Cross examination of John Kiriakidis by Rupert Watters (for our client Manningham CC) – Thursday 2 August 2019

https://www.youtube.com/watch?v=u652f5zXtoo&feature=youtu.be

John Kiriakidis (JK) by Adrian Finanzio (AF) (00:18:03 – 2:10:04)

AF: Mr Kiriakidis, can I take you to GTA’s microsimulation model peer review that appears as appendix A and to page 7 of that. That microsimulation peer review was produced by your firm on the 8 October 2013 is that right?

JK: Yes that’s correct.

AF: And on page 7 you set out recommendation 1 & V1, we talked about it yesterday the process being iterative

JK: Yes

AF: No doubt you went through the process of review and you identified recommendations 1 and V1 of version 1 of that recommendation, right?

JK: Yes

AF: And that recommendation, does the panel have that? Bottom of page 7. That recommendation was ‘further investigation should be undertaken to understand the impacts, the restrictions in capacity’ – I think that should say the impacts of the restrictions in capacity – ‘at the western end of the network would have on the project. The operational effects of these restrictions should be replicated sufficiently in the prepared models.’ So first of all just pausing there – what you mean by that is your concern to make sure the microsimulation properly reflects the condition of Hoddle street?

JK: Yes that was the observation by the modelling team

AF: And you go on that the microsimulation… and when you say the modelling team can I just be clear about this? The reports are approved by you but prepared by a few others. Are you an expert in modelling?

JK: No I don’t profess to be an expert in microsimulation modelling but I’ve certainly interpreted outputs in models for many years.

AF: Right but in terms of the preparation of the model and the review of the model itself, it’s something someone else in your office has done?

JK: I’ve relied on specialists for that yes.

AF: The concern was to make sure that the model properly reflected what was going on at the western end, so at the Hoddle street end, correct? I’m happy to take you to the next bit that says ‘enquires with Schmed Tech regarding operational performance at the junction of the eastern freeway and Hoddle street indicates that the model is being reviewed to modify and replicate it…’

JK: Correct
AF: ‘Present day conditions and interactions at this network location, recommendation 1, has been updated as this work was still in progress at the time’

JK: Correct

AF: Okay so just focusing on recommendation 1 (R1) first, recommendation 1 was – lets look at the model to replicate sufficiently replicate what’s going on at Hoddle street now’ Correct?

JK: That’s right. Consider its certainly raised some concerns around that end of the model and its all further work to be done and enquiries that we made had indicated that further work at been done.

AF: And that resulted in your recommendation V2, which is explained.

JK: Correct

AF: And an appendix to that report is appendix C – does the panel easily have access to appendix C – which is a memo from Schmed Tech – do you have that?

JK: I do, I’ll bring it up on the screen.

AF: So there we have R1 which is your RV1 and the response to it given in September 2018, right?

JK: That is the response that was received at that date correct.

AF: Your modelling team made a recommendation in round 1 of the review that recommendation was in terms of V1, correct?

JK: Yep

AF: V1 is recorded in this memo from Schmed Tech and the response to that recommendation is set out there. And the response is ‘the scope of the models was discussed and agreed with VicRoads this included the decision not to include the Hoddle street interchange however we are investigating the impact of placing signals at the western end of the freeway’. So that’s what the peer review is talking about if we go back to the peer review at page 8.

JK: Yes agree.

AF: Enquiries with Schmed Tech regarding operational performance at the junction freeway and Hoddle Street indicates that the model is being reviewed and modified to replicate present day conditions and interaction at this network.

JK: Yes

AF: But what we’re really talking about here though is that you made, or you firm indicated, that it wants to see what the impact in current day terms would be at Hoddle Street, correct? That was RV1?

JK: We weren’t asking for that specifically but for replication, confidence that the model was replicating those conditions.

AF: And one way to do that would be to extend the scope of the microsimulation model to include what’s going on at Hoddle Street and Wellington Street?

JK: One of a number of ways

AF: And the answer that came back from Schmed Tech is that they’ve been told by VicRoads that the scope of the model should cut short at that point.

JK: That was part of the answer, the other answer as I interpret from that memorandum was investigation of applying a different means of creating the replication.
AF: Yeah so when you say applying a different means, applying a different means because the scope had already been limited by VicRoads?

JK: Well if you take what’s in the note, I’m not sure that you can extend the discussion to say the scope was cut short. It’s clearly a discussion that’s gone on with the RA for the road and a recommendation that they have made to the technical team. I don’t see it as a direction to cut the scope short – there was clearly some discussion that went on.

AF: Can I ask you whether, as the peer reviewer, you then or at any time since inquired of VicRoads as to why the scope of the microsimulation should be cut short?

JK: No, we didn’t have access to the agencies as part of the peer review and in this case, we didn’t specifically feel the need to. We’ve reviewed the model; we’ve exercised and expressed an opinion and described a preference.

AF: Well your first preference was as RV1 that further investigation should be undertaken to understand the impacts of restrictions in capacity at the western end of the network would have on the project. And one way to do that would be to extend the scope of the microsimulation to include what are existing conditions beyond where the microsimulation went at that time. Right?

JK: That is one of the ways yes

AF: And that way was not pursued because you were told that Schmed were told that VicRoads said that the scope of the microsimulation should fall short. Right?

JK: I think that’s part of the reason; the other reason it wasn’t pursued is the subsequent memo that was issued to the outstanding item V2 in this section of the report.

AF: I see, well I suggest to you that in truth the subsequent memo and the work that was done because the microsimulation didn’t extend to include all of those factors outside what the microsimulation had started out assessing.

JK: Well it was an outstanding and open item in our report, so it needed to be responded to and the response that was provided was the one that was subsequently addressed in the expert evidence through the memoranda.

AF: So you made, so go to your para 62 in your report.

JK: Sorry do you have a page number

AF: 62

JK: Okay I’m there

AF: Item C5 there is you addressing concerns that the microsimulation modelling doesn’t include the interchange at Hoddle Street – Eastern freeway, despite the proceeding section of the Eastern freeway having the lowest average vehicle speed of all the freeways in Melbourne. And you commenced there by saying ‘the GTA peer review raised a similar question and recommended the operational effects associated with the Hoddle Street and eastern junction to ensure those characteristics are appropriately considered on the operation of the broader corridor.’

JK: Yes.

AF: Now at A, you say that ‘the memorandum of information provided to GTA during the preparation of this evidence statement confirms that consideration was given prior to settling the technical report’. See that?

JK: Yes

AF: Your evidence says that it was done before the preparation of the EES technical report
JK: It does say that

AF: Can you go to the memo which is in the collection of memos at the back of your report with annexure D, it’s the 13th of June

JK: Yes, I see that

AF: Do you have that memo

JK: Yes

AF: Does the IAC have that memo? So that memo is dated the 13th June 2019, right?

JK: Yes

AF: And its headed ‘response to outstanding items in microsimulation modelling peer review’.

JK: It is.

AF: It was provided to you a month before your report was prepared, in this hearing.

JK: No not necessarily. The date of the memorandum doesn’t necessarily reflect the date that we received the memorandum.

AF: Okay well then let’s go back to page 62 – ‘the memorandum of information during the preparation of this evidence statement confirms’ – that (31:37) was given prior to settling the technical report

JK: Yes

AF: You got this memo while you were preparing your evidence

JK: Yes, yes definitely

AF: Now, did you receive this material before this memo was provided to you on the 13th June

JK: No

AF: So the first time you saw the response to your item V2 was on the 13th of June.

JK: No not necessarily, I can’t recall the date that we received the memorandum but…

AF: Well your item V2, which is ‘replicating as opposed to modelling actual, replicating the condition at Hoddle Street’ remain outstanding when the EES was published, correct?

JK: Yes

AF: So the EES went to publication without you being satisfied that the impacts at Hoddle Street had been properly addressed?

JK: Correct.

AF: Alright. Now just go to the memo – is it fair to say, well, do you know whether there is any other document which explains the impact at Hoddle Street that pre-dates this document? Do you know?

JK: The only document would be the TTIA, whatever explanation was in that technical document that was exhibition.

AF: Yeah but – let me put the question a different way – do you know of any other document that answers your RV2 that predates the note 13 June 2019
JK: No I'm not aware.

AF: Now I'm assuming you're familiar with the memo

JK: Yes

AF: The memo makes the point that queuing on the Eastern freeway is complex, doesn't it?

JK: Now this is the memo attached to the expert witness statement?

AF: Yeah, I'm asking my questions about that – its complex. I’ll take you to the second page of the memo. The viscum base model network (VBMN) was extended to include the Hoddle Street exit ramp and Alexander parade as far as Wellington Street, the generation of the que on the eastern freeway is complex and is not necessarily created by traffic signals at Hoddle Street or Wellington Street but it is due to the down stream congestion beyond these locations

JK: Yes

AF: The signals weren’t modelled where they?

JK: No not in the 36 cases no

AF: It’s true, taking the memo in its totality, that there are a lot of factors which are assumed to approximate what the real que length might be

JK: that’s fair

AF: the result is that in the 2036 no project case it shows free flow in the peak between 7.30 and 8.30

JK: It does, yes, on the Eastern freeway as its been reported, yes.

AF: And I suggest to you that its right isn’t it, peak hour traffic volumes will grow on their own by 2036 regardless of the project. That’s what the modelling tells us?

JK: That’s my recollection, the no project case has some level of growth that's anticipated yes.

