

**THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS MET IN
COMMITTEE ROOM 3, PARLIAMENT HOUSE, HOBART, ON WEDNESDAY
29 JULY 2009.**

CHANNEL HIGHWAY, KINGSTON BYPASS

Mr ROSS MANNERING, PITT & SHERRY, DESIGN MANAGER; **Mr MATHEW BROOKS**, GHD, TRAFFIC MODELLER; **MR DION LESTER**, PITT & SHERRY, PLANNER; AND **Mr GUNADASA GINNELIYA**, DIER PROJECT MANAGER, WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

Mr GINNELIYA - Our presentation will be in four parts. I will do the background and overview of the project and then environmental and planning issues, modelling issues and technical and design issues.

The history of the Kingston bypass rose as far back as 1983. That was the time that the department declared the corridor and the proclamation was made under the Roads and Jetties Act. Since that time there has been some initial thought and work but no major activities. The department has done some safety improvements on the Channel Highway under the Black Spot program, but nothing major came of it.

As you are aware, since the late 1990s, Kingborough municipality has shown tremendous significant potential and commercial growth and as a consequence of that, traffic volumes on the Channel Highway and other arterials roads have been growing at a very high rate. Close to 4 per cent traffic growth has been experienced in the last 10 to 15 years. The Summerleas Road roundabout was carrying about 18 000 vehicles a day in 2006, which is a fairly high number in the Tasmanian context.

This growth led to major traffic and safety problems in Kingston. The major issues are the delays and safety concerns for traffic turning into the highway from local streets and accesses. There were long queues and delays around Summerleas Road roundabout during morning and afternoon peaks. Similarly, there were long delays and queues on Huntingfield Drive. In addition, there were rat runs through local streets such Maranoa Road to avoid the Channel Highway section between Algona Road and Summerleas Road. So that led to other problems as well. Though there are not serious accidents, there were a large number of accidents on this section of the Channel Highway as well.

As you may be aware, in 2004 some community members got together and formed a group called the Kingston Bypass Action Group - they are commonly known as KBAG. They called a public meeting and more than 200 people attended they then went to the media and petitioned the department. At that time, the minister for infrastructure, Bryan Green, announced that major works were needed in Kingston and a major traffic study would be undertaken. So it was announced that instead of looking at the problem in a piecemeal way we would look holistically at the whole of Kingston, covering the area of 16 kilometres. That study was known as the Kingston Environment Transport Study, KETS. A steering committee was formed to oversee the project and that steering committee consisted of officials from the department, council, the community groups and a consultant who did the traffic modelling. They looked at more than 20 options, I

am told, some with a bypass option and some without. They looked at predicted traffic growth over 10 to 15 years and how it affected our model. The report was produced in March 2007 and was re-analysed again in August 2007. I can provide a copy of the latest report to this committee.

The second report, done in August 2007, recommended that the department look at a staged development rather than doing everything at one go. So the department developed a concept design for stage 1 which you have been shown at the site and we also did the concept plan for stage 2 which has not been shown to you. Possibly I can table that at the meeting today. This includes duplication of the highway into a four-lane configuration and provides an interchange at Algonia Road roundabout and also another off-ramp to the Huon Highway. That is stage 2 which is at concept stage at the moment, but we have plans to consider that. As traffic modelling dictates, I am now leading to 2027 and we need to seriously move to get option 2.

During the 2007 elections the State Government announced the ALP funding on a dollar-for-dollar basis and again during 2007 elections both parties announced funding on a 50:50 basis. However, since Labor came into power we did a project planning report for them. That was our submission to Canberra, the Channel Highway project proposal report which we called PPR. They accepted to fund to an upper limit of \$15 million. Although our estimates have gone up from \$30 million to \$41.5 million, they said they were not going to give us more than \$15 million. So we got that approval from the Australian Government to a limit of \$15 million and the State Government has to fund the balance.

At the moment most of the design works are detailed design works in progress. There was a major public consultation process undertaken, not only during case study and the design stage which happened in the December-January period. We have had numerous meetings with various community groups, such as Kingston Bypass Action Group, KBUG - which is Kingston Bicycle User Group, Cycling South and various business owners who are affected. A development application was submitted to the council on 15 June, which is being assessed at the moment. Our approximate timetable, subject to getting various approvals: we are planning to go to tender if not late September then early October. Contract awarding is expected in December, possibly with sod turning before Christmas. Construction goes up to mid-2012. That is a brief overview of the project.

Mr LESTER - The road project went through the typical DIER background surveys: Aboriginal heritage, European heritage and flora and fauna. The Aboriginal heritage survey didn't discover any Aboriginal sites. The European heritage survey didn't discover any listed sites. There were some areas of sensitivity that have subsequently been investigated and determined not to be of any concern. The flora and fauna study found two threatened species, which we have subsequently got permits for from DIPWE. The main issue as far as the environment aspects has been the presence of four hectares of ovata through the bypass corridor. It is fairly degraded. There's a method of rating ovata depending on how good or bad it is and it works out that it is 2.32 habitat hectares of ovata, which means it is equivalent to 2.32 hectares of good-quality ovata. That is an issue because it is swift parrot habitat so that triggered that EPBC Act, which we have done. We have made a submission or a referral to them and they've determined it a controlled action so we are discussing an offset and mitigation strategy with DEWHA in

Canberra. In essence, what it involves is 1.9 hectares of rehabilitation, which I pointed out on the plan - on the plan in the submission it is the blue area. That's adjacent to the corridor. It's full of weeds but it is good ovata habitat so DIER is going to rehabilitate that. In addition to that, there will be an offset of 1:5. So based on the 2.32 hectares DIER is going to offset a minimum of 12 hectares somewhere else in the south-east bioregion. That is finding a patch of existing good-quality ovata and reserving it. At the moment we are in discussions with a land-holder on the east coast and that looks quite positive. There will be 20 hectares of ovata forest there.

The third thing is we have provided some seed funding for an offset strategy for the 12 southern Tasmania councils which Kingborough Council will run. So the ovata strategy has three prongs. On ground rehab adjacent to the corridor, minimum 12 hectares somewhere in the south east bioregion offset and some seed funding to get this ovata offset strategy developed, which Kingborough Council will run, but it will be developed for the 12 councils.

That is all travelling relatively smoothly. We are in the process of advertising the referral information. It finishes, I think, in another week for the EPBC guys but they are comfortable with that offset strategy and it seems to be all falling into place.

The DA was submitted in mid-June. The major issues as far as the development application is concerned, or the main considerations that council are taking into account are offset strategies because ovata is a trigger in their scheme. But, again, we work fairly closely with the vegetation management officers, very closely in fact, so they are heavily involved in the development of that and just getting the noise mitigation right.

Regarding the noise, there was background noise modelling taken at 14 locations off hand along the highway route or the proposed route. When built or at ten years post being built so 2022 it was projected to exceed DIER's code of practice which is 63 dBA at 17 locations, 17 houses, and that is one metre from the façade of a house. So some noise mitigation was necessary and as we pointed out on site there are two noise ? Effectively one at Moira Road and one Lester Crescent. They are up to four metres high. The noise mitigation drops to the number of houses that exceed DIER's code of practice down to eight houses. So eight still exceed 63 dBA but they only exceed it by basically 1 dBA so they are all below 64 and the human ear cannot perceive somewhere between 2 and 3 dBA difference. So for all intents and purposes it meets their code of practice.

Mrs NAPIER - Are those householders happy with that?

Mr LESTER - We have not had any concerns raised. The application has to be advertised by council so there is still another public process, but there has been none through the other submissions in the public displays at the council and also at the shopping centres. No-one has raised any major concerns or any concerns, in fact, with noise.

Mr BEST - So can I just ask or should we wait till you have finished? The 17 dwellings, obviously they have been notified that you are undertaking noise testing and so forth one metre from their boundary?

Mr LESTER - The model is generated one metre from the exposed façade so it is not testing. The testing is background testing across various locations and that happened many, many months ago so they were notified of the placement of the reading devices.

Mr BEST - So how were the residents notified? How were they contacted?

Mr MANNERING - When we started doing the preliminary design for the project every land owner adjacent to the bypass corridor got a letter advising them that investigations for the bypass were going to commence. When we put the meters in to measure the existing background noise we measured them a lot closer to the property boundary but we did not step over the fence. None of the land owners would have ended up with us putting a meter in their backyard but they would have ended up with us putting a few in strategic locations pretty close to their boundaries.

Mr LESTER - The key to the background testing is that is there to basically validate the model. The model on its own can predict the noise and can understand the background but to confirm it works and that it is valid we need to undertake those spot background measurements and the background measurements through the 14 and 35 range from 35 dBA through to 67. So that particularly those houses at the southern end of Lester Crescent are already experiencing in excess of DIER's code of practice so through the bypass they will get a noise level that it should be a little bit quieter for them.

Mr BEST - So that I am clear on this. A letter has been received by those residents that back on or front on to the proposed project advising that there are investigations under way or planning regarding the bypass. Was there anything in that letter to suggest that you were going to undertake noise evaluations? I am just wondering what information those people actually have, because often things start to eventuate and then people say they did not know that was part of this. I realise that you have written to them, and that is fantastic, but I am just wondering if people are aware of the testing and what changes there will be. They would not have received any plans because you would not have had those; are you actually at the stage now where these plans will go out? Just going back, what advice does anyone have about the noise testing?

