudible].

Mr BOOTH - That might be a question they want to answer.

Ms BOYLE - We compile a list of prioritised projects and prior to an election we are asked to provide those lists of projects and how they are funded. Our funding comes through the election cycle to deliver projects.

Mr BOOTH - Thank you, I think that you have answered it well and I appreciate that. As a member of parliament, people ask how these projects get prioritised and now I have my answer. Generally it is politicians flapping their gums that get the things up.

Ms WHITE - I do not think that is quite what was said.

Mr BOOTH - Some ability to say that if your road needs repairs because it has been identified as dangerous or falling apart, then it is likely that it will come up in the orderly way through proper asset management rather than having to make a lot of noise politically to get their patch fixed.

CHAIR - I will take that as an assessment of yours, Kim, and not necessarily as a fact because of the evidence that has been provided. We will go to Greg and then to Adam.

Mr HALL - My question is of a very general nature, no political undertones at all. I notice that we have slow-vehicle turnouts mentioned and there are a couple of them on this piece of highway. You see them in other states and I have always thought that in particularly difficult terrain they are a useful tool which avoids a lot of frustration with heavy trucks, where they can pull off. Is the department going to look at that aspect of road engineering down the track on future projects? It is something that we do not see much of in Tasmania - there is probably only that one but the signs are there and people know they can pull off and let a stream of traffic go past. Is that something that you are going to incorporate into road design down the track, on a more frequent basis, in difficult terrain?

Ms BOYLE - The Murchison Highway lends itself to the short climbing lanes and short slow-vehicle turnouts and technically they are two different lengths. A slow-vehicle turnout is about 150 metres. A climbing lane is anywhere between 400-600 metres. Then you have the full overtaking lanes, which are much longer. That is a bit of technical terminology. We are looking at applying the same sort of modelling and these sites were identified through development of models and we have looked carefully at the current traffic using the road, the forecast traffic and the increasing number of trucks.

We drove up and down with truck drivers and they pointed out to us the sites where they experienced queued up passenger vehicles behind them and how and where they can pull over and allow vehicles to overtake. We also developed a traffic model that models the speed of the truck speed wash as it climbs up a hill and how fast it drops off. These sites were all carefully identified and set up in the traffic model. We are currently applying a

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similar model to Huon Highway, south of Geeveston, because that is another ideal site. It is hilly, it is steep and there are locations that we could really assist.

Mr HALL - Even though it may not be a major project to other existing roads? There is obviously potential to do it, so it is a matter of money, is it not?

Ms BOYLE - In the future and the opportunity. I think the important thing is that it is a set of facilities of slightly good turnouts or climbing lanes along the length of road. If Murchison Highway works we would obviously have three or four put in and so over that 20 kilometres of road there will be a set of opportunities that vehicles have to overtake the slow trucks. We would apply that to the Huon Highway as well.

Mr BROOKS - There are goat tracks in my electorate and it has been raised as a constant issue with those residents and communities on the west coast.

Mr BOOTH - Are you having trouble getting your goats down the road?

Mr BROOKS - I want to get some mining trucks down the road. Given the high mineral content of the area and provided it is not locked up and the industry is not sold out, hopefully there will be some mining investment in there in the future. What conditions or projections have you taken into account in the road design given the probable increased industry in that region?

Ms BOYLE - The traffic models I spoke about and identifying the locations to the climbing lanes have been set up on a web. The 20-year horizon for mining is fantasy in a sense but we know that the aquaculture industry at Strahan is rapidly increasing and they are targeting a 300 per cent increase over the next two to five years. We are also aware that there is a mine to open up next year, pending approvals, that will enter the Murchison Highway at Pieman Road so those traffic volumes have been incorporated in developing the model.

Mr BOOTH - Sadly now there is a hole in the ground coming up.

Mr BROOKS - Maybe more than one.

Ms BOYLE - This information was backed by a lot of work with industry to get a sense of the capability and possibility for mining south of Ridgley Highway. There are a few access points on this section of highway. We understand that south of Rosebery and getting towards Queenstown there are other opportunities for mines in the future. It is a bit of crystal ball gazing.

Ms BROOKS - But you did take into account that the types of vehicles and the weight and the freight of vehicles is different to a CBD Hobart road.