AF: You could potentially fix some of the upstream volumes at Tram Road and so on by a metering, you could improve the functionality of the freeway upstream to create that free flow better, that’s true?

JK: This is further east on the corridor?

AF: Further east on the corridor to create a better flow in the future in 2036 in the no project scenario.

JK: There is some limited motorway management systems but yes, there is some ability to influence flow.

AF: But even if you did that the volumes would still increase by 2036?

JK: Modifications to metering I don’t think would have an enormous effect on the growth profile.

AF: That would produce the result wouldn’t it, in the 2036 no project scenario, that at the Hoddle street end there will be traffic congestion, wouldn’t it?

JK: There’s traffic congestion there now so it will still be there in the 36 no project case

AF: And its likely to get considerably worse on the 2036 no project?

JK: Well that’s perhaps where you and I might differ. My recollection is that the growth is quite modest there because the models appreciate that it’s a congested part of the network. If there is growth, growth will occur outside the peeks.
AF: Yeah, I see. Of course another scenario is that there is some kind of relieving works that occur further to the west.

JK: That's a possible scenario yes.

AF: Like an East-west link.

JK: Possibly.

AF: Have you had any conversations with anybody that suggest that the reason that VicRoads said that the scope of the model shouldn't go forward is because there might be some works like that in the future?

JK: No.

AF: Has anyone in the project team discussed the idea that an east-west link could be added on to the project at the end?

JK: No.

AF: So what we have is a scenario that VicRoads has said that the scope of the model should be limited back from the intersections at the Western end but with no explanation that you're aware of.

JK: I'm not aware of any explanation, so yes, you're right.

AF: And the residual investigation which you've be required to be done has had to be done on a theoretical basis to replicate what you think the existing conditions are, correct?

JK: Well no, I don't believe the investigation was performed on a theoretical basis. The investigation, as I read the memorandum, is a reflection and review of the existing condition. Mapping the ques, mapping the prospect or chance of those ques extending up to Chandler highway – having an influence on the project.

AF: Now as you read the memo that was provided to you on the 13th of June, about a month before you evidence in this case, correct?

JK: Yes that sounds about right.

AF: So they didn't do the work that you asked to be done in response to RV2 before the EES was published, correct?

JK: That's correct.

AF: You didn't check that they had when you signed off on the peer review, that the peer review was appropriate for publication having addressed the impacts that you identified as important, correct?

JK: I fully understood that it was an open issue and that further work was going to be completed.

AF: So not withstanding that it was your first recommendation, you were happy for the EES to be published without any understanding of what the impact would be at the Hoddle Street end, is that your evidence?

JK: My evidence is that I was content with the EES being published with the GTA operations report attached to it to give the community visibility that it was an outstanding item.

AF: I see. Is that an assessment of the impact? Being told that there is a possible issue…

JK: It's an identification of the risks.
AF: But it’s not an assessment of the Environmental impact is it

JK: Well…

AF: Not by any measure.

JK: Well I return it was an identification of the risks, it was an open issue.

AF: I know you return, but its not an assessment of the impact is it?

JK: Just thinking through this… the peer review is not an assessment of the impact, the TTIA is an assessment of the impact.

AF: Yes, I understand that but the EES is meant to be an assessment of the impact, correct?

JK: Correct.

AF: The TTIA being a component of the EES

JK: Correct

AF: And the TTIA went out without an assessment of the issue that you identified.

JK: that’s correct.

AF: The ques, if the microsimulation is wrong the ques could be long, couldn’t they? I mean that’s why you were concerned to ask the question in the first place, isn’t it?

JK: Well the question was asked to ensure, coming back to the principals that I explained in my oral evidence, whether potential interference could impact on the quality of the assessment.

AF: Okay potential interference here is the ques could be long

JK: The ques could certainly extend and affect the next node, being the Chandler highway, and the rest of the corridor.

AF: Just before this hearing started on the 22 July 2019, we were supplied with an excel s/s which I think is document 34D which showed updated west bound AM peak eastern freeway volumes – were you given a copy of that document?

JK: I don’t recollect it but that doesn’t mean we didn’t get it.

AF: You’re not the only one struggling with lots of information coming just before the hearing starts. If I told you that that document showed a further increase of a range between 1900 and 2200 vehicles in the AM peak west bound at Hoddle street that by itself would have some implications for que length?

JK: For which, is that the no project or with project?

AF: That’s the no project, 34D

JK: Sure, any increase is going to have an impact, I accept that

AF: Did you have the opportunity to check that

JK: That s/s I don’t know whether part of my office reviewed it, but I am aware that there is growth and that order of magnitude is consistent with my understanding and appreciation of the growth.

AF: Can you go to page 47 of your report. That’s where you deal with the results in relation to your RV2, YEAH?
JK: Yes

AF: so you got your response to the RV2 on 13th of June 2019 and you have recorded your response here to say, I take this to be a summary of what you were told in the memo on 13 June.

JK: Yes

AF: So you say there ‘a checked comparison of the 2017 and 2036 modelled outcomes indicates that average speeds on the Eastern freeway remain close to posted speed limits during peak periods immediately west of Chandler highway consistent with those reported in the EES.’ I Suggest to you in 2019 that’s not true in reality, I mean I’m driving up this freeway every morning to come to this hearing and I’m looking at the opposite side of the road and I suggest to you that that is just not the reality.

JK: My experience is that there is certainly a que and it extends back but by and large on repeatable occurrence it does not extend all the way back to the Chandler Highway.

AF: I see. Now if the ques go back to the Chandler highway the no project case might be better in terms of ques because existence of bottlenecks further up… is it further upstream, is that how you would describe it where the traffic is coming from – upstream

JK: Yeah upstream, direction of travel.

AF: Will help metre traffic and slow the rate of traffic that might arrive at the same time at Hoddle Street, correct?

JK: Intersections like Johnston street certainly...

AF: No I mean the other way, coming city bound in the AM peak. So...

JK: Well before Hoddle Street?

AF: Yeah

JK: Look yeah absolutely. A managed motorway and metering the level of access activity that can access the corridor certainly can influence downstream effects,

AF: It will increase the rate of flow into the system if there are metred accessing further upstream? Where its coming from?

JK: I understand the concept but what’s the question?

AF: If the project proceeds and the bottle necks are released because this is going to become a managed motor way in the future and all of the accesses east and west bound will become managed metered entries. Then the rate of flow will increase, and the rate of flow will increase, won't they?

JK: They will, in segments of the freeway.

AF: And the ques, I suggest to you, at the western end will become even greater than they are now without anything being done at the western end of the freeway.

JK: They will become greater but not because of metering effect earlier on in the corridor, not all trips are end to end trips on the eastern freeway. I think ultimately, I direct the IAC to have regard to the increase themselves. I cant recall whether the 2000-odd vehicle increase is a 2 hour peak increase or a single hour increase, but they’re the numbers that you should focus on and as a high level back of envelope divide that number by the number of lanes so that you can get the appreciation of what the increase would be on a per lane basis. Now there are multiple lanes at the western end of the eastern freeway so...

AF: But they all converge at the end don't they, they come to a dead end
JK: They do but in terms of que building it gets disaggregated against the number of lanes that do exist. So when I considered this issue and the team considered this issue, in terms of the growth of que, the overall increase when you break it down on a lane by lane basis is quite modest.

AF: Yep.

JK: So will there be a longer que? Yes. Do I expect that the que would be materially longer? No I don’t.

AF: Okay. Let’s go to the other end at Eastlink. The performance of the tunnels had been raised early in consultation hadn’t it?

JK: It had been raised in consultation yes.

AF: And its an important issue isn’t it?

JK: there are many important issues

AF: Yeah but it’s one of them

JK: Yes, it’s an important issue

AF: Doubt about their performance or the need to expand them has the consequence that that might need to be considered here if that’s the case, don’t you agree?

JK: It’s a consideration yes. It sits outside the project boundary but it’s a consideration yes.

AF: Yes it does sit outside the project boundary doesn’t it

JK: Yes

AF: But its still required to be assessed isn’t it

JK: and it has been

AF: And I’m not saying for a moment that it hasn’t, we’re going to come to the assessment in just a minute – can I ask you to go to page 90 of your evidence. At page 90 you deal with, you come to the conclusion ‘on performance of the tunnels the GTA modelling team reviewed the operations model and confirmed satisfactory performance within the tunnels’ can I ask you to go to appendix D of you evidence – the email of 11 July –

JK: Is there a number with that date to be specific

AF: Sorry the second last one, its headed east link tunnel performance.

IAC: PDF page 294.

AF: You see there that email is dated 11 July 2019 and it reads at the beginning ‘GTA has requested an assessment of the predicted performance of the East link tunnels, this memo provides additional analysis of that provided within the NEL traffic and transport impact assessment (NEL TTIA)’. Let me just ask you a couple of questions about that. You read what was in the NEL TTIA and concluded that you still needed further information, correct?

JK: Yes

AF: You requested that information from them – but when did you make the request?

JK: Well it was an open item in the report, so the project team was aware of that being as being an open item and was left then with the project team to determine when they review it and when they provide us with a response.
AF: And they provided you, I’m taking it that the email dated 11 July like the one dated 19 June is when they provided that response to you?

JK: I don’t know whether it was specifically on that date, it was either on that date or shortly thereafter.

AF: Right, so there’s no chance it was before?