Mr MANNERING - There has been no specific letter that says that we are doing the noise testing. Probably the thing that has happened after that process that has given them the best opportunity to find out about that was when we did the public display in December. Each one of those landowners got a letter again saying that the public display was on, there are going to be plans showing what is going on, giving them the opportunity to come and have a look at the plans and then make a submission, so through that process they have had the opportunity. Also at that they were made aware of the plans being on DIER's web site so they could get on there and have a closer look. There were brochures available there at the time, both about the project and about the noise modelling process that we had been through. Out of that process I think one person might have asked a question about noise but no significant influx of people were too interested in it.

Mr GINNELIYA - Just to add to that, they will get two more chances. The council is going to advertise again within another fortnight for the public to come and view their backyard and front yard and how it will influence them and then we will forward them consultation before we go to tender. We will be door-knocking individuals who are affected by noise after the test.

Mr BEST - We do not have that completed, then, at this point regarding the project?

Mr GINNELIYA - No. I think that is the way; we send the report out and the consultation model. We started with the case study and then the concept, primarily, and we do it again at the detailed design level.

Mr LESTER - It is regular and ongoing throughout the project delivery.

Mr GREEN - On those particular sites we are talking about it being in the 1 decibel range, and it became effectively a stressful issue to residents at, I think you said, 12?

Mr LESTER - Eight.

Mr GREEN - Is there any way that any attenuation could be established near or around those houses?

Mr LESTER - There is no impediment in most cases to establishing attenuation. Into the future it is always a cost-benefit analysis and so you will not perceive the difference between the 63 and 63.8 or a 64 or even a 64.5 but -

Mr GREEN - It is right at the top end, though, isn't it, effectively?

Mr LESTER - Look it is and there is no getting away from the fact that aspects of those properties back onto a quiet rural environment and are going to be altered as a result. The key thing with the 63 dBA is that it is not that level. DIER's code of practise actually talks about it being the sound level that is exceeded 10 per cent of the time over an 18-hour period. That means that those properties that trickle over the 63 or are at 63 are ticking over 63 for 10 per cent of the time from 6 a.m. until midnight, so you will see fluctuations in the intensity and duration of the noise. They will notice a difference through there, there is no doubt about that.

Mr BEST - That is fine, but the difficulty I have is that you have not completed that part of it. Not everyone is going to be happy and I accept that but I am not sure what the situation is. I guess that is a matter for committee deliberations as to what happens there. It would have been nice to have known that the modelling would have been fully discussed and resolved as best as possible with the people affected. You might have 20 people and 16 are happy and two do not care and two absolutely upset, but we do not really know that at this point.

CHAIR - It just raises the question as to whether you want a response to that, Brenton. It's an observation.

Mr BEST - Yes, pretty much. I suppose you would tell me if I'm wrong.

Mr LESTER - There may be people who raised the issue of the noise tomorrow; there may be people who raise the issue of the noise when it's built. There is always an opportunity in the future for DIER to assess those issues and act on them at the time. I think Shoreline Drive is probably a good example where there's been some issues raised about

noise with some of the residents - in fact the opposite. They want the removal of the noise walls and DIER is undertaking that work.

At the moment we have a model that has been validated and it is an acceptable solution as far as the planning scheme is concerned and DIER's code of practice. Whether every single person along that route will be happy with it or not, it is impossible to say until it is built.

Mr BEST - Ordinarily we have the full consultation done and then it's presented. There is always give and take. I don't want to delay the project, but you're asking for us to approve it when it hasn't been fully canvassed.

Mr LESTER - No, but there's going to be consultation throughout the construction period as well. We are at a point in time where we have done extensive consultation but, you are right, there is still a lot of consultation to occur.

Mr BEST - But you've fixed your design on noise attenuation, haven't you? Is that right?

Mr LESTER - There is a design based on noise attenuation but if there are issues raised by the community then it is not difficult to do architectural treatments, for example, on properties - or extend the noise walls either up or along. We've got a fairly wide shoulder.

Mr BEST - As long as you're receptive.

Mr HALL - Dion, the ovata offset of 5:1 surprised me. I didn't realise it was that much.

Mr LESTER - Yes, it's a lot.

Mr HALL - That 12 hectares you're talking about, where was that?

Mr LESTER - It's on the east coast.

Mr HALL - So you're going to put a covenant on that? That is already an existing stance, not one you have to plant?

Mr LESTER - No. The forest has value because it's a foraging resource for the swift parrot. If you plant trees it is somewhere between 15 and 20 years before the parrots can feed on it, so planting isn't a valid offset measure for the swift parrot. They can't hang on for 20 years to get a feed. This is finding a patch of semi-mature ovata and protecting what isn't currently protected. You're right, it has to be 1:5. If we get the particular property for which we are in negotiations with the land-holder now, we will seed that. That is just because it is a patch and the land-holder is comfortable to negotiate on the whole patch of 20 hectares.

Mr HALL - The other question I had was on the two heritage matters. One was the Whitewater House and I think you mentioned you were going to carry out a building inspection. Has that been done yet?

Mr LESTER - No. The Whitewater property is where we parked today - the property to the left-hand side. It is not currently listed at any statutory level but it's a pretty impressive property so we have to make sure we don't cause any structural damage.

Mr HALL - And you have included in the budget any costs that you may have pre-empted in terms of any mitigation work you have to do there to look after that property?

Mr MANNERING - Yes, there will be enough contingency to allow for that. As part of DIER's standard process before they start letting construction works happen on site, we go through a process of working out which properties we want to do structural inspections on. Our organisation has done that before. We go out and do a survey of the existing buildings, look at any cracks or any existing problems, take photographs of all of that and prepare a report. If we get anything back during the construction period we can go back and examine those things again to see whether there is any change. It gives us a starting point to compare to. The Whitewater property will definitely be done prior to any construction work starting.

Mr LESTER - We are a long way away from it, too.

Laughter.

Mr MANNERING - The concrete cricket pitch is in a little bit of strife. It is very close to being saved but not quite. We would have liked to save it but did not quite make it.

Mr HALL - Okay, that is all.

Mr GREEN - With the ovata, the area that you are having to set aside is crucial to the project going ahead, effectively, isn't it?

Mr LESTER - Yes, it is essential, to gain EPBC approval.

Mr GREEN - So if the site that is under consideration at the moment is not successful, you will have to find another site, effectively?

Mr LESTER - We have a top 10. We have 10 sites that are all very high quality and this site is the second we are looking at and this is based on a desktop assessment and some site inspection. The first turned out to be good but not great. It did not quite have the criteria that we would need for mature ovata, so we ticked on to the second one. The second we have confirmed is very high quality, a lot of old growth ovata. The question now is just reaching an agreement with the land-holder and there is a level, I guess, of what is appropriate to pay because we have to compensate the land-holder and that is the only issue associated with this one. If the land-holder is particularly interested in getting too much money then we would probably look at option 3. But there are 10 sites there that are on the list.

CHAIR - Okay, continue on thanks, Dion.

Mr LESTER - I think that is it.

Mr BROOKS - As part of the traffic modelling for the Kingston bypass, GHD produced three major reports. First of all was the Kingston and Environs Transport Study modelling which Guna mentioned before, which is called KETS. The second was a Kingston bypass traffic analysis update which Guna also mentioned, and he has a copy there. The third was the Kingston Bypass Traffic Assessment which formed part of the DA application to Kingborough Council.

The Kingston Environs Transport Study was commissioned out of the Kingston Bypass Action Group, as Guna mentioned before, in October 2004. The objective of the Kingston Environs Transport Study was to model traffic solutions with State and local road networks and improve transport efficiency on the approaches to and within the Kingston central area, through a consultation process directed by the KETS steering committee.

The main traffic related issues raised repeatedly through the consultation included travel delays on the Channel Highway, unnecessary through traffic, rat-running along Maranoa Road and Lawson Avenue, access issues from driveways and side roads along the Channel Highway and access from Summerleas Road to the Channel Highway. A technical group was established by the steering committee to develop options to address the issues and 22 options were put forward and formally tested to determine their effectiveness under morning and afternoon peak periods as well as under estimated future traffic conditions. The option testing was undertaken using the traffic microsimulation software as this software is able to replicate the interactions between vehicles in a complex traffic system such as the Kingston area.

To start with, we produced two base models to replicate as closely as possible the existing conditions that were experienced in Kingston during the a.m. and p.m. peak periods. The base models were then subjected to a calibration and validation process to ensure a closeness of fit between what was modelled and the observed conditions of the Kingston road network. We did approximately 280 calibration runs and subsequent modifications to the models before the base models were deemed to be closely representing existing conditions. These base models will then form the starting point for all the options we test in the future. These models are used and modifications to the transport network and traffic demands were made to simulate the various options that were put forward.

Of the 22 options formally tested, 11 were without a bypass, 10 were with a two-lane, two-way bypass and one option was just a model estimating future traffic conditions if no improvements to the network were undertaken. Each of these options was tested using current traffic conditions and estimated future traffic conditions estimated to occur in 10 years' time, which at that stage was 2016. Some of the non-bypass options were also testing using five-year conditions, which would have been 2011. Future conditions were estimated using data from the Australian Bureau of Statistics, historical traffic rates sourced from DIER and known or assumed land-use development. The modelling indicated that non-bypass solutions did not provide substantial improvements to the Kingston road network under future traffic conditions, although some improvements can be gained through modification to the Summerleas Road and Channel Highway roundabout.