Mr AL-QAWASMEH - Yes. All of this is taken into consideration.

Mr BROOKS - A lot less volume of course.

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Ms BOYLE - Yes. The salmon or the aquaculture industry is just going to limit its use to semitrailers and will want to continue driving over Mount Black. B-doubles are not permitted and never will be permitted to travel over Mount Black, but the aquaculture industry will continue to use Mount Black because they have their vehicles set up for tanks and feed and whatever whereas the mining industry will tend to move on to the HPV vehicles.

Mr BROOKS - We will probably have a look at it on the video.

Ms BOYLE - Yes, I am mindful of time. We probably need to get started on it.

Mr BROOKS - It will just mean looking at a couple of things around it. Do you track the difference between those who drive the Murchison from the Cradle Mountain turnoff and those who choose the Cradle Mountain turnoff? Is there much of a road?

Ms BOYLE - You are wondering about the number of vehicles that go onto Cradle Link Road?

Mr BROOKS - Yes.

Ms BOYLE - We have counters down so we know how many vehicles move from Cradle down onto the Murchison Highway. One of the things we are putting on this project are two more permanent counters so we will have clearer information, particularly to pick up the seasonal trends so we will understand the seasonal trends a lot more than we do now.

Mr BROOKS - We do not quite know yet?

Ms BOYLE - We have a counter further back on Cradle Road but there is some mining activity closer in to the Murchison Highway. At the moment our forward projections are based on interviews from the mining industry.

Mr BROOKS - Furthering industries such as tourism and other opportunities in that area would mean the traffic could potentially flow from the Cradle Mountain Road and then onto the Murchison. I wasn't sure whether you looked at the differences because that would change the types, you would think.

Ms BOYLE - Well, it changes the mix of passenger vehicles to freight. We don't get many caravans and bigger vehicles north of Cradle Mountain Road going towards Ridgley Highway. It's mostly coming round Cradle then [inaudible].

Mr BROOKS - To add from Mr Booth's gum-flapping statement about politicians, it was interesting that both the major parties committed major investment in that area. I don't think it was a vote-buying exercise; it was based on needs of the community and needs of future investment.

Mr BOOTH - Were you flapping in unison then? Flapping out of the same hymnbook.

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CHAIR - Order. We don't want to have a debate about political differences.

Mr BROOKS - I suppose ultimately there may be higher-volume areas, but do you think this money is worthwhile for what we are going to get?

Ms BOYLE - This is a significant investment that will vastly improve the consistency, efficiency and safety of the Murchison Highway for the section that we are investing in here, for all road users.

Mr BROOKS - On that road there are a couple of areas that are susceptible to height. Some parts of the road have tree coverage. Was that looked at?

Ms BOYLE - The widening will take the trees further back so that will grant some access. One of the targeted areas has a particular ice problem. The trees will be cleared there and the widening will open up that area again. We haven't got all the sites because we are not far enough down the highway but there'll be an improvement for the areas we are treating in relation to ice, which will improve some access.

Mr BROOKS - Were emergency services, transportation up and down and buses also taken into account or was it more about freight?

Ms BOYLE - We spoke to bus contractors about what they were finding. We primarily targeted the freight because they're the slow-moving vehicles and they're the ones that people get queued behind and -

Mr BROOKS - Impatient behind them.

Ms BOYLE - Yes. They are our slowest road user and the most challenging for people. Every other road user is affected by the freight.

Mr BROOKS - These will make a difference to the ability to overtake, which I believe is one of the major contributors to accidents, with frustration and impatience because of the lack of opportunities to pass slow traffic on that road.

Ms BOYLE - The fatalities haven't necessarily been from overtaking. It's often been something not quite right with a curve so in those areas we are reshaping the curve too so that the vehicles tend to stay on rather than roll off. There has been a mix but the interesting thing is that it has primarily been single vehicles coming off the road.

Mr BROOKS - Is that to do with the width, the grade or many contributing factors?

Mr BOOTH - The driver.

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Ms BOYLE - Well, it's a combination of driver, shape of the road around the curve, the fact that the curves are tight for the area and people who are unfamiliar - or over-familiar commuters - can take higher risks and travel faster. There is a whole range of reasons contributing to it.