JK: Well it would be odd if it was before.

AF: And it’s right, isn’t it, that you finalised your witness statement on the 15th of July. Well your witness statement was filed on the 15th July.

JK: Yes, no that sounds about right

AF: Did you provide your witness statement for review by the lawyers in the case before hand.

JK: There was a version before the final yes

AF: Did the version before the final contain this email memo?

JK: I can’t recall but it’s possible it didn’t

AF: Right, and so you may have had about a day to review this email and be satisfied that the information that you’d asked for in your peer review in the preparation of your evidence, is that right?

JK: Yes, the memoranda were provided through the course of us preparing the witness statement so as soon as we had access to it, I provided it to our modelling team for review and comment. So yes, it was not long before finalisation of the report.

AF: You say that at page 90 of your report that you looked at the operations model and it shows satisfactory performance within the tunnels. I’d like you to go to Technical report A at page 51

JK: The TTIA?

AF: Yes

IAC: Just to be clear is that the main report or his attachment?

AF: Main report, the actual assessment. PDF page 59. This is what was published in the EES as the assessment right? There is a list of four dot points and at the bottom it says there that ‘the future demand matrices are subject to a capacity constraining processes using the software package VISUM. This process nominated two ‘pinch points’ on the road network – the East link and NEL tunnels – and shifts any origin-destination pairs which are found to exceed their theoretical capacity limits to outside peak periods. Capacity limits for these two locations are based on VicRoads guidance (Motor ways design volume guide, Dec 2017)’ The effect of that passage in real terms is that it assumes that drivers simply don’t arrive at the tunnels to contribute to congestion.

JK: I understand it to be a part of the capacity constraining process, so yes

AF: So do you agree with me?

JK: Yes demand is being shifted to the shoulders

AF: They might take a presumably different route

JK: A different route is one option, re-timing…

AF: Or time their travel to arrive at the tunnel at a different time

JK: That’s the approach that’s being taken, but yes, you’re right.
AF: Do you recall, you were here when Dr Williamson was giving his evidence, do you recall him saying that one of the things that these modelling exercises do is they assume a state of perfect knowledge in the mind of the driver that doesn't exist in reality.

JK: Yes

AF: The assumption upon which that premise is based doesn’t reflect reality does it.

JK: Well it’s trying to replicate reality based on experience and, as I understand it, it is making attempt to deal with the nuances of the partially constrained strategic model.

AF: Yeah it has the effect though doesn’t it that it’s supressing demand that would, in reality, arrive at the tunnels?

JK: No the approach that’s adopted, which I understand to be an industry wide approach, is replicating what is believed to be the reality that limitation on capacity on that part of the network will influence driver behaviour.

AF: But driver behaviour might be simply to join the end of the que if you didn’t know that there was an alternative route, if you didn’t know that it would be faster, if your decision is based on for example the last time you took the route.

JK: Correct, there are judgments made and experiences that influence future behaviour yes.

AF: If you run performance assessments in a microstimulator based on a suppressed demand, I suggest to you that the outcome is distorted?

JK: You’re certainly manipulating demand for reasons that I think have already been explained to the IAC. Our project team has reviewed the methodology and there is no guide on this capacity constraining approach. The approach that’s been adapted here, our firm is satisfied, is consistent with the approach that our firm would of took.

AF: But one of the things though that we could always do is sort of test things by reality. By judging things against reality, correct? Judging what the results of a model might produce by reality? Okay… (***not sure if answer was given? Could not here anything – 1:00:52)

AF: Before we come to that, if in fact drivers didn’t diverge – I think you’ve answered that – the only observed data that we have within the tunnel is tunnel speeds is that right?

JK: I think that’s the metric that’s been relied upon to assess the performance of the tunnel – but no we have other metrics including through put, lane through puts.

AF: But we don’t have volumes in the tunnel, do we?

JK: There are volumes in the model, there are volumes in the tunnel in the model.

AF: Yes but my question was based on observed data, we don’t have current volumes in the tunnel, do we?

JK: Yes, the project team considered existing demands in the tunnels as part of this capacity constraining process that they applied.

AF: Do you have data of the existing condition that records volumes in the tunnel? I understood that they were commercially confidential.

JK: We had access to the model which relied on data inputs. So yes in having access to the model we in theory had access to the data.
AF: So did Schmed Tech actually get access to the volumes in the tunnel that are said to have been commercially confidential?

JK: Well the model that we have access to...

AF: I'm not talking about the model I'm talking about the existing day volumes.

JK: Well they must have.

AF: Do you not know

JK: I can't say for sure, but if data is within the model there must have been some form of survey or access to that demand

AF: But you're not sure?

JK: No we didn't specifically ask for that, we were provided with a version of the model which had demand included in the model.

AF: We can expect, can't we, significant increases in volumes along this stretch of road with or without this project, can't we? Just between 2017 and 2036.

JK: I'd need to revert to... can I have the luxury of reminding myself...

AF: Yes well let's do it together, if we go to appendix D, PDF number 956-957 of the TTIA. At Springvale road on the Eastern freeway, west of the eastern freeway – west of Springvale road – its page D35 and D36. On the bottom of page D35 – the Springvale road/Blackburn road 2017 – that's east bound...you've got East bound, 2017, 63 – 73 thousand. In 2036, no project, you've got 72 – 84 thousand and then on the westbound side you've got 63-74 thousand going to 73 – 85 thousand.

JK: So similar increases in either direction, so daily volumes.

AF: Yes so, the point that I'm making is that you've got significant volumes in tunnels from 2017-2036 with or without the project.

JK: Well you do but the uplift is outside of the, notably outside of, the peaks.

AF: And at Springvale Road what we have to rely on... and with the project, I just want to confirm, again in that table you've got increases that are in the order of 30-36 thousand vehicles east bound and 26-30 thousand vehicles west bound. Yeah?

JK: This is west of Springvale road

AF: Yes

JK: That's right

AF: And there in the TTIA the numbers that we've got to rely upon... we have to rely upon these numbers because the TTIA doesn't give us numbers in the tunnel.

JK: You can develop estimates of numbers in the tunnel from other pictorial representations in the EES.

AF: You can develop estimates of the tunnel?

JK: You can, you can make a broader judgment of what those demands are – not from these tables though.

AF: And the TTIA, can I ask you to go to appendix E the microsimulation results, tell us that – which is on PDF 999 – 2036 AM peak Melbourne tunnel to Springvale road west bound – these are the results of the microsimulation right?
JK: These are.

AF: This is if you like, when you said a minute ago, you can deduce the figures in the tunnel from other stuff that's here. This is what you're talking about, this is the end result of that?

JK: No this is not what I'm referring to.

AF: Right, well in any event what this does give you is the model results in the tunnel. Have you got that figure that I'm referring to?

JK: That's the summary …

AF: So in the first hour it gives you, with the project, 4,510 vehicles arrive and with no project 4,470 see that?

JK: Yes.

AF: And in the second hour, these are hourly volumes, 4,520 and 4,440 – got that?

JK: Yes.

AF: Now we obtained some data from the VicRoads website of present AM peak west bound volumes in the tunnel at an hourly rate of 4,500 as at 2019. Is it reasonable to expect that comparing todays rates and volumes through the tunnel, that they are comparable to what the microsimulation is telling us will be in the tunnel in 2036 with or without the project?

JK: The volumes that you made mentioned to as recent volumes, I've made enquiries to the project team about some of the data and the number you describe is consistent with my expectation i.e.

AF: Of current volumes?

JK: Of current volumes.

AF: So current volumes in the tunnel are 4,500/ hour and the microsimulation volumes with and without the project are 4,500 in the future.

JK: Thereabouts my understanding is there is a differential that's being assumed between the existing condition noting that when the surveys and this information was compiled it was back in 2017 – so there is probably a little bit of background growth that's occurred- but for the most part – demand in the tunnels will largely stay they same and if not increase by a small margin. That is my understanding and I was here for Mr Veech's evidence and the same question was put to him and he explained to the IAC that in peak hours the uplift is quite modest.

AF: Yeah, the uplift is quite modest, I suggest to you, because its already operating at capacity in the peak. It can't get any bigger not withstanding that the volumes in the future will grow significantly either side.

JK: It's certainly operating within the range, or starting to achieve the, capacities that are considered desirable capacities. The domains are consistent, I accept that, with the capacity that theoretically the tunnels have.

AF: And the posted speed in the tunnel isn't 100km/hour is it?

JK: No its 80.

AF: Can I ask you some questions about truck traffic in the tunnel. The design capacity of any road is a calculatable thing isn't it?