A two-lane bypass was the most effective method to address the capacity issues associated with the Channel Highway through Kingston. The interchange arrangements at Summerleas Road and ultimately at Algona Road are critical to providing a long-term solution.

The bypass option labelled BP10, which was the provision of a dedicated left-turn slip lane from the Channel Highway to the bypass south of Algona Road, was considered to be a very good lower-cost option for the short and medium term up to five years. It is similar to what is there now but not. It has been updated since then. The bypass option BP8 which was the extension of the Channel Highway to form a new bypass with Algona Road meeting the new bypass at the interchange with on and off ramps at Summerleas roundabout was going to be the best performing of all these options coming out of KETS.

After KETS then came the Kingston bypass traffic analysis update. In 2007 the update was commissioned due to the substantial development in terms of the road network and land-use changes that had occurred within the Kingston area. The objectives of this commission were as follows: model future traffic flows based on predicted growth rates from Kingston taking into account the proposed relocation of the Kingston High School; future residential growth within Kingston and the completion of the BigW shopping complex which is now called Channel Court; and define access and junction requirements to the State road networks, including the proposed Kingston bypass, to support these developments.

The traffic volumes within the existing KETS model were factored up to reflect the 2007 traffic volumes based on historic traffic volume growth rates supplied by DIER. For this update five options were tested. What options were tested were agreed upon during a meeting between DIER, Pitt & Sherry, and GHD. Each of the options investigated a different stage of the bypass development, which is what Guna mentioned earlier.

The first of the options was the initial upgrade of Algona roundabout, which Ross mentioned on site this morning, for 2017 and 2027 estimated traffic volumes. The next three models were stage 1 that you see before you in this plan here. These models had different, varying traffic conditions based on the location of the Kingston High School for 2017 and 2027 traffic volumes once again. The last of the models was the development of stage 2 which is the option that Guna tabled earlier where the Algona interchange down the south is converted into a grade separated interchange with an additional grade separator interchange at Huon Highway for 2027 traffic volumes.

As part of this modelling, a capacity analysis was also undertaken on the two-lane, two-way bypass based on traffic volumes predicted during 2027. The capacity analysis indicated that the proposed configuration of the bypass will cope with peak hour volumes and that a four-lane bypass is not likely to be warranted until beyond 2027, which at the time of this report was outside the forecasting range of the project and also outside the range of land-use planning information that was provided by Kingborough Council.

The conclusions that arose out of that Kingston bypass traffic analysis update concluded that there would be benefits in regards to accessibility of Huntingfield area by constructing a five-leg roundabout at the interchange of Channel Highway and Algona Road. This staged approach to the southern interchange for the bypass also allows for site access during construction of the bypass. The stage 1 bypass will adequately cater

for 2017 volumes regardless of the location of the Kingston High School. At some time leading up to 2027 the stage 1 southern interchange configuration, which is Algona Road roundabout, will reach capacity and the stage 2 interchange configuration will be sufficient for expected traffic volumes in 2027 and the grade-separated interchange at Algona Road should be investigated prior to this point.

GHD was approached by DIER and Pitt and Sherry in April of this year to provide further advice on a bypass model to form part of the DA to be submitted to the Kingborough Council. The information that we subsequently provided was the operation of the Summerleas Road interchange and, in particular, the northbound on-ramp merge, the level of service that would be experienced on the bypass in comparison to the Channel Highway, the inclusion of the proposed St Aloysius High School in Huntingfield Avenue, and the inclusion of a proposed residential release in Huntingfield. GHD was also requested to detail expected delays and queuing at each of the on and off ramps on the bypass for 2012 - the expected year of opening - and for 10 years beyond that. GHD updated the model for these years by interpolating 2012 and 2022 volumes from the original 2017 and 2027 volumes of the previous study. The existing models were also required to be modified to take into account slight variations in the design prepared by Pitt and Sherry from the original traffic modelling.

Based on the current design, GHD undertook further capacity analysis for the bypass. The capacity analysis showed that in 2022 traffic in the peak direction will be approaching the nominal capacity, however speeds are expected to remain relatively high, indicating that the level of service for a two-lane, two-way bypass will be acceptable. Beyond 2022, growth in peak-hour traffic may require a review of the capacity provided on the bypass. However, the report also stated that it is likely that as peak-hour volumes increase relative to capacity, peak spreading will see traffic in the adjacent hours increase relative to the peak hour, increasing the time over which capacity is reached. This means that instead of all the traffic approaching the bypass between 8 a.m. and 9 a.m. it will spread out between 7 a.m. and 10 a.m., for example. So there will be more traffic but over a longer period of time.

The capacity analysis of both the Algona interchange and the Summerleas interchange were also assessed using aaSIDRA - intersection analysis software. The analysis of the Algona interchange found that peak-hour performance on most approaches will remain within acceptable limits, whereas during 2022 the Algona Road and Channel Highway northbound approaches are likely to be operating at capacity in the a.m. peak. This confirms the previous modelling work done by GHD that a grade-separating interchange be investigated in the period leading up to 2027.

The analysis of the Summerleas interchange found that the interchange is expected to operate with minimal delays in the future, with maximum average delays of 27 seconds under estimated 2022 traffic conditions. The conclusions arising from this additional advice indicate that a two-lane, two-way bypass with a five-leg roundabout at its southern end and a grade-separating interchange at Summerleas Road will provide an adequate level of service up to 2022.

Mrs NAPIER - So you're saying that the capacity of those interchanges are reasonable up to 2022, but earlier you referred to reaching capacity in 2027?

Mr BROOKS - The initial years of 2017 and 2027 were chosen before the design of the bypass and before we knew an opening date for the bypass. We were doing the traffic modelling in 2007 we provided 10-year and 20-year horizons for the modelling. In this latest work, we were specifically asked to look at 2012 because that is the year of opening and then a 10-year horizon of 2022. The model that was recently done is slightly different due to the changes made to the bypass operations. That is why there are slight variations in results between those two. Does that answer the question?

Mrs NAPIER - Yes.

Mr BEST - Obviously there are going to be huge improvements but what do you see as the normal standard delay or lost time? Is there a figure? Just as an indication perhaps?

Mr BROOKS - I do not like to use values off the top of my head. I have the initial reports with the values.

Mr BEST - Presumably it will have an affect on the carbon footprint.

Mr BROOKS - At Whitewater Crescent the average delay in 2022 is expected to be around 10 seconds and at Summerleas Road in the afternoon - which is the worst case - around 27 seconds which is very minimal.

Mr BEST - I suppose if you extrapolate that over the total number of vehicles it adds up.

Mr BROOKS - It is an average delay experienced by all vehicles. It is not cumulative. It is like if two cars are at an intersection and the lights are red they both experience the same length of delay so they are both standing there for one minute until the light turns green and then they go. It is not a cumulative value.

Mr BEST - You have mentioned the expansion of schools, et cetera, what sort of projected population are you looking at?

Mr BROOKS - The initial modelling made an allowance for 430 dwellings in residential subdivisions and the new St Aloysius School catering for 400 students. The most recent modelling we did was in the order of 600 dwellings but the school will cater for only 310 students. In regard to the housing development, we also undertook a sensitivity analysis to see how many developments could go ahead before the roundabout gets to capacity and I believe it was 100 units without an additional exit from the Huntingfield area.

Mr BEST - There are subdivisions proposed in this vicinity. It is easier to point to your map.

Mr MANNERING - Peter Eldridge's property is on the western side of the bypass and he has plans for about 440 lots and that is probably a medium-term development. Kingborough Council also has in its long-term vision the development of the Whitewater property which is very much a long-term thing and certainly not on the radar of the owners at the moment. They do not want to limit their future development potential but they are certainly not looking to subdividing any time soon and the council would not support it until this land has been developed to its full potential.

Mr LESTER - It says a 20-plus year horizon.

Mrs NAPIER - Do we know whether there is approval for 100 units to be built in the Huntingfield estate?

Mr GINNELIYA - Not yet. They are looking at doing it in stages. At the moment the master plan has been done by Sinclair Knight Merz but our department is facilitating to get this at a nexus. Without a nexus Algona Road roundabout will not work. They want to do more than 100 lots. They are having 300; they are having big plans. They want to spend so many millions of dollars.

Mrs NAPIER - Are you saying that it is highly likely that there will be a need for a separated interchange in 2022?

Mr BROOKS - Past 2022. The report says it should be investigated around that time. It is all based on future estimated traffic conditions, so you have to review it periodically to make sure that the predictions are coming to fruition.

Mrs NAPIER - With a separated interchange as is demonstrated on the map that you have circulated, what is the additional cost of that with the two roundabouts and the flyover?

Mr MANNERING - We have not done any detailed numbers on that for quite some time. To provide the grade separator interchange you are up for another bridge so there is at least \$2.5 million out of that. You have an additional bit of road to build between the two. You have another roundabout to build on the other side plus the ramps connecting to it so I would not like to speculate, but it would be a number at least more than \$5 million. That sort of number.