Mr BROOKS - Is it projected that the speed limit will change?

Ms BOYLE - The speed limit will stay as it is.

Mr BROOKS - There was mention that it may be dropped down.

Ms BOYLE - It has been designed for 100 kph but the curves will not achieve 100 kph. They will still be signposted. There will be more consistent signposting for curves that are not designed for that speed. There are a couple of curves on there that are very tight and they will have some improvement as to how fast you can drive around but they will not be at the full open speed limit.

CHAIR - Sarah, how much time is it going to take to do the drive through?

Ms BOYLE - I think if we start now we will be almost finished by the end.

CHAIR - We have until just before 2.30 p.m.

Mr BOOTH - In regard to bicycle access on the road, is this now the standard that you have applied to the roads up in the north-east for example?

Ms BOYLE - This is an eight-metre sealed cross-section. At the moment there are no sealed shoulders - the average width along here is about 6 metres. Basically we are putting two extra metres width and there will be an edge line and there will be space for cyclists to ride.

Mr BOOTH - Specifically in the design you have incorporated for cyclists over the edge line?

Ms BOYLE - The cyclists will benefit from the contemporisation and achieving a wider cross-section so they will benefit as road users. I have cycled up and down there a lot and I am looking forward to it. Yes, cyclists' safety will be improved significantly.

CHAIR - Let's drive!

The committee viewed a video drive-through of the road.

CHAIR - During your evidence, Sarah, you mentioned that there are parts of the highway that have been resealed, and resealed - they just keep adding to the weight - and therefore there is some settlement. Is that just natural settlement or is there a problem for potential landslip?

Ms BOYLE - It is the original construction method. They just threw in large boulders, logs and trees, which was the traditional method in those days. Over time it starts moving and shifting. You can see where we have put the asphalt over time. On one of these sites you

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will see that the top of the fence posts are at the same level as the road. We do not have the structural strength there to hold the safety fence in place. These works will stabilise all of that so that the fence will work as a safety fence and the road will be held in place. There is always a risk that heavy rainfall will leak through and lubricate that surface and it will all slide down. Being the west coast that is always at the back of our mind - there is a possibility that it will slip.

Mr AL-QAWASMEH - One of the solutions is going to be guardian walls for the stabilisation of the embankment and then reflecting to the stabilisation of the pavement. The third area, which is number three, the northbound slow-vehicle turnout. We start from here and it is going up to the crest of the road - up to here. There is going to be a car park for Rosebery Development Association. They asked for a cleared area. It is going to be more like tidying up and some base work for the car park. Then the second one is the southbound slow-vehicle turnout. The fourth area will again be the pavement stabilisation.

Ms BOYLE - West Coast Council are seeking to improve the pedestrianisation through Tullah; that is the Murchison Highway section of Tullah. As part of that, they approached DIER about doing some pavement strengthening and understanding what width of seal we want through there. We have been working with West Coast Council to upgrade and design the width that we're after, the 8-metre sealed cross-section and then the council is installing footpaths and curve and channel. As part of their approach, they're looking for a grant of \$200 000 as a contribution towards their works which covers the extra width of our road and the pavement strengthening. West Coast Council will undertake the work this summer and DIER will prepare a deed of agreement grant and then a \$200 000 contribution towards that work through Tullah.

The Pieman Road is the road we are anticipating will be significant with bulk ore being transported out from the new mine along Pieman Road. We are expecting about 200 000 tonnes a year to be moved out and using this junction, as they'll be turning left and climbing up the hill.

Mr BOOTH - What speed do you record these videos at?

VIDEO OPERATOR - Highway speed.

Ms WHITE - It would be better if it was 3D.

Ms BOYLE - Coming soon!

Mr AL-QAWASMEH - As you see from the drive there are many opportunities for improvement and hopefully in future these will be taken into account.