JK: It can be estimated yes
AF: And there is no figure for the design capacity for the Melbourne tunnels in the EES is there.
JK: No I don’t believe so.
AF: It’s a function of road width, that is the design capacity, speed and sometimes gradient, correct?
JK: They would be the three mains; Number of lanes, gradient, yes.
AF: One of the purposes of this project is to carry more trucks – correct?
JK: It is
AF: No debate about that?
JK: No I can’t debate that.
AF: There is no assessment of what might happen with increased truck traffic in the tunnel is there.
JK: To the extent that growth has been estimated, it’s my understanding, that allowances have been made for growth in truck traffic but relative to the relationship that already exists in that part of the network.
AF: But growth in truck traffic has an implication in terms of road capacity doesn’t it?
JK: In the tunnels in particular yes
AF: And that’s because the rate of flow of a three-lane tunnel section with gradients of 4-5% drops the more trucks that you put on the road, correct?
JK: It does
AF: That’s what the motor way design says
JK: It does all of that, but I think to help the IAC, the note that needs to be made is that there is no major amplification or distortion of the proportion of trucks that would be going through the tunnels. When you actually look at the figures within the EES you’ll observe that there are a range of links that connect with the project that forecast material change in truck volume, and tunnels is not one of those.
AF: So is it right that notwithstanding that the stated purpose of the project is to improve freight connections from the NW to the SE that the models don’t predict significant increase in truck utilisation of the tunnels.
JK: It does, but not necessarily or specifically in the peaks.
AF: I see.
JK: So the relatively, there is uplift but its largely consistent in relative terms with the existing condition. So there will be more trucks through the tunnel.
AF: And the trucks, through the tunnel in the peaks will again have an impact on its capacity in the peak won’t it?
JK: And the modelling has regard for that
AF: Mr Watters asked you some questions yesterday about the collector-distributor (C-D) thing and I just want to come back to that subject very briefly. I think you said yesterday that one of the things that the C-D do is prevent weaving through lanes…
JK: Minimises weaving
AF: … Minimises weaving through lanes, and that one of the reasons that you think it’s an important thing here is because of the spacing between exits on the freeway in the area of interest

JK: Yes that’s a contributing factor.

AF: Normally you have a 15 hundred metre spacing and in some in instanced you’ve got 700 metres

JK: Interchange spaces as a rule of thumb should be 3km apart and certainly not spacings that are well short of that.

AF: Ideally but not necessarily the case in an inner urban environment.

JK: No but that’s, in my view, what’s contributing to the need to apply this type of design technique.

AF: I understand but I’ll just go back a step. One of the reasons, on of the things associated with one of the results or consequences of having such close intersections is that those intersections, and I think the modelling and the data shows, is that there are a lot of short trips that people are using the freeway for short connections through – so hoping on at one interchange and being on the freeway for only a short distance and coming off – correct?

JK: Part of the Eastern freeway…yes that is the case, so that was noted in the EES that there are some short trips, getting on at one interchange and getting off at the next. Which is not usually desirable…

AF: And that can be dealt with, can’t it, with an auxiliary lane – that’s a technique that can be deployed in a situation like this can’t it?

JK: When you use the language auxiliary lane can you expand on that? What do you mean by that?

AF: have you seen the design that Mr O’Brien advanced in his…

JK: I did a page turn; I can’t specifically recall …

AF: What I mean is, a lane dedicated to servicing that short trip manoeuvre without interference with people coming from a longer distance on the freeway and exiting at those points.

JK: yeah and that approach as I understand it has been adopted on part of this project.,

AF: And that can avoid the intersection between monoverse slowing up the far-left lane and people coming off the freeway from longer distances? Correct?

JK: It minimises the interference with people getting on and off over the short distances yes.

AF: and in terms of the weaving itself, at some point a decision is required by a driver who wants to exit or go down a particular path, correct?

JK: Correct

AF: And at point where the C-D divisions emerge that’s a point of decisions isn’t it

JK: It is

AF: That itself can cause significant weaving can’t it

JK: It can certainly cause weaving but in a more controllable location outside of where that weaving could potentially interfere with interchanges themselves - mid-block locations.

AF: There is no data in the Victorian Motorway Design Volume Guide (VMDVG) that suggest that the introduction of C-D eliminates or minimises weaving in that way is there?
JK: The way I interpret the VMDVG and as was put to me by Mr Watters is it's an extrapolation of particular circumstances to determine or establish a particular outcome.

AF: Yeah so to put simple language around that – the passage that you referred to and the table that you refer to does not explicitly refer to C-D at all does it? It does not explicitly use the word C-D in the section where the table that you rely upon is found.

JK: I'd have to go back and have a look.

AF: Well let me tell you this, last night we got a copy of this document and we did a search for the words C-D or collector and it appears only once in the document. The VMDVG, are you able to pull that up on the internet there Mr Kiriakidis?

JK: So this was the extract that I relied upon, section 2.32

AF: Yeah, I wonder if you could just get to your slide for a second, slide 23. So I just want to be clear about a couple of things – at the bottom of that page there you've got source: VicRoads Motorway Design Volumes for increased traffic. That's the graph that comes from this document.

JK: Yes

AF: The two images on the side there don't come from this document at all, that's their examples of what comes out of the EES.

JK: Correct

AF: There are no diagrams within this document, within the VMDVG, that describe or depict C-D lanes.

JK: Not that I specifically recall no

AF: And over the page on 24, on your next slide, you say the source of information if the VMDVG but the two graphs that are there are graphs of your devising, they're not in... I just want to be clear I don't want there to be any confusion.

JK: The same question was put to me yesterday and I explained that they'd been developed by GTA

AF: Sorry. Can you go to the section 1.8 of that document that you've got there... third paragraph? any motor way with an expected peak hour traffic flow quality beyond LOSC should be planned to design to operate as a managed facility, that is a managed motor way – that is your understanding of it?

JK: Yes, its transferrable.

AF: Since it is necessary to control traffic in the areas where the probability of flow break down is starting to significantly increase. Right? So the point of this document in 2017 was to record VicRoads view that managed motor ways in the future on freeways is the way to go. Correct?

JK: I think that's a reasonable inference. More broadly I read it as developing some jurisdictional guidelines.

AF: Yeah, guidelines about what we should do when designing freeways and how we should use technology to improve safety and performance, correct?

JK: Correct

AF: And the idea there is that the managed motorway is the way to do it, correct?

JK: Well its and element of the design that's clearly encouraged once you achieve or reach a threshold.

AF: And the key features of that are things like ramp metering and real time signage, correct?
JK: and overhead lane warnings

AF: Correct

JK: All of those elements are described in the EES I think there is a specific section on those technologies.

AF: And if you just go over the page to the table, so just stop there – LOS density bands and factors influencing traffic flow – see that?

JK: Yes.

AF: Table 1 shows the level of service density bands for Urban and Rural conditions including US highway capacities. You’ve usefully put that in there without the miles/hour, you’ve given us the metric version. And then the next table indicates quasi-static conditions – table 2 – and table 3: the wide range of dynamic factors that influence traffic flow and maximum sustainable flow rates.

JK: Yep

AF: And you see there, there is a whole list of things, but in the (1:28:09) at the end: other physical attributes – merge - diverge tapers, acceleration-deceleration lengths, auxiliary lanes, grading, C-D lanes. I suggest to you that is the only place in the whole document where the word C-D lane is used.

JK: I’m not entirely sure of the consequence if that is the case.

AF: Well I suggest to you that far from it being the case, that it’s now the position that we use C-D roads to achieve a safety outcome per force but in fact it’s just one tool that we consider as we consider other tools as well. Correct?

JK: I agree with you entirely; I don’t disagree on that. I think one point that I should make on this is the C-D approach is being incorporated in the modelling.

AF: In what?

JK: In the modelling, in the operations model. My understanding is tests were undertaken for an unconstrained network – one similar to the one that Mr O’Brien describes. The level of weaving was contributing to material detriment of the operation of the assets. Not as though the project team didn’t consider a version, an unconstrained version consistent with Mr O’Brien, but it did. It failed.

AF: Where is the modelling?

JK: Well its not in the EES it was part of the options development, I mean with the interchanges themselves in some cases I understand there were 40 or 50 options.

AF: I see. Let’s come to LOSD: Lane capacity.

IAC: Can I just ask we look for a break Mr Finanzio

AF: Now is a good time.

AF: On your slide 20 and 21 you address the question of LOSD with some useful graphical depictions – can you pull them up please. Now LOSD is concerned with effectively lane capacity, that’s right isn’t it?

JK: Capacity is one of the elements, its more than just lane capacity.

AF: Well what are the other things?
JK: Well its really speed. A combination of ... I spoke to the IAC around the concept of productivity – the two slides that I’ve created: the first certainly addressed the issue of capacity as it be raised by Mr O’Brien which was this particular figure here but as an extension of that I spoke to the concept of productivity. It’s more than just the physical through-put, the additional aspect being the speed or velocity of vehicles in that lane.

AF: To be clear, I’m talking about the notion of LOSD as a design tool to achieve a capacity in lanes as an area of traffic engineering. LOS is calculated, isn’t it, by vehicle headway.

JK: it’s a function of density. So yes, the separation between vehicles – that’s the classic LOS, the slide that I’ve got up here – the old HCM manual.

AF: So vehicle headway is time.

JK: Space.

AF: And space at speed

JK: Yes.

AF: The old velocity equals distance over time, produces a head way, in this context, of about 2 seconds – that’s what we’re all told when getting our drivers licence, have a 2 second separation behind the car in front of you – that 2 second separation is the headway - correct?

JK: Yes that gap, you can measure in time and you can convert the distance.

AF: You can convert to distance just by transposing that formula velocity = distance over time.

JK: Yes.

AF: And when we’re talking about LOSD in the context of freeways at speeds of 100km/h that LOS produces somewhere, you say, approximately 2000 vehicles per lane per hour. If we were confining ourselves to a 2 second headway it would be about 1800 wouldn’t it?

JK: The graphical representation here you can extract that, so – across the bottom is the flow and depending on which speed curve you adopt, you can extract from that the through put of each lane.