Mr HALL - On the roundabout, I think it says in the notes that it is the largest roundabout in Tasmania. It will be with five legs on it and I think most of us would have travelled outside Tasmania and driven the very large roundabouts and sometimes they can be quite confusing because there are a lot of different exits at the same that you are trying to concentrate and focus on your driving towards where you are going to go. Mr Harriss raised the lane issues and the markings and everything else. I think roundabouts are a great traffic calming device and everything else, but were lights considered at that particular intersection in lieu of a roundabout?

Mr BROOKS - I know that a T-junction was investigated. It was considered in the KETS report which I have here.

Mr MANNERING - I could have a crack at that. The issue with signalised intersections is that while you are letting one phase run to let one traffic go everyone else is sitting there, or a lot of the other legs are sitting there and not getting a go. What you find in a situation like this where you have lots of cross movements is that the queues on the legs end up growing substantially bigger than you would have with the roundabout in this configuration. So while you are to give the traffic say coming out of Algona Road to get on to the bypass a run you might be stopping traffic on the existing Channel Highway or traffic coming from Margate. With the amount of volumes you have, if you stop that traffic the queues would grow out of sight in no time. Even if you put signals in there now, it would be a nightmare. If you look at the existing roundabout at Summerleas

Road you would see what the queues are now and if you replace that with a roundabout, they would be back in town somewhere.

Mr BROOKS - To answer your question, yes, one of the options was a bypass configuration and the extension of Algona Road meets the bypass at a signalised intersection. So, yes, that was considered in the original KETS and -

Mr HALL - It didn't stack up?

Mr BROOKS - Yes. We did not continue on with it.

Mr HALL - With the Spring Farm overpass, was an underpass considered there as an option at all?

Mr MANNERING - An underpass at Spring Farm Road?

Mr HALL - Yes, in lieu of the overpass.

Mr MANNERING - It is really the terrain that is going over the top there. As was pointed out while we were on site, there is a little bit of an uphill grade along the bypass as you come through, so we have really been trying to limit our earthworks but trying to keep the bypass as close to the existing surface as we can. As we come through Spring Farm Road, for the heavy vehicles and large vehicles we have to have a minimum of five-and-a-half metres clearance, so either way we were either going a long way down or a long way up. Given that we have a slight downhill grade on the existing terrain heading down towards there, going over the top was the most suitable way to do that.

Mr HALL - We've had submissions talking about some disappointment that it ought to be a two-way, four-lane highway, the whole construction. I think we talked about that down on site, that there is a significant additional cost to that. Did you have a figure in mind?

Mr MANNERING - As I mentioned down there before, we haven't put a number on a dual carriageway for probably three years now, I suppose. Back at the time when the bypass was costing substantially less than it is costing now, that was, I think, a 55-type number; given some of the things that have crept into this job through the community consultation we have been doing, to add that on to what we have now it is at least a 60-plus number, substantially more than anyone would have dreamed coming into this project.

Mr HALL - Just to clarify and put it on the record, we have the wire-rope barrier virtually separating the traffic on both sides right down the middle. Also, I think you will have the protective noise barriers and also wire-rope barriers there. If there is a breakdown, is there sufficient room for that vehicle to pull off the road and people can get past so that there's not going to be a traffic blockage?

Mr MANNERING - I can explain the cross-section for you. The wire rope that's down the middle for the majority of it, except near Summerleas Road, is in a 1.8 metre wide sealed median, so you've got 900 mm, roughly, either side of the wire rope before the traffic lane. The traffic lanes are 3.5 metres wide, which is consistent with the Bass Highway, Midland Highway and most other locations. Because of that wire rope we have provided

a 2-metre shoulder on the outside, which gives enough room for a vehicle to get out of the way of traffic.

Mr HALL - And for cyclists?

Mr MANNERING - Yes, for cyclists. It gives them good clearance.

Mr HALL - Would you designate those as cycling lanes at all?

Mr MANNERING - No, we don't want to attract cyclists to the bypass, given the volumes and high speeds. We'd much prefer them, once all the traffic comes off the existing Channel Highway, for them to use that instead. As we have mentioned before, the 2-metre shoulders and the dense-graded asphalt service will probably attract a few of them on to there instead. The existing Channel Highway will probably become a bit more attractive for kids riding to school and that sort of thing.

Mr HALL - A little bit more, I would only suggest.

Mr MANNERING - Yes, but once Spring Farm Road goes through, with the shared path we have on that and also the Summerleas Road shared path, that will be reasonably attractive for people to use that road.

Mr GREEN - Even though we haven't had your submission yet, can I ask you a question following on from Mr Hall's questions? With respect to the dual carriageway, what, if any, preparatory work will you be doing to allow for that project to be undertaken some time in the future?

Mr MANNERING - There are a couple of things that we're doing for that. As we have mentioned, there are two major bridges on the project: one at Summerleas Road and one at Spring Farm Road. Both those bridges will be built to facilitate the bypass being duplicated, so they will be built with two spans. When the traffic volumes get to a point where it does warrant being duplicated we won't have built two bridges that need to be thrown away, so that's a good thing. The other thing we are doing at Summerleas Road, because we are in so much cut there we generate a lot of excess material and rather than throw that away and then when the bypass has to be duplicated have to go and find it from somewhere off-site, which has a substantial cost associated with it, we are using that material to place the foundation for the second carriageway behind Maranoa Road. Through that area the bypass corridor has quite a lot of cross-slope on it so we are in a little bit of a cut on the top side but a heap of fill on the bottom side, so to avoid having to find a lot of material later on we're going to place that there as part of this project.

CHAIR - With regard to the grade separation in the future at Algona Road - and I am relying on a submission to the committee from Mrs Walker who, as I said earlier, is here. She has indicated that the KETS identified at the grade separation would be the preferred option and that to not go that way would provide a satisfactory option, when it is built, for only five years and that was identified in 2006, according to KETS, that a non-grade separation at Algona Road would only be satisfactory for five years in 2006.

Mr BROOKS - That was not what was specifically said. It said that one option that I mentioned, was a good short to medium term, would be good for about five years.

However, this design, which is current, was not one of the designs in the initial KETS. There has been a lot of work done since KETS to produce this and a lot of extra modelling done that has changed the configuration priorities at the roundabout itself. I think I have a picture of the one you mentioned. That is the option that was given as about a five-year option. It is similar in that there is a slip-lane but the priority is for Alguna, not Channel Highway, in that option. In this option, obviously the Channel Highway has precedence over the Alguna Road.

CHAIR - That was the bypass 10 option?

Mr BROOKS - Yes.

CHAIR - It was that particular bypass 10 option which was identified as being only suitable for five years and Mrs Walker acknowledges, in her submission to this committee, that what you are proposing here does have a larger roundabout.

Mr BROOKS - Yes, it is substantially different. That option there keeps the original Alguna Road roundabout.

CHAIR - Yes, thank you.

Mr GINNELIYA - The model was updated in August 2007; after that they recommended stage development rather than doing it once. So you pursue that as well -

CHAIR - Certainly and that stage development issue Mathew has covered in his presentation as well, recognising that, down the track, the grade separation will need to be attended to. Any further questions on those matters at the moment?

Mrs NAPIER - Whilst we are looking at Alguna, there were some issues raised also in Mrs Walker's submission as well as yours about pedestrian access and we talked about it a little bit when we talked about the bus turning circle that has been built in there at the end of Huntington Drive. What research caused the underpass to be provided up there on almost the eastern end of the Australian Antarctic Division, under Alguna Road, rather than perhaps providing better pedestrian access into the housing subdivision area?

Mr MANNERING - When we started having a look and through the consultation that we have done with Kingborough Council, the Kingston Bicycle User Group and Cycling South, they raised pedestrian connectivity issues between Huntingfield and the rest of the Kingston township as one of the things they were particularly interested in. At the moment, when you go across Alguna Road roundabout, it is a grade separated crossing, so there is a pedestrian crossing and a kerb on either side and then there is a split in the island. There may even be ramps on either side so you can cross in a staged manner. At that time, it was really only our intention to provide that as part of that status quo, if we were not changing anything in terms of how it works now. Through the consultation we did, they were pretty keen for some grade crossing to go in. So the department asked us to have a look at what we could do to get something in at the roundabout. We looked critically at trying to provide a pedestrian underpass there and we also looked at providing a pedestrian overpass. The main difficulty that we have is the pedestrian overpass and you can probably work out why no-one likes that in a minute.

Laughter.

Mr LESTER - It needs to be DDA compliant and that is why you need to have it sneak its way up.

Mrs NAPIER - It would take all day in a wheelchair.

Mr MANNERING - Yes, that is right. The big constraints we have at Algona Road are the proximity of the property boundaries on either side and also the number of services that run through there. Trunk water runs through there. There is high voltage electricity as well as Telstra. There is local water for council. If you dug a hole in the ground there is a fair chance you would hit something. So the underpass went out the window fairly early on.

We had a look at the overpass and, as Dion mentioned, we required or the department would like any overpass that goes in or even the underpass to be DDA compliant. The footprint of what you can see on there is what it would take to get a structure that was DDA compliant, to get 5.5 metres clearance over the top of Algona Road. That was met with a fair bit of resistance because it was probably going to create the potential for people trying to rush across the road anyway so we were going to build probably a \$2.5 million structure that people did not want to use.