Mr BROOKS - I have read some articles that note it is basically impossible to overtake in some overtaking lanes, given their short length. There are none of those on this, are there? Are there many in Tasmania that are just silly overtaking lanes? There are a lot interstate. When I used to live over there -

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Ms BOYLE - No, the existing slow-vehicle turnout on the Murchison Highway just south of Cradle link road - truck drivers have reported to us they don't like to use it. If they have too many vehicles behind them they get caught in it. They come to the end and they get trapped to the point they have to stop. We have had reports that this existing one doesn't work very well because it is not quite long enough, and that is a slow-vehicle turnout which is very short. It is about 150 metres to 200 metres. These ones have been modelled and are a bit longer. They are between 300 metres and 400 metres long. They are long enough that a truck can slow down to 40 kilometres to 50 kilometres per hour and up to four or five passenger vehicles can overtake in that length while the truck has moved over. We have set it up to try to get that number of vehicles past the truck.

Mr HALL - In some cases in other states, vehicles stop in the slow-vehicle turnout, because they are quite short. Have you seen those?

Ms BOYLE - Yes.

Mr HALL - That is the idea of them. They are signposted some distance before 'slow-vehicle turnout 1 kilometre ahead' or whatever so it gives all approaching motorists that option. They know that they will be able to pass. Caravans and big trucks and other slow-moving vehicles come to a stop. Therefore in infrastructure terms, there is obviously a cheaper way of doing it.

Ms BOYLE - Yes. That is probably the difference with what we are calling a pull-over bay, where we are intending that the trucks stop and they are currently using it in that way. They stop and allow the vehicles to pass. That is a very high operating cost for the truck because if they are on a steep hill and they come to a stop, they have to start up again.

Mr HALL - I appreciate that.

Ms BOYLE - We are trying to provide more opportunities for them to keep moving, where they don't have to stop and start and increase their operating costs. This set of four means that there is not a long distance before the next opportunity.

Mr HALL - Maybe I'm thinking more about those legions of Winnebagos on the roads.

Ms BOYLE - Yes, there is an increasing number of those.

This is the end of the project so you can stop the video. This is the junction with Cradle Mountain Road. That is the extent of the works - we have driven through in 20 minutes, or we could have spent two days.

CHAIR - Can I go to matters of the estimates, please, in the submission on page 45? I want to get some comment, first of all, on the Mount Black component of the road, and I am looking at the contingencies. You have an inherent risk allowance and you have a contingent risk allowance - can you tell us what that is really all about? Contingent risk allowance I think

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we understand, but I have not seen a project previously with an inherent risk allowance component.

Ms BOYLE - The inherent risk allowance applies to the specific quantities and rates. I will give you an example - for the sealed surface area, we do an estimate of the area of seal we are going to put down and the inherent risk provides a range of possible losses, say 5 per cent. In the calculations we have our expected area of seal, or our median average area of seal and then we put it within a range. Because it is a pretty well defined quantity we might have a range of plus or minus 5 per cent on each side. That range is described as the inherent risk. It covers both the quantity of seal area we will put down, and the cost per square metre of seal. The entire inherent risk calculation has a percentage range around the average that we are expecting. In this case the cost range would probably be a much bigger percentage on either side. It might be 10 per cent or 15 per cent because we don't know at the time what the contractors will cost for sealing an area. All of our quantities, and all of the costs that we are putting against each of those quantities are put in a range to cover the fact that we don't know what the contract tender prices will be and what the actual overall costs will be. We are very close in our estimates for quantities because of the design process, but there is always some variation in the field. Conditions crop up, or change - the range accommodates that, and it is covered off in this calculation.

CHAIR - The contingent risk allowance for a project like this is primarily location and the subsurface quality?

Ms BOYLE - Yes, the project-specific risks that can be identified. Our major risk for this project is high rainfall, because it is the west coast. We are targeting to get this all delivered in two summers, or three summers including Mount Black. If we have a really wet summer for one of the summers and our construction time is shortened, the contingent risk would be the cost to move into a third or fourth summer. We can't do anything about the weather. The cost of that is allocated into the contingent risk aspect of the project. As you can see there are some cuts through there and there was a spring in the middle of the road. Although we try to allow for that in the designs there might be a lot more hard rock than we have anticipated or we might find a lot more springs popping up in the road. Although we have done a reasonable drainage design, there might be some project-specific work that needs to be done.

CHAIR - Thank you very much.

THE WITNESSES WITHDREW.