AF: So what were really talking about as the measure of LOSD is that the idea that vehicles will be travelling in a lane in this context, and I want to be clear that I’m talking about this context, at 100km/h with a 2 second headway between it and the vehicle in front of it.

JK: I can’t recall the precise headway but the concept I agree with

AF: Okay, I’m told that the notion of this headway is a basic well-known traffic engineering thing

JK: Well the concept is

AF: That a 2 second headway is the reason we’re all told when we’re getting out licence that we should count to 2 to make sure that we have a safe enough distance.

JK: Well it’s clearly a generalised requirement because speeds on the network and as you drive vary but yes that gives you enough stopping distance to break safely.

AF: But we’re talking about a design tool and a design criterion which is what LOSD is in this case. We’re talking about designing to achieve vehicles travelling at 100km/h with a 2 second headway in front of them. Correct?

JK: I accept that

AF: Your slide explains that the RD has been designed to achieve a minimum density based and delay-based LOS-D. What it doesn’t say here that it says elsewhere in the documents I can see is that it’s
designed to do that in the peak. So in the peak we are designing to achieve the result that we just described, right? Vehicles travelling at 100km/h with a 2 second headway, effectively free flow condition, in the peak.

JK: I'm assuming you're using the words ‘free flow condition’ very loosely because that's not free flow conditions.

AF: Okay

JK: Because free flow would be a LOS-A

AF: Okay I'll be more precise. We are designing to achieve a LOS that would have vehicles travelling along the freeway at 100km/h with a 2 second headway at least in the peak. Is that correct?

JK: That's correct.

AF: Now that, I suggest to you, is inconsistent with the experience of most freeways everywhere.

JK: What do you mean

AF: The actually experience on most freeways is that LOS-D along the length of the freeway in the peak is almost never achieved.

JK: Well we are design for a point in time aren’t we. For a particular planning horizon, demand changes over time – you accept that – we spoke about growth earlier on. So it's foreseeable that within the 10-year planning horizon we potentially have higher and better levels of service until the demand that's being forecast is actually realised. After the planning horizon, the 10 years that this project is being designed for there is a reasonable prospect, depending on technologies, that LOS would deteriorate even further. So we design for certain points in time so criticisms around assets and facilities operating at a particular LOS need to be mindful of that.

AF: I totally accept that but the tricky part here is that we're designing for a LOS-D at a point in time 10 years from now, or more than 20 years – 2036, which would create a scenario...

JK: Well not really, project delivery is 6-7 years so its 10 years from point of delivery from the project.

AF: Right, we're talking about 2036 aren’t we.

JK: We are.

AF: we're designing for a LOS-D in 2036 of that level of capacity – 100km/h with a 2 second headway. Is its right Mr Kiriakidis that designing according to that parameter is a very strong contributor to the width of the freeway in the RD?

JK: It has to be a strong contributor, you're designing for a particular forecast in demand and you're seeking to achieve a particular level of service, so it has to be a contributing factor.

AF: So if we were designing for a LOS, say 'E', in this corridor as the design criteria for the peak we might have less lanes – is that correct?

JK: I expect that there is a reasonable prospect that you would have less lanes, but an increased prospect of flow breakdown on a regular basis.

AF: Well really what we’re anticipating is that there would be flow break down at some point in the future after 2036, aren’t we?

JK: The probability of that would increase as demand increases yes.

AF: Right so what were doing is bringing the probability of flow break down, which is inevitable on the road, forward.
JK: Well you say inevitable; it would be a question for the strategic modellers around what the impact would be post 2036. Are they expecting it to rise at the same rate as they’ve predicted as part of this project or are there changes that they’ve foreshadowed that might limit or suppress that demand? So it’s difficult for me to comment on what that growth might be afterwards.

AF: And what we know right now is that on either end of the freeway we’ve got capacity constraining features. So let’s start with the East Link tunnel (ELT); ELT has an 80km speed limit correct?

JK: It does

AF: So we’re designing for LOS-D at 100km/h into the ELT which will reduce the speed to 80km/h

JK: They do parts of the network at 80 including the new tunnels that are proposed.

AF: And at the other end at Hoddle Street we’ve effectively got the dead end of the freeway

JK: The conditions that you’re focusing on are condition all around the project.

AF: Correct

JK: All parts of the network control and metre the demand that access the project, they are contributing factors that the modelling has accounted for.

AF: Yes. The modelling of course hasn’t accounted for the physical impacts of the project outside – in terms of the ecological, environmental and other impacts has it.

JK: Well the transport model is not capable of that.

AF: Correct.

AF: Can I ask you where in the VicRoads design manual it says that a freeway of this size, or any freeway, is to be designed for peak conditions in any LOS. The design manual doesn’t say that you have to design for a LOS-D in peak conditions

JK: Well it doesn’t say that but its inferred by the fact that the whole standard related to throughput on an hourly basis, maximum flow rates per hour. So where would you apply that test? You would naturally apply that test at the peak hour. Why design for the interpeak, it wouldn’t make sense to me.

AF: But what you’re designing for is posted speeds on a freeway in the peak where we know there is congestion, and we know there will continue to be congestion.

JK: Well there is congestion now, this project addresses some of this existing congestion and beyond that it looks to manage the increases in demand that the modelling has forecast would be attracted to the project. It’s a responsible planning approach.

AF: when you say it’s a standard industry practice, are you familiar with what the planning basis for freeways in Canberra are?

JK: I’m not familiar with the planning basis in Canberra are no.

AF: Okay

JK: I’ve working in the Victorian jurisdiction for nearly 25 years and I’ve produced a lot of TTIAs, both for infrastructure and land use, it is extraordinarily common, it is standard practice that we would
evaluate – there’s projects I’ve worked on with you – where we have evaluated the peak hour and we’ve determined...

AF: We’re not talking about intersections we’re talking about freeways. I understand that at intersections you would design for at LOS-D, I’m asking you about freeways.

JK: Okay so there is no dispute about the interchange design its just the freeway segments

AF: I’m asking you about the freeway segments and what’s driving the freeway profile

JK: Demand is one and the targeted LOS is the other, we’ve had that chat.

AF: I want to ask you some questions now about some things you and I might agree about. In Mr O’Brien’s evidence he raises concern about the Greensborough bypass - M80 and Diamond creek road intersection – which in the future scenario is likely to come under pressure. I’ve taken that you agree that it’s likely that it will.

JK: It will come under pressure there’s no…

AF: As a result of the project

JK: The project will exacerbate the pressure

AF: And you regard Mr O’Brien’s observations about that as fair

JK: I can’t recall specifically his observations but the issues being addressed and raised in my witness statement…

AF: And in the conclave

JK: Correct

AF: You’re not disputing the extent of the impact

JK: I’ll answer that question by saying that my appreciation is that that node, the civic drive node, will need to undergo some form of upgrade as well as an extension of that part of Diamond Creek Road to the north and potentially other approaches to that intersection to manage the demand.

AF: beyond that intersection the flow back effects haven’t been considered in the EES have they?


AF: And they will be causally related to the project, correct?

JK: Well where the project increases demand over the no project – yes – there will be a knock-on effect.

AF: Yesterday in your slide presentation you raised the discussion at the conclave around the modelling at different intersections. I think at page 17 of you slide show. In slide 37 you produced a table that contained your comparisons

JK: The graphical representation in comparison to the tables extracted from Mr O’Brien’s report?

AF: Correct.

JK: Yep

AF: And I asked you – well first of all – there are two roads of interest in Mr O’Brien’s report, one is Surry road and one is Springvale Road.

JK: Yes
AF: And I asked you in the very beginning of the cross examination whether you could produce for me your workings that produced that table.

JK: Yes, well no – the graphs – I didn’t produce the tables.

AF: Correct, and I asked you to produce the workings and immediately after the hearing yesterday you approached me for me to provide you with an email address.

JK: Correct.

AF: At about 3:45pm and you were given an email address at that time is that correct?

JK: Correct.

AF: Did anybody from the authority’s team approach you after that?

JK: No.

AF: Why didn’t you provide the email straight away?

JK: I approached the team and asked and advised that I was okay to issue the email and they requested that I issued the email to them and they would issue the email to you.

AF: And when did you issue the email to them?

JK: I understood that I issued the email to them before I left the premises, and was reliant on the Wi-Fi that’s available through the system but for some reason, I don’t understand why, the email didn’t arrive – I was subsequently contacted later in the day and re-issued the email from home.

AF: What you provided yesterday afternoon was a table with some more graphs on it.

JK: The same graphs.

AF: The same graphs, but in a table. Can you explain to me…?

IAC: Do we have a copy of this?

AF: I’ve asked for these to be handed around.

IAC: This will be document 141.

AF: So you sent an email yesterday shortly after the hearing.

JK: Yes and then I arrived home and re-issued the email.

AF: So you’ll have the two emails, one that didn’t go and one that went.

JK: Yes, I should.

AF: I want to see those please. You understand yesterday that I was asking you about your workings to do the comparison?

JK: Yes.

AF: Mr O’Brien in his report did a CIDRU analysis (1:50:39) based on the data that he provided.

JK: Correct.

AF: did you do a CIDRU analysis?
JK: No I didn’t

AF: So the only workings that we have from you are represented in this table, this is the only work that you did to compare what Mr O’Brien did.

JK: No I explained, when I provided an explanation of the slide I explained it was a comparison of the input demands that Mr O’Brien has relied upon and I explained that it was my view that the numbers he’d relied upon were an inflation, or overestimate of the demand, and as a consequence the inputs that he had then relied upon for his **CIDRU analysis** were erroneous.