We then went back to the people whom we had been talking to and said that this is difficulty we have. They were still pretty keen and then we came to what is the best alternative we can come up, which is how we got to the pedestrian underpass on Algona Road. Admittedly it is not where we want it. We would prefer it to be up at the roundabout but it does provide some good connectivity. Just where the yellow line ends as it joins onto Patriarch Drive, that is right at the point where you can get into the Peter Murrell Reserve so it provides really good connectivity down to there. It is also a short walk from there back up to Huntingfield Drive to continue across into the main residential area.

The other thing that pedestrian underpass probably does provide in the future is that the property adjacent to the Antarctic Division opposite where Spring Farm Road will come out has future development and commercial potential. Mr Rockefeller has that property. Through that pedestrian underpass there is a chance, as part of that development, that the pedestrian path could be connected through into that development and then back onto the Channel Highway. It is not what we would really like but it is the best alternative we can get with the constraints we have.

Mr GINNELIYA - And the groups are reasonably happy and we also checked the council master plan on cycling and pedestrians. It blended with that path, as is shown in the master plan. Both parties are reasonably happy at the end of the day if we provide this and it will link with the master plan for the future.

Mrs NAPIER - Is there much walking traffic that comes from Huntingfield Drive down the Channel Highway?

Mr MANNERING - Not a lot. The biggest generator out of it will probably be the new school.

Mr LESTER - The two new developments - the school and, if it eventuates, the commercial development on Rockefeller's - will create a pedestrian demand that is not there at the amount. This pedestrian crossing actually facilitates the most effective way to Rockefellers and the school in the future.

Mrs NAPIER - Apart from people who are going up to the reserve I cannot see why people would actually go up there to use an underpass to swing back up to Huntingfield Drive. Pedestrians are not like that. Pedestrians just take the fastest route and they will just cut across the road. We are humans and that is what we do.

Mr GREEN - Not if you are a skateboarder.

Mrs NAPIER - I have a boy who used a skateboard. He lived at South Hobart, and that is how he got to work and back again. I will tell you, they take the fastest route and the shortest route. They are not going to go an extra block.

Mr MANNERING - In arriving at the arrangement we have there we are fully aware of that and we are putting back the kerb crossings and still providing that staged crossing across Algona Road, so for anyone who does want to keep doing that we have made that as safe as we can at that point.

Mrs NAPIER - If you have traffic lights going across Algona Road presumably that's going to hold up the roundabout.

Mr MANNERING - Yes, that's right.

Mrs NAPIER - So it would be optimum if we could get them under the ground and keep the traffic in that area moving, if one of the major blocks that you're trying to overcome is the Huntingfield Drive area.

Mr MANNERING - In an ideal world we'd always go for great separation as a first point.

Mrs NAPIER - Is it that big a structural issue in terms of not being able to get an underground one across there?

Mr MANNERING - Yes. To accommodate a structure in there would mean a substantial amount of redesign and relocation of services. It is not a cheap exercise to do that. The corridor for the bypass has been established for quite some time and the land acquisition has been undertaken, so we would have to go back. There would be further acquisition and relocation of services.

Mrs NAPIER - It doesn't look very pedestrian friendly but then again it depends on how much pedestrian activity is there or is likely to be there. There could be increased pedestrian activity required because of the commercial precinct. One of the difficulties is going to be if you start putting traffic lights across the operation of this roundabout; it will mean that the design won't work. You can't be putting traffic lights in if what you're trying to do is encourage through traffic and keeping it moving. Given that issue in terms of future development, I can't see that is good design for potential future pedestrian traffic.

CHAIR - Ross, you've indicated that to do what Sue is suggesting is substantially expensive but if you delete the intended underpass at Algona Road but instead do the underpass closer to the roundabout, was is the cost difference?

Mr MANNERING - The pedestrian underpass is probably about \$500 000.

CHAIR - The one proposed?

Mr MANNERING - Yes, the one proposed. You have to close Algona Road to build it, so you have to excavate down, build the underpass and then reinstate the embankment and rebuild the road. It is quite difficult to do because we don't want to close Algona Road for very long. It is a bit of a challenge in doing that. It is probably around about a \$2 million difference between the two structures. What we have there doesn't preclude the overpass from going in at a later date. The biggest constraint on the overpass is making it DDA compliant. If you didn't want a DDA-compliant structure, it would be a lot shorter and the costs would come down. They are the constraints that we have to work within.

Mrs NAPIER - Couldn't you re-route the traffic up Huntingfield Drive at the back of Mitre 10? Is there a road that connects across to Algona Road there?

Mr MANNERING - No, there's not.

Mrs NAPIER - You do that all the time with bridges; you can put a road through on the side.

Mr MANNERING - In an ideal world with a pedestrian underpass going in we would have a temporary detour of the road, but there is more eucalyptus ovata in Coffee Creek and a couple of other things in there that we need to avoid. We are going to give the contractor a window of about one week during the school holiday period when the traffic demand is down for them to close the road and build the structure.

Mrs NAPIER - You might not be able to put your underpass in a straight line underneath where the triangle is at the moment that shows where the median point is for people crossing that road, but if you put it down the road a little bit so that people have to backtrack a little bit then presumably you would overcome running into the pipes and wires and whatever else. It seems to me that your Antarctic Division people would be connecting with Mitre 10 people. I am not an expert on the area, unlike the Chair, but at least make sure that you get better use out of your underpass for not only your commercial exchange there but also down the Peter Murrell Reserve. Then in the future presumably you are being looking at how you provide for pedestrian connections across what is the old Channel Highway, if there is a commercial development there. You certainly do want traffic lights on it.

Mr MANNERING - No.

Mr GINNELIYA - What happens in the future is that when we have a grade separation there will be much less highway traffic going over.

Mrs NAPIER - Yes, I accept that.

Mr GINNELIYA - When we get that separation.

Mrs NAPIER - You and I cannot see a huge amount of money in the next 20 years going into here necessarily, because you have also the Huon Highway issue, which you have identified in terms of a safe connection to Summerleas Road. The road's budget is as tight as I have seen it. You need a BER that deals with roads - instead of giving everyone gymnasiums all the time. There are plenty of roads to fix - absolutely.

I just have some concerns about that pedestrian issue, because of people. I do not see huge traffic there at the moment. What concerns me is that we are suggesting we are going to have traffic lights there that will actually impede what is the intention of having a free flowing roundabout to connect five points.

Mr MANNERING - There is no intention to put traffic lights in there on that approach.

Mrs NAPIER - We just run the cars?

Mr MANNERING - If people still want to cross at that point, they will have to give way to the traffic, the same as anyone would crossing the road at a point where there were no traffic lights.

Mrs NAPIER - So we are not going to put lights in there.

Mr MANNERING - No. There will be a kerb crossing, which will be a break in the kerb. You will have to give way to traffic if you are crossing from Huntingfield towards Kingston. You would have to give way to the two lanes of traffic coming on your right. You would then proceed across to the splitter island in the middle, which would have a gap in the island so you could shelter in there. Then you would have to pick a gap in the traffic departing the roundabout to walk across the next bit.

Mrs NAPIER - I do not think we do need traffic lights on there, so that is kind of reassuring, but then I would still wonder why this underpass cannot be a closer direct line connection for Huntingfield Drive and so on - even if we built it down the road a little bit.

Mr MANNERING - Even if you were to try and move the pedestrian underpass closer to the roundabout you have still got to get ramps that are DDA compliant down into the structure. The structure is 2.4 metres high so you can allow someone to ride a bike through there, so by the time you get that amount of clearance underneath the road and you get your ramp down you are still a long way away from the roundabout. Trying to encourage pedestrians to use that would be very difficult.

Mrs NAPIER - We discussed the fact that apparently Metro does not want the bus interchange to be there at the end of Huntingfield Drive. They want it somewhere else, near where there are shops and something like that. I just wondered if you could outline what allowances there will be for people that presumably will walk down. Is there to be a bike shelter so you can lock your bike up there, to be able to ride your bike from Huntingfield down to the bus? What is the arrangement anticipated?

Mr GINNELIYA - There is provision for shelters for the bicycles and up to 20-30 cars. Informal car parks, not formal car parks, a number of bus shelters and cycling.

Mr MANNERING - The real thing the bypass is going to deliver, apart from the reduction in traffic congestion on the existing Channel Highway and improved access out of Redwood Drive, is that there are a lot of developments going on down in Kingborough that the bypass is going to provide a lot of benefit for. As we indicated down on site, expansion of the St Aloysius school, and DIER agreeing to build the Algona Road roundabout first in part of the construction process, allows them to continue developing the school. It provides no impediment to them, whereas if the project did not proceed, council would not allow them to complete their development.

The connectivity of Spring Farm Road over the top of the bypass is very much an opportune thing. If you wanted to come back later and try to build a bridge over the top of the road that you already had 18 000 vehicles a day running down, that would be a very difficult thing the longer you leave it. Then you have to force them back onto the existing Channel Highway and there would obviously be some issues associated with that. So that Spring Farm Road provision is a really good thing. Relocation of the high school, expansion of the sports centre, development of Peter Eldridge's property and facilitating further residential growth in Kingston, there are a lot of benefits that the project provides apart from just reducing traffic congestion and improving safety on some of the local roads. So that is the key thing that the bypass delivers, apart from the obvious thing when you look on the plan.