AF: And so this table sets out all of the input data that you’ve…

JK: This table sets out a comparison of the inputs as I interpret them, and Mr O’Brien relied upon to inform his CIDRUS – they can be observed in the yellow shaded cells. Beside that in the blue shaded cells are the volumes that my team extracted from the EES and there has essentially been a comparison of flows on Springvale road in particular. You’ve got the top table being Springvale road the bottom table being Surry road and there is a comparison of demand flows for the peak hours - and in this case for the PM – comparing the EES estimates and Mr O’Brien’s estimates, and Mr O’Brien’s estimates are substantially higher than the EES.

AF: So what you’ve really done, what was really in your table… Mr O’Brien’s analysis was to look at the EES estimates and query them and all you’ve really done is compare the EES estimates with his estimates. Is that right?

JK: No, I didn’t understand his exercise as one of querying the EES volumes, I understood his exercise as an attempt to demonstrate that increases in demand on Springvale and Surry Road would result in the catastrophic failure of those two particular nodes and would interfere with volumes accessing the project. His inference, as I understood it, was the demand flows that have been modelled on the project cannot be reached because the nodes adjacent to the project are not capable of dealing with that through put.

AF: Do you agree that if his volumes are correct then the outcomes of his CIDRU analysis have produced are also probably right.

JK: If his volumes are correct, the next question for me would be to review the CIDRU and satisfy myself that they have been compiled in a way that I would be comfortable with.

AF: But you haven’t done that

JK: No I haven’t sought to. I was merely making the observation that I think the volumes he has relied upon were excessive.

AF: and in doing that you’ve relied upon the estimated volumes in the EES

JK: I have.

IAC: Just before we leave the graphs – can you just run through the titles of that? I’ve got a Surry Road PM peak and I’m not sure if that should be a Springvale road.

JK: The top table refers to Springvale road and if you read the first column these are both PM peaks. Southbound…

IAC: This is the graphs…

AF: I think they’re spread; I think they’re spread in the wrong way – so there are three that go to Springvale and there are 3 that go to Surry, but the third Surry one sits under the Springvale group – you read them left to right as opposed to in a block – do you agree with that Mr Kiriakidis?

JK: Yes.
IAC: There was an email on the screen, I’m not sure if you had time to look at that – sent at 4:05pm

JK: There is one at 5.32 and 4.05.

AF: Alright. Watsonia Road, I think you agree, will have some significant increases in daily traffic – would you agree it’s not entirely appropriate for a knack.

JK: Watsonia Road is carrying a level of activity at present that is undesirable and the project with exacerbate that.

AF: That’s something that needs to be addressed isn’t it?

JK: It’s something that certainly needs to be managed through this process and every effort should be made to minimise through volume activity from Grimshaw Street to the north and Greensborough road to the south.

AF: I think we dealt with this yesterday, you include in your PP a comparison between the EES designs and the alternate designs that its right isn’t it, and you’ve said I think, in relation to the alternate design that you’ve done a relatively quick review – you’re not giving evidence that you’ve done a thorough review of those designs.

JK: No I haven’t reviewed the radius and those sorts of aspects of the design, the length of turn lanes. I’ve just reviewed the principals, or a principal-based assessment is what I’ve performed.

AF: And you’ve expressed a view that the alternative design seems appropriate, but you don’t take it any further than that.

JK: I say that’s preferable.

AF: You say its preferable, but you’ve not assessed in any detail the alternate designs advanced by Mr O’Brien.

JK: I have seen the designs; I’ve made some observations, but I haven’t reported those. But yes, I’ve seen his designs for Watsonia.

AF: So let me just ask you about Watsonia specifically. Does the panel have access to Mr O’Brien’s evidence? In Mr O’Brien’s evidence there is a plan – Annexure B, second page from the back – Watsonia Activity Centre (WAC). The title is ‘M80 – Grimshaw Street: Alternative design, Watsonia station’. Now that shows a comparison between Mr O’Brien’s design and the RD and the key feature of the alternative to the RD is the introduction of access across, at Elder street.

JK: It is

AF: And some reconfiguration of the southern extent at the bottom of Watsonia road as it interfaces with Greensborough road

JK: Yeah, I see that.

AF: Can I just ask you to focus your attention on the O’Brien design for the moment. One of the things that is of concern here to the Council is the rate of flow into and out of the activity centre from the intersections associated with Greensborough road and the facility. Mr O’Brien seeks to deal with that by making at the southern end the entry in the WAC a deliberate left hand turns rather than a slip lane at speed; a deliberate left-hand turn into the activity centre and then into Watsonia road by right hand turn at the roundabout. In terms of traffic coming and volumes; that’s consistent with the principal that would reduce through activity along Watsonia road isn’t it?

JK: I’m supportive with the approach of not adopting a high capacity slip lane into Watsonia road off Greensborough road. Now the way I read both the RD and the alternate for Watsonia is both incorporate those features; so Mr O’Brien’s, the EES reference and the alternate are all consistent. So where I
understand there is a difference is the realignment of Watsonia road and the creation of a roundabout just west of signals that connect Watsonia road arguably with Greensborough road.

AF: Can I just ask you a question about that. Have you done or reviewed any modelling that says what the impact of throughput traffic would be on the basis of the alternate design presented by NELP?

JK: Only to the extent that it's described in the technical note and the memo that we were served as part of preparing the evidence statement.

AF: The memo that you were served as part of preparing the evidence statement?

JK: Yes there is one in relation to Watsonia station.

AF: You're right but it's in terms of the alternative design that I'm asking about, presumably you didn't look at the alternative design when you were preparing your evidence statement.

JK: The alternate design had been exhibited, there was no analysis that accompanied the alternative at the time.

AF: Sorry we mistaken it with something else.

JK: Would you like me to continue to comment on the O’Brien plan?

AF: I'm going to ask you another question about it. So, you think they're similar in outcome?

JK: No, in relation to the left turn entry I see all three as being similar.

AF: In relation to Elder street you are in support of a connect across at that point, aren’t you? Because you like the alternate design.

JK: I think the directness in the alternate design connecting Elder with Greensborough road is a preferable outcome and there is a clear and evidence support for that outcome from the community. There are numerous submissions that criticise the original RD around the nature of access from Elder street to Greensborough road and the project.

AF: The idea here is to try and keep a connection to Greensborough road but it's also desirable when we're talking about an integrated project of this scale to try and maximise what can be achieved also in terms of public transport accessibility, correct?

JK: Well to the extent that that would be expected within the scoping requirements. We spent time on that yesterday so if we're starting to delve into enhancing outcomes – its not a specific requirement of the project but we should be managing outcomes.

AF: Okay so the approach you've taken here is that even though the project might represent an opportunity to improve the bus interchange here and connectivity east and west overall, that that's kind of out of scope and should be treated as an enhancement.

JK: It would be a complimentary project and I would go on to say that I also was guided by the structure plan, or the strategic plan, that had been prepared for Watsonia Station that was available at the time of preparing the evidence. I took guidance from that, including the vision within that particular document; I had regard to that document as well.

AF: In relation to Bulleen Road, there are obviously lots of people, lots of interests at Bulleen road that are concerned about the way the RD impacts a range of things, correct?

JK: Yes

AF: And you’re not saying at the moment that the RD drawing is the only way it can be done?

JK: Not at all
AF: And it's not within the area of your expertise to say that the RD is appropriate in relation to things like amenity, ecology, environment, social planning and alike, correct?

JK: No, correct.

AF: I take your evidence to be that further exploration of the detailed design of the Bulleen intersection should in fact occur.

JK: When you say Bulleen, which one?

AF: Bulleen Road and the freeway.

JK: I am saying that yes Bulleen road and the nodes that are pictured in whatever design you choose to adopt require further analysis.

AF: And in terms of the analysis that you've done in terms of Mr O'Brien's Bulleen road intersection, its relatively coarse grain at the moment?

JK: Correct

AF: You've conducted a group of conclaves with different witnesses from different interest groups, correct?

JK: Yes, they're coming at it from separate parties yes.

AF: You took the view in your first email to all of the witnesses that there were discrete issues between them all

JK: That's correct.

AF: Ms Marshall's giving evidence for Manningham and is concerned about the Bulleen Road intersection, right?

JK: Yes.

AF: Mr Gnanakone is giving evidence for the Manningham Hotel, again, concerned for the Bulleen road intersection.

JK: He didn't express a concern about the interchange... apart from Ms Marshall and Mr O'Brien they were the only two that expressed concerns about the design approach as it related to the broader corridor. As I understood it each of the other experts had more nuanced issues with access as it related and impacted their clients.

AF: But isn't it the case that any alternative to the RD is going to change the impacts on any number of the people who are located in that spot.

JK: Of course and I think that each of the experts acknowledge that, that it's a RD and it can change.

AF: And it can change at any point in time, assuming that the project is approved, up to when final approval is given under the planning control and having regard to the operation of the EPRs.

JK: Yes

AF: Who decides what the final design will be? Who has the power?

JK: The minister presumably that's issued the public works order.

AF: When will it be the case that other than in this process, the interested parties will have a say about what's important to them. Do you know?
JK: No I don’t, my understanding is that this would be the last time. I could be corrected if that’s not the case or intended to be the case.

AF: Thank you.