CHAIR - I have one matter to put on the record, the matter I raised on site. It must have been on the computer simulation, but there is somewhere that I have seen on your diagrams or presentations about the arrows heading south as you approach Algona Road roundabout. You indicated to us out on site that there will be no confusion because the left-hand lane will only have the option to turn left into Algona Road, heading south. Do you want to clarify that please? That large diagram which you have in front of you and which we have in our submissions makes it quite clear as to what is intended there but it must have been the fly-over that I had seen.

Mr MANNERING - There are two things that we have going in at the roundabout. There is not only the pavement marking but there is direction signage on all of the approaches. Over the last couple of months we have been working really closely with DIER to work out what direction signage we are providing on the approaches to the roundabout to help people choose which lane they want to be in before they get to the roundabout. Then, as they get closer, there is obviously the pavement marking to help them decide which lane they need to be in.

We were talking before about the existing Channel Highway and the lanes there. So there is a designated left-turn lane for people coming out of the existing Channel Highway and heading down Algona Road. That left-turn lane will have a left-turn only arrow in it and there will be signage also indicating that.

The right-hand lane there does not get any pavement marking in it because you can choose any other leg. So you could turn left down Algona Road, you could go through to Huntingfield, you could go further down the Channel Highway to the south or you could go around the roundabout and onto the bypass.

The Algona Road approach is pretty much a conventional two-lane approach to a roundabout. Although this roundabout has two circulating lanes in places, and one across in a couple of places, it is very much a conventional approach. So there should not be any problem with that, and the same with the Huntingfield Drive approach. The approach from the Channel Highway to the south is only a single lane so, again, very straightforward and you can choose to go where ever you really want to go.

The bypass one is an interesting one. Because there are five legs there is always going to be a little bit of thought that the driver is going to have to put in to negotiating the roundabout to get where they want to go. Obviously the direction signage before they get there gives them the best opportunity to work that out. So the left-hand lane approaching the roundabout allows a through or a left movement and that through movement is through to Algona Road. So Algona Road has two lanes on the departure. So you could be in either lane and go down to Algona Road. If you are in the left lane you could turn onto the existing Channel Highway and head back into Kingston and if you are in the right lane you could go through to Algona Road, turn right and go around to Huntingfield or you could continue south along the existing Channel Highway.

CHAIR - Thank you. Have you done any modelling as to interruption to north-bound traffic from the Channel when the roundabout is being reconstructed or the new roundabout is being built. That will be a substantial hold-up, won't it, at peak times?

Mr MANNERING - Mathew can probably talk about that because he has modelled that as far as I am aware.

Mr BROOKS - You are talking about the actual construction of the roundabout?

CHAIR - Yes, and the effect that will have on north-bound traffic from the Channel.

Mr BROOKS - I have not specifically looked at that construction stage modelling.

Mr GINNELIYA - That could be done as part of the condition of contract. The contractor shall model and get departmental approval before construction commences as part of the construction management plan which is part of the construction program.

CHAIR - What period of time do you think will be taken to construct the roundabout?

Mr MANNERING - It should be ready for the start of the 2011 school year so we are basically telling them that they have to have the roundabout finished by, I think, 31 January 2011 to give us a little bit in case we have some wet weather.

CHAIR - You commence construction when on the roundabout?

Mr MANNERING - Assuming everything stays according to plan, they will start late this year and so basically from the end of 2009 to early 2010 through to early 2011, so the first 12 months basically.

CHAIR - It is going to take a year to construct that roundabout?

Mr MANNERING - Yes. It is going to take so long because of all the underground services that are in there. In Maddox Road, Transend have a substation and out of that there are six high-voltage electricity cables managed by Aurora and the bypass clobbers every one of those six cables so they need to be relocated first before any of the roundabout can start to be built so that is where the time is.

Mr HALL - It does not worry the rest of the committee, but Mr Chairman will have to get up an hour earlier of a morning.

Laughter.

CHAIR - And everybody else who lives south of the roundabout.

Mr GREEN - Roadworks are fantastic when you are drawing them up but when it comes to building them it is different. Cooee was a good example of that.

Mr MANNERING - With the contract documents there will be some very tight constraints over what the contractor can and cannot do in terms of traffic management during construction so we are very conscious and we know there is congestion down there now. Obviously, when you are building a road there is going to be some increased delay but we want to try to keep that to a minimum.

CHAIR - Mrs Walker in her submission indicates that she attended the display at BigW just prior to Christmas 2008. She forwarded a submission containing her concerns to DIER and received no acknowledgment of this.

Mr GINNELIYA - That is true. In general the practice in DIER is that we do not respond to each and every person who makes a submission because it will open a trail of correspondence and we had more than 100 submissions not only for this project but any project. We openly acknowledge that we do a media release and thank them and take the issues on board and wherever possible we try to incorporate it in the design but we do not usually acknowledge every time unless somebody specifically asks us. It does not happen and that is not the practice.

CHAIR - You said you had over 100 submissions.

Mr GINNELIYA - Yes, over 100 submissions so we cannot correspond individually to everybody. It is an enormous task. It is not just one issue, each correspondent has several issues and if we respond it would come to an argument and a long chain of correspondence between DIER and the various residents, so we do not generally do not that kind of response.

CHAIR - Do you encourage people to make their comments to you?

Mr GINNELIYA - Yes, we do and that is the purpose of having public displays.

CHAIR - So you encourage comments but you do not respond?

Mr GINNELIYA - Individually, we do not.

CHAIR - From an engineering perspective I think everybody acknowledges the bottleneck is currently caused at what I will refer to as the McDonald's roundabout. That is where the problems start and they back up along the Channel Highway and they also back up along Summerleas Road as a result of that roundabout because it is a single lane coming out of Summerleas - formerly a single lane - and formerly a single lane coming out of the Channel Highway from the Kingston Shopping Centre. Informally people will form a couple of lanes to try to help ameliorate the problem. How difficult would it have been over the last few years, since the problem started to arise, to formalise what is now an ad hoc process where people in an ad hoc manner form two lanes to either Summerleas exit or entry onto the outlet or the Kingston Shopping Centre area? That is where the bottleneck occurs. Would it be difficult or don't you have the room at the roundabout?

Mr MANNERING - Without having the property boundaries in front of me I probably can't give you a definite answer. From looking at it, I would suggest that probably getting a short left-turn lane on the south-bound approach to the roundabout would probably be feasible, probably enough to get two or three vehicles in there. You could separate two or three of the left-turning vehicles from the throughs and rights. With the other approaches, the property boundary constraints would probably prevent you from doing that.

CHAIR - It might have been a really interesting exercise since this study commenced back in the mid-2000s to have investigated doing just that. If you're coming out of Summerleas Road and wishing to turn left to head to Hobart, there's plenty of land there and if we could have provided two lanes there so people could swing around easily and not bank up through Summerleas Road back to Whitewater Crescent, and likewise coming out of the Channel Highway from the Kingston shopping area, again there is formally one lane. There is plenty of room, plenty of DIER land on the left-hand side, to have formed two lanes. It may have been a very interesting exercise to see what that did for the traffic congestion along Channel Highway as it banks up back to Algona Road. It's never been tried.

Mr BROOKS - There were some modelling options which provided upgrades to the McDonald's roundabout. I think the results say it alleviated some issues but they weren't prolonged; they were within the five years. Installation of additional through and turning lanes on Summerleas Road-Channel Highway roundabout was done. Generally none of the non-bypass options tested had any significant impacts on reducing delays and queues through the Kingston Road network during the morning and afternoon peaks. This was particularly the case on the Channel Highway corridor between Southern Outlet and Huntingfield under future traffic loadings. It was noted, however, that some of the non-bypass options appeared to improve the localised traffic issues such as improving access to specific side roads. So it was looked at but there were no large benefits.

CHAIR - I accept that as evidence-based rather than anecdotal that I have presented to you. Thank you, gentlemen, for your presentations.

Mrs JUNE WALKER WAS CALLED, MADE THE STATUTORY DECLARATION AND WAS EXAMINED.

CHAIR (Mr Harriss) - Thank you, Mrs Walker, for providing your time to come along and speak to the written submission which you have provided for the committee. You are aware, of course, that we have referred to your submission in some of the questions we have posed to the delegation this morning. Would you like to speak further to your submission or is there anything you want to elucidate particularly from it?

Mrs WALKER - You did ask the question about the consultation process. When I say I had no acknowledgment, I thought it would be normal that if somebody sent a submission to a department they would get at least a letter saying that it had been received. That is all I was asking for, not a detailed submission or a response or whatever.

CHAIR - Just so that you know they have at least received your information and might like to take it into consideration. That is a reasonable process, I think.

Mrs WALKER - I think, too, that it was displayed at BigW for three days or maybe four. But certainly when I went back the second time to have a look at it, it had already gone. It was just prior to Christmas, so there were crowds of people in the BigW foyer and most of them were concentrating on going in and out of BigW, I would have to say. But at least we did get the opportunity to look at the plan. I thought it was disappointing that there was no public feedback. It could just have been a summary of the objections that was drawn up or something just so that people knew that their views had been taken into consideration and then maybe the changes that had been made to the design as a result of those comments.

I referred in my comments to the KETS report but the representative from the consultants has made reference to a further 2007 report which I did not find on the web. I am wondering if it is publicly available?

Mr GINNELIYA - I can make a copy available to the committee and to you as well.

CHAIR - Is there a copy of that on the web?

Mr GINNELIYA - No, it is not on the web. It was done as part of the original development for Kingston, the location of the high school et cetera, so we had to upgrade that original model.

Mrs WALKER - I think it would have helped if it had been available because then I would have realised that there was another report available and I could then have perhaps made a bit more sense in my submission.

Mr GREEN - Mr Chairman, as a result of it being tabled today it will be public after our deliberations.

CHAIR - Yes, certainly a public document after this process. I cannot speak for other committee members but Mrs Walker raises a valid point, in my judgment at least, that she has been following the issue. Lots of other people have been as well. They have

been relying on accessing the web to continually update themselves as to what is going on and given that that is a two-year-old document, my position, at least, is that it is a reasonable proposition that, along with other information which was available on the web, that could have and probably should have been made available as well.

Mrs WALKER - I appreciate too the opportunity to represent my concerns because, as I said, there was no public feedback on our initial submissions. I said that I was disappointed that so much money has been expended on what might not be a long-term solution and that was, of course, because I was not able to refer to the 2007 report which gave different projections and I am merely going on the KETS report which gave a five-year life limit on the model that seemed closest to what is being proposed. However, one thing came to my attention last Friday. I asked for some information from the department that I did not have, and that was the figures for Channel Highway traffic. There were some figures collected earlier this year, I think in February or early March, on traffic volumes. I couldn't find them on the web either but an officer at the department gave me the figures. It seems to me that we're talking a lot about Kingston but we're not talking about the development south of Kingston. Margate itself, I would say, has been responsible for much of the growth in Kingborough in the last few years. I was really amazed at the increase in traffic on the Channel Highway south of Algonia. In those particular months, in the fortnight that the things were down, it was 12 500 traffic movements. I have no earlier figure to compare that with, apart from the existing average daily traffic volumes in the KETS report, which was probably taken in about 2004. I can only do it by taking 7 300 from 16 000 and that would have been in the order of about 9 000. In that time we can see a really substantial increase in traffic on the Channel Highway itself.

CHAIR - South of Algonia Road?

Mrs WALKER - Yes, in Margate and Snug.

Mr GREEN - The point being?

Mrs WALKER - The point being that we are talking about this being adequate. Did you model on figures south of Algonia? I don't even know if I am allowed to ask the question?

CHAIR - You can raise the issues and then the committee, if it is of a mind to pick up the issues that you raise, can raise those with the delegation.

Mrs WALKER - I was disappointed that it was not going to be a two-lane highway and wasn't going to be a bypass and people would still have to go around the roundabout on the way back home, but I guess my major concern was about the design of the Algonia roundabout. Some of my questions have already been put forward very kindly by your people about the pedestrian access. To me the road markings didn't make it clear that you weren't going to be able to go straight through a roundabout and go into one lane but you have already said that the road markings will be on the road.

CHAIR - Yes, we discussed that on site and that's been clarified so I think the committee is relaxed about that.

Mrs WALKER - I am also concerned about the cycle lanes. Is it right that the cyclists have to come up the Channel Highway, under or across the slip road and around and then up further to get back onto the bypass? It seems strange. I think it is effectively making a three-lane roundabout and I think that is potentially quite dangerous for cyclists because the cycle lane that is here is around the outside of the roundabout but in fact the people riding a bike through the roundabout are not going to want to stick to the outside, they are going to want to cross lanes of traffic. When the traffic is quite heavy I know it is sometimes quite difficult for cyclists to signal.

CHAIR - Mr Hall is the keen cyclist of the committee and he'll understand the dangers of that.

Mrs WALKER - It's very nice that cyclists will have a lane but it doesn't mean that they are necessarily going to be able to negotiate this very safely. I can't understand why the cycle lane couldn't extend along the slip road if that is where the cyclists are going to be. If they're going to be cycling up to town they're not going to want to cross the slip road.

Mr GREEN - I think they made the point that they're trying to discourage people from riding on that section.

Mrs WALKER - I thought I heard the DIER representative say - one of the points I make is the use of merging lanes - that the Channel Highway would now have precedence over Algona but I cannot see anything that would indicate that on the diagrams, whereas previously the old diagram that was put up for the consultation showed that the Channel Highway traffic would actually be merging into the traffic exiting the roundabout.

CHAIR - I am not clear. Which direction are you heading - coming from the south?

Mrs WALKER - I am coming from the south and I am coming along the slip road and there is traffic coming out of the roundabout. On the original diagram that was up for consultation it clearly showed that the Channel Highway traffic would be giving way to the Algona Road exit.

Mrs NAPIER - That is a bit like the slip road coming into the Southern Outlet. North-west coast traffic coming off a double lane go up a slip road and join four-lane traffic.

Mrs WALKER - But it is joining four lanes, not one.

Mr MANNERING - Basically we have the cycle lanes of 1.5 metres wide going around the roundabout. The reason you can see the green bit shown only in parts, around the roundabout and on part of the slip road, is that DIER has established - and I am not sure whether it is a formal policy - that they only really want to put the green markings down in points where there is potential for conflict between cyclists and cars. So rather than set a precedent of putting the green pavement marking everywhere we have cycle lanes. The existing cycle lanes on the Channel Highway between there and Summerleas Road, if we were to put them everywhere, we would have to go back and mark all of those in green. The cycle lanes are intended to be marked in green where there is potential for conflict with other vehicles to really alert drivers coming into the roundabout that there are cyclists there. There will also be some signage as well to alert the drivers to their presence.

The cycle lanes around the roundabout operate basically so that cyclists are no different to the cars in that they have to give way to traffic departing from the roundabout, so you give way to people on your right, but once they are in the roundabout and circulating you can see that the green traffic markings go across the front of all the approaches. So as vehicles pull up to give way to any other vehicle on the roundabout they are alerted to the fact that there are cyclists by seeing that green pavement marking in front of them at the hold line. That is really how that is intended to work. It is a treatment that is adopted by the RTA and by VicRoads. It is a fairly new thing for Tasmania. I think the Midland-Lyell Highway junction upgrade has a cycle lane part way around it and most of you probably would have seen recently the cycle lanes in Argyle Street and Campbell Street. This is really one of the first locations in Tasmania where cycle lanes are provided right around the roundabout, so it is certainly a new concept from that point of view.

With the slip road, I agree with June. When you are heading north from the existing Channel Highway and you are going through onto the bypass, you will diverge off into the slip road. You will then travel along, bypassing the roundabout. At the same time as you are doing that there is potential for vehicles coming from any of those other legs at the roundabout to come onto the bypass. As you depart the roundabout there are two lanes heading north and those lanes then drop from two back into one so the vehicles merge into a single lane. There is then a bit over 200 metres separation between where that merge point ends and the slip road connects back onto the bypass. At that point vehicles which are in the slip road on the Channel Highway would be required to merge with the vehicles that have departed the roundabout heading along the bypass.

Mrs NAPIER - How long do they have with extra space?

Mr MANNERING - In terms of the travel time between the two mergers?

Mrs NAPIER - When they get to the merging point, how much space is provided on the left-hand side for them to gradually keep driving along before they do swing into a gap?

Mr MANNERING - From the point where they get to the end of the island nose you are pretty close to the next traffic so you have all that distance to get yourself into a position where you can merge. There is probably 100-150 meters to find yourself an appropriate gap and then you have - which just disappears off this plan - the taper distance to perform that merging procedure.

Mr GREEN - It is standard, isn't it?

Mr MANNERING - Yes, it is all designed in accordance with Austroads guidelines which give us the distances that you need to merge and the speed that we expect it to operate at. The reason we have pushed the slip road down, which is why it is a little different to the original KETS modelling, is that we have pushed the slip road down as far away from the roundabout as we can to give vehicles coming out of the roundabout more opportunity to get up to the 80 kph speed that we expect vehicles coming north on the Channel Highway to be travelling at. We have basically run that merge down until you get to almost the Spring Farm Road bridge.

Mrs WALKER - In my submission I made the point that these people will have right of way over the Channel people; is that correct?

Mr MANNERING - That is right.

CHAIR - That will be as the road rules require. Sue has already explained what happens in other zip lanes, if I can put them that way. We have no option but to comply with what the law requires of us.

Mrs WALKER - I wondered if the bulk of the traffic was merging into there.

Mr GREEN - It does not make any difference because they can still effectively merge because they are the bulk of the traffic.

Mr LESTER - From a driver behaviour point of view it comes down to giving way to the left, versus right. If it is the other way around you would have drivers having to give way to vehicles coming from their left. That is counterintuitive and certainly not what is typically experienced elsewhere in the road network.

CHAIR - That is true.

Mrs WALKER - Except on the Southern Outlet.

Mr LESTER - So we have it like that, as opposed to the ones coming straight through. It is a very natural response for drivers and something we do in most instances - give way to your right. That is I think the basis of the Austroads guidelines.

Mr MANNERING - There are two options. You either have a typical merge procedure like you would see driving up the Midland Highway where an overtaking lane would end and you have to merge back across, or you have no pavement marking, in which case I think the road rules say that the vehicle in front has right of way, which brings in what Dion is talking about. So if you are driving your vehicle you have to give way to someone who could be potentially behind you. You are in your seat in your car and have the pillar on the left-hand side to try to see through to identify that vehicle that you need to give room to. The set-up that we have here is very much a typical situation. With the traffic volumes that are expected, the merge is expected to operate quite well.

Mrs WALKER - The next concern was that when you come back at night there is effectively only one lane available to you to go around and head off down the Channel Highway.