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Mr Edwards (E) – 2:10:06

E: Mr Kiriakidis going back to homework from last night regarding the full-time truck band – should we start there?

JK: If you like

E: So getting back to my original question, what would be the impact of a full time truck band along Roseanna road keeping in mind we’ve got the road rules – and you touched on a couple – where we’ve got some ‘get out of jail cards’ for big trucks or dangerous trucks.

JK: I’m just seeing if I can bring up the road rules, I did review the road rule – the no trucks sign. I think you may have read from part of it yesterday. So certainly as I review the road rule I believe your interpretation is a correct interpretation and that under sub rules 4 and 5 there is some flexibility to use the network where no truck signs apply with a growth vehicle mass limit if there is an intent to deliver or pick up goods within the precinct and that is the only possible route to access that precinct. So you could on the basis of interpreting that rule apply or adopt a 24-hour prohibition, if I could put it that way, and still service the activity centres and land users within that precinct based on permissions under that rule.

E: We’ve got these legitimate trucks driving down Roseanna Road with or without a no truck sign, do you think there is going to be a material change in the level of trucks if we had a 24-hour ban or we didn’t?

JK: There is a slide that might help answer that question. Now I know that outcome can be modelled so there is certainly an ability to extract a prediction from the modelling tools that we have access to.

E: I think I know the tables or the graph that you’re referring to showing about a 50% reduction and I think there is some commentary in there…

JK: There is a slide in there, I think slide 47, so there will be some material reductions. I suspect there would be some further change on the numeric that I’ve summarised in that graphical representation. The expectations there are there would certainly be some material increases but there is clearly a level of demand that would remain on the corridor. It’s difficult for me to estimate what further reductions might eventuate as a prospect of introducing the 24/7 bans, I expect it would be a further amount but to say precisely what that might be is extraordinarily difficult.

E: Do you think you’re in a position to say whether that’s a good idea to peruse or not at this stage?

JK: I think requesting a sensitivity test and a preparation of a technical note, which I wouldn’t of thought would be too difficult, on this issue to help guide the IAC would be a reasonable thing.

E: Kingsbury drive up on Latrobe, I think you did touch on this in one of your reports. They’re saying look we probably should duplicate it because there is probably going to be redistribution of traffic when they start doing the works. And I’ll also note when I had a look at it that the intersection is fled as additional lanes so maybe it is coming down to a mid-block capacity type issue. So I’m just wondering what your thoughts are on this, do we duplicate this road for the potential relocation of (2:15:28).

JK: I struggle with the rationale of let’s duplicate because during construction there is likely to be some inconveniences and some additional congestion. I don’t necessarily agree with that position or that rationale for the duplication I’m just trying to remind myself of what the, perhaps appendix D if we could
for a moment. So these are the projections; Kingsbury drive maybe west of Waterdale. That was the section that I understand duplication was being recommended so as I read it it's roughly eastbound 13 thousand to 17 thousand and westbound 13-16 thousand, in the no project there are increases as you observe there roughly in the order of 10-15%. The project under the post implementation is forecast to have a net positive effect on removing or reducing activity from that part of the network. So in terms of, returning to the scoping requirement, the notion of managing demands, clearly the project is going to have a positive impact on this part of the network. I don’t see the project as having a responsibility to duplicate that road despite there being potentially some merit with that particular change.

E: I think it was more when they start doing the road construction works everyone is going to be going 'ugh I’m not going to go down there', Kingsbury road is going to be the detour and because of that we should duplicate the road.

JK: For me, the issue then is whether there is a suitable and sufficient safety net within the EPRs and particularly those in and around developing the traffic management plans or the transport management plans and as an extension of that the monitoring process. Now clearly construction activities were to influence significantly on Kingsbury road I would expect there to be action taken by the project team to mitigate that impact. Now whether that’s advance warning, whether that’s encouragement dynamically through the use of alternative routes, could be a number of things or for that matter taking a different approach with the extent of construction, the time constructions taken and any techniques in and around affecting parts of the corridor and reducing throughput and capacity that's having that knock on effect on making Kingsbury drive more attractive then otherwise ideally should be.

E: So they could potentially do some sensitivity analysis and modelling to work out whether Kingsbury would be significantly impacted or not

JK: That is the requirement of the EPR for there to be some modelling to accompany changes to other parts of the network, yes.

E: Just on the East link Tunnels, I know you've seen traffic volumes in the microsimulation, just broadly speaking I'm not looking for you to be particular because we've got some commercial and confidence issues going on, but a three lane road, three lanes could probably take around 5-6 thousand vehicles per hour.

JK: That's about right.

E: Is it fair to say that the volumes in the tunnel will be below that or in that sort of vicinity

JK: My enquiries indicate that the volume west bound in the AM peak is somewhere around the 4,600/4,700 to 5,000 odd vehicles. Mr Finanzio also took the IAC through some values that are clearly documented within the report which confirm or affirm that that's the order of magnitude in demand that's expected in the AM peak hours.

E: And just my final question, we were wondering whether with the Bulleen interchange whether it dedicated an express lane from the NEL heading out to the Eastlink, and whether that would be beneficial in reducing ques or merging and weaving on those types of things. Or maybe it's been one of the 50 that's previously been analysed.

JK: I haven't seen all the options but is this in relation to access from Bulleen heading south onto the Eastern freeway, an alternate approach to using Thompsons road?

E: No this is more, I'm coming out of the NEL heading south and I want to go to the East link and currently we just have a single ramp with three lanes and it was whether should these have be hived off and I was sort of thinking of the Bolty bridge at the Westgate freeway how now they've got a dedicated express lane and the local lane into the CBD.

JK: I haven't looked at the design at that level of detail, so I don't feel as though I'm in the right place to make a recommendation on that.
E: Sorry just one more question, that was on the motor way volume design guide, I know it doesn’t specifically refer to C-D as a term but I’m just wondering if you could explain to me on that figure 10, which was in your slides. When it talks about number of lanes in the corridor where it goes 2+2 or 2-3 or 2-4, what’s that meaning?

JK: In my view it is making an attempt to represent separated lanes on an asset or a facility, in my opinion what it’s representing is in essence a C-D design. That’s how I’ve interpreted the graph, that’s how I’ve interpreted this section of the MVDG. So where it says a 3-3 in my mind, they’re two sub carriage ways that are physically separated from one another, for all intensive purposes it’s a C-D design. That’s how I read the manual.

IAC – 2:23:35

IAC: In relation to existing road closures along the route we’ve seen a few small ones such as Aven road – are there any other closures that you’re aware of or have seen that would give you any cause for concern?

JK: Not that would give me cause for concern, I mean the two areas that I reproduced in the slide deck were truncations up and around in Watsonia and the other was a [2:24:08] in the changes at Austin, but I’m not aware of any other significant changes. There is clearly some diminished access to properties that front Greensborough road through that quasi service road arrangement that’s being introduced – that’s the other. I’ve had regard for those, and I’m satisfied that the change or rerouting of activity can be accommodated by that local street network.

IAC: Do you know anything about tolling.

JK: That’s very broad

IAC: Is it fair to say that with the, as we understand it, State retaining control of the tolling system that takes away some of the commercial pressure to close off alternative routes to force people onto toll roads. Is that a fair statement in your experience?

JK: I think I would be overreaching by making a comment on that, I don’t think I have enough professional experience and appreciation of the sensitivities of modifying tolls within the model so I would prefer not to answer.

IAC: Can I get you to bring up sheet 18 of 42 in the map book - just north of Manningham road. We understand that there is a range of reasons for the design of this intersection and consequently a potentially significant range of impacts. Just looking at the areas to the north of bridge street, is there anything to be gained in perhaps taking a different approach and trying to spread the design north and south of bridge street, and I appreciate that you’ve only looked at these at a very high level, but just if there is any kind of different high level configurations that you might be able to help us with. And as I understand it the crossed area above is where the TVM is going to be recovered.

JK: I haven’t really turned my mind to other configurations, I certainly considered the alternate configuration proffered by Ms Marshall – which is some changes here at Bridge Street and some changes in accessibility – but I haven’t really turned my mind to what could be an alternate configuration here. There are some, as I’m aware, very high levels of demand; traffic that’s heading south on Templestowe road that’s turning right from Bridge street and heading west on Manningham Road – I know that’s a high movement, I’m very familiar with this area. Trying to deviate that to come back down to Manningham road I think would be problematic given the sheer volume of demand. So, I think it’s a difficult location given the proximity of three closely spaced intersections. As I understand the project team have sought to simplify in particular the off ramp from the project with Bridge street itself. When you look at the functionality here you’ve got what they call diamond right turn lanes that come out of the opposing approaches and its very deliberate to try and simplify the functionality and I know that means for some routes there will be extended lengths of travel, now one of the criticisms are well why couldn’t you head straight through and then access Templestowe road; you need to perform a right turn and then do a left turn up onto Templestowe. The fact of the matter is that if you increase that functionality
it will have, in my view, a very significant impact on the throughput performance of this particular node – it adds what we call signal phases, it adds inefficiencies, lost time – because the only way you can legitimately run is by imposing what we call a split phase, you can not run concurrent phases and that is extraordinarily inefficient and it reduces flexibility on how you can operate the network. So I don’t think there is an obvious alternate but guided by the project team if there are others or alternates, they’re prepared to share with the IAC that have been considered.

IAC: Just in relation to tunnel grades I think we were told the other day, I can’t remember who by, that the Burnley tunnel is 5-6 % would that accord with your understanding?

JK: I don’t know specifically.

IAC: And do you know the grades in the EL tunnels?

JK: No.

IAC: I’m sure you’ve been through them; would you hazard a guess that they’re 4%?

JK: The grades are shallow and that’s obvious by the length of those particular tunnels. I’m not quite sure what design standard is being imposed on these tunnels in comparison to both of those existing. My instructions are that authorities at the time was VicRoads now DOT have provided instructions on there expectations of what grades would be imposed but I’m not sure how they would compare with existing tunnels, perhaps a question that the project team could answer.

IAC: Thank you.

Matthew Townsend (MT) – 2:30:11

MT: I might take you to the question Mr Edwards asked you about the MVG and your interpretation of figure 10. The document that was provided also makes reference to international research. Have you familiarised yourself or are you familiar with the international research which is also relied upon for that document?

JK: No I haven’t reviewed the research, but I know the document further on makes reference to it, in particularly around research on crashes and safety.

MT: That’s alright perhaps I’ll just ask you this; is the term C-D a unique and exclusive term to describe barrier divided names.

JK: No I don’t believe so.

MT: Now you were asked some questions about a consideration of a 24-hour truck band on Roseanna road, are you aware whether the EES or include any sensitivity analysis or sensitivity testing of the 24-hour truck band.

JK: There was some sensitivity analysis, but I can’t recall whether that had been tested, would be happy for you to take me there if it’s the case that it’s already been tested.

MT: Can I draw your attention to page 488, PDF page 496 in the third last column. So is there anything you can derive to assist the committee with its question from that?

JK: That particular page and looking at the table in whole is a summary of daily traffic volumes and I would interpret that as indicating, where a cell is shaded in red, that that would represent – that’s a good question actually I take that back.

MT: Its alright we can come back to this if its not something you’ve reviewed yourself.
JK: daily car volume impacts, daily truck volume impacts – I’m not quite sure of the shading in red vs blue but there is clearly some links on the network where increases are forecast and some where there are decreases.

IAC: I see the 24-hour truck band – Roseanna road 4% - that’s on page 488 of the PDF

JK: I see that, and now my memory is starting to return. I did comment on this in the witness statement, so it has been covered and it has been addressed and there were some enquiries about these particular results and there was an enquiry around why have the truck volumes increased on Roseanna road after introducing a 24-hour truck band, it just seemed counter intuitive. And forgive me, it’s a big file and there is a lot of information but it’s coming back to me. I do think I provided some commentary on this in the report but my recollection is that when they ran this sensitivity test it seems as though trucks in the model were diverting from the Roseanna route and finding a series of east-west links to navigate and bypass the curfews and the screen line in the model or the particular location involved a quick access to Roseanna road; it was entering Roseanna road and then leaving Roseanna road very quickly – the trucks that were not permissible to access the link. So I understood it to be a glitch in the model, I don’t know whether any subsequent analysis was prepared but the observation is that yes it would have a positive impact on reducing truck flows but its not reflected and represented in this particular table because of a nuance with the model and the reporting.

MT: Perhaps the question I was really leaning to there was do you have an opinion on, as a matter of use of infrastructure design or efficiency, whether Roseanna road is a road that ought have 24-hour truck bands and how does it compare with other road in the Metropolitan network and how do you see that as relevant to its function and categorisation.

JK: I’m comfortable with the projections that are contained as a product of the modelling with only the retention of the existing curfews or bands. The level of truck activity on what is a declared primary arterial road as a consequence of this project is consistent with what you could expect anywhere else on the network.

MT: I want to move to LOS, you were asked questions on behalf of both Councils about what the design LOS is in the RD and referred to VicRoads, or what was described as industry standards, what is your opinion as to the appropriate level of service for the design for this project or indeed other road projects in Victoria.

JK: Look I’ve been on record noting that I’m comfortable that a LOS-D is an appropriate LOS target for this project and for many other projects with a planning horizon that’s been tested. I’m aware of recommendation in documents like the highways capacity manual, the USA document that Mr O’Brien has relied upon; that recommends that these sorts of facilities look to attain this LOS-C or D and I’m also aware of other VicRoads supplements that specifically note targets for freeways in urban conditions to achieve LOS-C. So there are documents within this jurisdiction that actually aspire to target, better targets, lift the bar higher than the target that’s actually being chosen to be adopted for this particular project. With that being said I think landing on LOS-D and given the consequences that I’ve described to the IAC of designing for something at ‘E’ or ‘F’ it hits the right mark.

MT: Do you apply that same answer to interchanges and the freeway itself?

JK: Yes, I think it extends to the interchanges; it would be very unusual to apply one standard to freeway segments and other to the interchanges.

MT: You were asked some questions on behalf of the three Council group today by Mr Finanzio where you were asked to assume that the interchanges ought to be designed to LOS-D

JK: Yes that’s what I understood

MT: Unless I misunderstood it, you were asked questions yesterday on behalf of Manningham concerning the MRI where you were asked to assume the possibility of designing that for LOS-E.

JK: I don’t know if it was put exactly that way but there was certainly some commentary about designing it for a lesser LOS.
MT: Can you just expand on what are some of the implications locally if you take an interchange like that and design it for lower level LOS and include considerations of say public transport, throughput, land use uplift on fragments – say the industrial residual land at the moment.

JK: Look I expect the probable outcome is the delivery upon project operation of a pinch point. You’re likely to generate a pinch point for the project itself, so difficulties with impacts on the project which the effects are fairly obvious and then at the surface level in and around Manningham and Bulleen Road clearly impacts on general traffic and as you describe, any bus routes that might traverse that particular intersection. So there are knock on effects to other modes, travel time benefits that the project delivers on those other modes and just general functionality in and around that part of the network.

MT: Do you recall yesterday, I think it was in questions from Manningham, you were asked questions about safety for freeways and were taken to comments to the effect that the use of freeway as opposed to other arterial roads is a safer function for traffic movements and there is a reduction in crashes when you use freeways relative to other roads?

JK: Yes that’s what the research is; for every km travelled on freeways the crash rates are less than other road types.

MT: I just want you to assume for a moment, I might have misunderstood the question – that the purpose of the question was to say well there is already a benefit, there is already safety benefit before you go to barrier separation.

JK: Yes, that is the case, whether it be an unconstrained or a C-D design, yes you would expect there to be a crash rate reduction, I think through the adoption of the C-D design the benefit is greater.

MT: And in terms of with the C-D benefit being greater, what alignment does that have with strategies in place in Victoria including the ‘towards zero’ strategy referred to in the TTIA.

JK: It’s clearly more consistent

MT: Can you just expand on that?

JK: Certainly there is a target to remove and reduce all fatalities and casualty accidents so delivering a facility which is conceivably susceptible to fewer crashes is more consistent with the expectations of that policy.

MT: Now you were asked some questions about the EL tunnels but first of all are you able to assist the committee with any initiative and designs as part of the RD that actually improve the flow and the operation of the tunnels?

JK: I expect the changes are managing demand into that particular tunnel so really it turns back to the managed motorway system and how do we meet a flow coming in off the Ringwood bypass, how do we meet a flow that’s accessing the project at the Maroondah highway interchange and a series of interchanges further south along EL. So for me the most obvious one is managing and metering demand as it enters the corridor.

MT: Now you were asked a number of questions about congestion, or use, or flow through the tunnel in the peak hours including by trucks and you qualified an answer but said that’s for the peaks. Can I ask you why you emphasised that the questions you were being asked concerned peak times and what is the relevance of considering the rest of the week and the hours of the day in terms of the potential use of the freeway and indeed the tunnels.

JK: The observation that I was making is, queries raised around – well isn’t the role of this project to help manage freight – and as I saw it there were observations being made around well isn’t there an expectation that freight volumes would increase through the tunnels and I just went on to explain that yes it will happen or is expected to happen through the course of the day – rather than solely in the peaks themselves. I’m not sure if I’ve answered your question for you.
MT: The question I was asking was what relevance is there, or what focus should the process have on the function of the tunnels and the freeway at other times of the day other than the peaks.

JK: Well its clearly a consideration but the emphasis, in my experience, is managing demand during the peaks.

MT: Now can I ask you to, just in terms of Hoddle street, to go to the memo that was attached to your witness statement, the 13 June 2019 memo headed ‘response to outstanding items in microsimulation peer review report’ and you were not taken I think, perhaps not saying intentionally so, but there is a figure 2 that deals with projective que lengths from Hoddle Street diverged, modelled and observed and some advice under that figure on the third page of that memo. Do you see that?

JK: I do

MT: And the memo reported the back of the que remains clear of the Chandler Highway west bound merging (2:44.09) throughout the model and therefore does not impact results inside the validated microsimulation model study area – what was your position or what approach did you take based on that advice and your satisfaction with that advice.

JK: Look as a firm we sort of sought to independently verify that drawing on local experience and looking at some of the Vic traffic maps just to satisfy ourselves what’s reported in that particular memo is consistent with our views. So I mean the original question stem from the analysis is theoretical, I mean you’re just drawing the IACs attention here to the fact that these aspects were physically measured, and they’ve been reported, and they’re being compared to the estimates in the model. What you see in figure two is generally consistent with observations from my firm and hence lead to the final conclusion that we were satisfied that the approach being taken is adequate.

END 2:45:40