CHAIR - That is right.

Mrs WALKER - At the moment if you are coming around that roundabout you do not have to give way to traffic travelling north to Kingston but on this thing you will have to give way to traffic travelling north to Kingston on the Channel Highway. So if you are coming down here you will have to give way to traffic coming up.

CHAIR - That is right.

Mrs WALKER - I wondered about the potential to delay the traffic that is on the bypass. I do not know whether any studies have been done about what is proportion of the traffic heading this way actually goes to Kingston, how much would be going on the bypass and how much of it would be heading to Kingston.

CHAIR - As you have already explained, that is the nature of the roundabout. Currently traffic is shooting straight through there and going to Kingston, coming from the south, with no give way. You only have to give way if they are heading to Algona Road. But with this configuration, as has been explained - I will use the term 'pro tem' - it will cater safely for the traffic flows; that has been the modelling. We, as a committee, adopt the evidence-based approach for our considerations. That is what we have with a roundabout, given the five legs now introduced, rather than what we currently have with Algona Road.

Mrs WALKER - I suppose my question in my submission was: does that have the potential? You have potential queue links here and I suspect that is going to form a bigger queue length on the Kingston bypass approach than indicated because there will be traffic crossing in front of you whereas at the moment there isn't. I think somewhere in the KETS report there was a reference that you might just move the problem from Summerleas to Algona.

CHAIR - Yes, that was in those reports. The committee has been assured in the evidence provided to us today that the modelling indicates that this will overcome the traffic delays and the congestion currently experienced on the Channel Highway. We will consider the evidence provided to us by the delegation before we make a decision on the project.

Mrs WALKER - I could not find any statistics which broke up the traffic that was travelling north at 5 o'clock, and there is quite a substantial amount of it. How much of it is actually continuing on to the city and how much is going into Kingston, which might break the flow of traffic trying to head south? That is my concern, that I am coming home and, yes, now I can get through to Summerleas and I am not banked up to half-way up the Southern Outlet, but when I get to this point and there are people travelling to Kingston then I can't get through onto it.

CHAIR - Yes, and you have to give way to all of them as they are travelling to Kingston, back on the old Channel Highway.

Mr BROOKS - I actually have the values that you are requesting. For Algona roundabout in the pm situation I will start with the worst case, which is 2022. In your case, if you are travelling down the bypass in a peak hour there are approximately 1 570 cars travelling down the bypass towards that roundabout.

Mrs WALKER - From the south?

Mr BROOKS - No, on the bypass section coming towards the roundabout.

The number of vehicles that would come from Margate to potentially block that movement would be 317 vehicles coming in the opposite direction that they would have to give way to. That is over a one-hour period, so it is five a minute. That is for year 2022 in the plan. In 2012 it is 310.

CHAIR - So not much difference between 2012 and 2022.

Mr BROOKS - There is an increase in the left-turning traffic that is going up to the bypass, but very minimal in terms of the number coming through to Kingston as it is not the peak direction.

CHAIR - That is over the one-hour period?

Mr BROOKS - Yes.

CHAIR - How have you determined whether it is the peak direction or not? When people are travelling on the current Channel Highway you identify which go round the Summerleas roundabout and head into Kingston Shopping Centre, so that modelling takes account of all of that?

Mr BROOKS - Yes.

Mr GREEN - How many are coming off the highway?

Mr BROOKS - In 2012 it will 946, so around 950. Fifteen hundred was the other figure, going southward.

CHAIR - Bryan, are you clear with those numbers?

Mr GREEN - Yes.

Mrs NAPIER - So the main cars that will be stopping are the ones that are going south along the outlet and the ones coming up from Margate and going into Kingston won't have to stop so they'll be able to go straight through the roundabout, except for the right-hand-turning traffic through from Huntingfield et cetera?

CHAIR - That's right.

Mrs NAPIER - I am just trying to put some human reaction times into this, how long it takes you to start the car and get into the roundabout. It's going to be pretty tight, isn't it?

Mr BROOKS - The roundabout is quite large so there is a large sight distance.

Mrs NAPIER - Your modelling suggests that it will keep moving.

Mr BROOKS - Keep moving, yes. In the modelling you can specify reaction times for vehicles. You can slow the reaction time right down or speed it up. You can also specify a distance that they give each other between the vehicles, a headway distance.

Mrs NAPIER - I presume you would err on the conservative side?

Mr BROOKS - It is a standard value taken from RTA.

CHAIR - The reason we went down this path, that Bryan asked the question of Mathew, is the potential for queuing for the south-bound traffic on the new bypass at the roundabout. Are committee members satisfied with the answers that have been provided in terms of that queuing, given the numbers that Mathew has provided?

Mr GREEN - I am.

Mrs NAPIER - The only other alternative we have is to have the major intersection with a flyover. That is an extra \$5 million or something?

Mr BROOKS - Yes.

CHAIR - That's for a future time when the traffic volumes have expanded to such an extent.

Mrs NAPIER - I think it would be great if we could do that right now.

CHAIR - Mrs Walker, do you want to speak further to your submission?

Mrs WALKER - Now that I have those figures I am quite intrigued that the increase from 2012 to 2022 is only in the order of seven vehicles per hour coming up and heading into Kingston. We are told that this model will be adequate until 2022 when in actual fact we have almost reached that level.

CHAIR - We cannot have this two-way contribution. It is the committee that needs to be satisfied of the evidence being provided to us. If Mrs Walker raises other issues that the committee wants to take up, we can and we will, but we will not continue a two-way dialogue.

Mrs WALKER - What I am saying is that I was just given the figure of 317 vehicles in one hour travelling in a northerly direction and crossing the bypass at the roundabout, which was the equivalent of five per minute. In 2012 that figure was given as 310 vehicles in one hour, which is also equivalent to five per minute. I just find that quite interesting.

Mrs NAPIER - You think the growth would be greater?

Mrs WALKER - We have been told that there might be the need to look at the interchange in 2022 but we have already almost reached the 2022 figure in 2012.

Mr BROOKS - That is the p.m. peak volume. The a.m. peak volume has larger values coming north and lesser values coming south.

Mr GREEN - I think what we are after there is both p.m. figures. So what are the p.m. figures? We were talking about people coming up the highway merging and giving way, heading south.

Mrs NAPIER - It is no so much of a problem when people are heading up into town because you have the slip-road dealing with that so that is good. But when people are coming back home that is the question mark.

Mr BROOKS - This modelling, because it is an intersection, did not take into account the slip-lane because that is not part of the actual roundabout. So with this slip-lane, using the bypass, the figures could be greater. But for the amount of traffic that is going to be using the Channel Highway specifically, it is a very low increase. The increase is very small. This slip-lane could be increasing and I do not have those specific numbers, but this bypass section could be increasing significantly. We applied growth factors based on historic growth rates for all highways. We also did an origin destination survey which basically means we took a survey of vehicles and their licence plate number of where they were starting and where they were finishing within the Kingston network. So the distribution of traffic is quite accurate.

Mrs NAPIER - Is your argument that traffic is more spread at night, coming home? Does your data collection prove that it is more spread as they are coming home, as compared to the density of traffic that heads into town first thing in the morning?

Mr BROOKS - I would not say the word 'spread' but 'less'. Obviously I do not have the figures with me for the origin and destination survey but at that roundabout, from Margate to Kingston, it is substantially less in the p.m. than in the a.m. Obviously everyone is going to work in the a.m. In the p.m. they might be going shopping or something.

Mrs NAPIER - So they are dispersed more?

Mr BROOKS - Yes.

CHAIR - As I said earlier, the committee will assess this evidence and make our decision as to whether we are satisfied as to the workability of this process. Mrs Walker, can I ask you to continue, please?

Mrs WALKER - As I said, my main concern there was the potential for queuing of the home-bound traffic. I raised the question of pedestrian access and those questions have been asked by maybe not satisfactorily addressed.

CHAIR - Again, we will assess the evidence which has been provided to us in response to our questions.

Mrs WALKER - I think they were really my main concerns. I am fortunate in that I live in Howden and I do not have to go through any of this. I can choose to go the other way because I cannot get out at the end of Howden Road, that is my problem. I have already decided that if I am going to travel to the city, maybe I need to go around the roundabout; come from the south, into the roundabout and up the lane where I have right of way. That might be quicker.

CHAIR - There will be subjective matters which the committee cannot take into consideration.

Mrs WALKER - I realise that but I think that, given the build-up of traffic to the south of Algonia, maybe there is going to be a lot of pressure on that bypass and merging into the Algonia traffic which is supposed to increase from, I think, 9 000 vehicle movements per

day to about 12 000 because they are hoping a lot more people will go via Algona Road. I think that merge point might be a bit of a hold-up.

CHAIR - The committee is conscious of those compounding matters with Algona Road and the need for the bypass and that will be all part of the consideration which we will deliberate on.

Does that cover off on the matters that you wanted to speak to in support of your submission?

Mrs WALKER - I think that is all. I do see some positives. I think that those people who live in Redwood Road and the other side streets will quite obviously be able to get out of their properties.

CHAIR - They are very much givens, aren't they?

Mrs WALKER - Yes.

CHAIR - With that, we thank you all and we would ask you to gather up all your belongings and leave us to deliberate on the project or defer our deliberation, whichever the committee decides.

THE WITNESSES WITHDREW.