AMDS presentation on Multimodal Networks – Video transcript

| Timestamp | Visual Information | Audio Information |
| --- | --- | --- |
| 00:00:00,000  | A slide fades in, and it reads, "*Managing our future networks.*" | [silence] |
| 00:00:10,305  | A new slide fades in. It reads:“*Multi-modal Network purpose**Current and future state**Creating maximum public value**Developing a flexible framework**AMDS – Foundational building block.*”There is an information box on the right of the screen. It reads:“*TOTAL LAND TRANSPORT ASSETS**68 road controlling authorities responsible for the management of roads in NZ**95,608 kms of road**19,962 bridges.*” | [silence] |
| 00:00:12,907  | The slide remains on screen | **David Darwin:** Ok, so what is multimodal network? |
| 00:00:16,800  | The slide remains on screen | **David Darwin:** It's a network that ascribes the location function for multimodal |
| 00:00:21,822  | The slide remains on screen | **David Darwin:** networks their performance across on-road and off-road in New Zealand.  |
| 00:00:28,273  | The slide remains on screen | **David Darwin:** They provide both a current and future state for every mode of transport.  |
| 00:00:32,600  | The slide remains on screen | **David Darwin:** We want one network description to provide the common |
| 00:00:35,733  | The slide remains on screen | **David Darwin:** ground for the various purposes that we have. |
| 00:00:38,727  | The slide remains on screen | **David Darwin:** We're working with the One Network Framework, National Speed Limit Team, |
| 00:00:42,900  | The slide remains on screen | **David Darwin:** the Consistent Conditions Data Collection Project, and |
| 00:00:45,144  | The slide remains on screen | **David Darwin:** the rest of the Asset Management Data Standard.  |
| 00:00:48,700 | The slide remains on screen | **David Darwin:** All these projects rely on networks and their position; this element |
| 00:00:52,200  | The slide remains on screen | **David Darwin:** of the AMDS provides that Common Ground for describing networks, |
| 00:00:56,000  | The slide remains on screen | **David Darwin:** and therefore, unlocks the greatest public value that we can get  |
| 00:00:58,763  | The slide remains on screen | **David Darwin:** by having only one network. |
| 00:01:04,599  | The slide remains on screen | **David Darwin:** What we're working on is a flexible framework. One that at the moment is targeted |
| 00:01:07,700  | The slide remains on screen | **David Darwin:** at the core elements of a network knowing that we will extend |
| 00:01:11,100  | The slide remains on screen | **David Darwin:** it in the future to provide greater functionality, but the |
| 00:01:13,890  | The slide remains on screen | **David Darwin:** first step is to basics right. |
| 00:01:18,600  | The slide remains on screen | **David Darwin:** We see this is a foundational building block on which we can build |
| 00:01:22,900  | The slide remains on screen | **David Darwin:**  the Asset Management Data Standard, describing networks, assets, the |
| 00:01:24,773  | The slide remains on screen | **David Darwin:** lifecycle activities. |
| 00:01:28,300  | The slide remains on screen | **David Darwin:** But also, the One Network Framework, the and the performance |
| 00:01:31,400  | The slide remains on screen | **David Darwin:** elements to go with that for every mode of transport. |
| 00:01:38,900  | The slide remains on screen | **David Darwin:** And provide a framework that backdrops for the REG programs |
| 00:01:44,192  | The slide remains on screen | **David Darwin:** Consistent Condition Data Collection Project. |
| 00:01:48,477  | The slide remains on screen | **David Darwin:** That project is developing its business case and will, for example  |
| 00:01:52,900  | The slide remains on screen | **David Darwin:** provide the condition of the infrastructure underpinning the services provided |
| 00:02:05,900  | A slide fades in, and it reads, "*Managing our future networks.*" | **David Darwin:** across the multimodal networks. |
| 00:02:09,500  | A slide fades in, it reads "*Future Benefits**Waka Kotahi and sector benefitsFuture Network ModellingCross Government Collaboration*”There is an info box to the right. It reads:“*TOTAL LAND TRANSPORT ASSETS68 road controlling authorities responsible for the management of roads in NZ95,608 kms of road19,962 bridges*” | **Jeremy Gulson:** Thanks, David. Look, I'm going to talk to three points here that on |
| 00:02:11,300  | The slide remains on screen | **Jeremy Gulson:** the screen the benefits to the sector. |
| 00:02:15,700  | The slide remains on screen | **Jeremy Gulson:** that we see. The future network modelling and I guess the fact |
| 00:02:19,010  | The slide remains on screen | **Jeremy Gulson:** that this is something that is very much across government |
| 00:02:20,621  | The slide remains on screen | **Jeremy Gulson:** collaboration effort.  |
| 00:02:30,900  | The slide remains on screen | **Jeremy Gulson:** So, the benefits to Waka Kotahi and the sector enormous the ability to have a consistent level of |
| 00:02:35,200  | The slide remains on screen | **Jeremy Gulson:** reporting across internal and external to the agency is important |
| 00:02:37,200  | The slide remains on screen | **Jeremy Gulson:** to have a single point of view. |
| 00:02:41,300  | The slide remains on screen | **Jeremy Gulson:** There's a lot of benefits to being able to have a single |
| 00:02:45,500  | The slide remains on screen | **Jeremy Gulson:** point of view in interactions with our rural and urban environments. |
| 00:02:51,500  | The slide remains on screen | **Jeremy Gulson:** We do quite a lot of work reporting that'll be of benefit |
| 00:02:55,400  | The slide remains on screen | **Jeremy Gulson:** to the sector in ourselves and terms of reporting and baselining |
| 00:02:59,900  | The slide remains on screen | **Jeremy Gulson:** a lot of information against a single point, for example, for the |
| 00:03:04,900  | The slide remains on screen | **Jeremy Gulson:** Road to Zero programme in the reduction of DSIs and the strategies aligned |
| 00:03:10,900  | The slide remains on screen | **Jeremy Gulson:** to those as well, as things such as the safe infrastructure investment plan |
| 00:03:14,900  | The slide remains on screen | **Jeremy Gulson:** We use a lot of data to support the measuring and |
| 00:03:18,300  | The slide remains on screen | **Jeremy Gulson:** performance of how we are performing as an agency, and we |
| 00:03:21,900  | The slide remains on screen | **Jeremy Gulson:** see that this will be a significant driver here as well how we are doing |
| 00:03:26,700  | The slide remains on screen | **Jeremy Gulson:** against cycling uptake, climate change and providing effectively |
| 00:03:31,000  | The slide remains on screen | **Jeremy Gulson:** evidence-based for a single or multiple functions both in |
| 00:03:33,600  | The slide remains on screen | **Jeremy Gulson:** the investment planning, but also the operational aspects. |
| 00:03:39,600  | The slide remains on screen | **Jeremy Gulson:** In the future modelling space, ONF is a key aspect of that |
| 00:03:43,200  | The slide remains on screen | **Jeremy Gulson:** we do a little bit of work around making sure that we meet our targets |
| 00:03:47,800  | The slide remains on screen | **Jeremy Gulson:** and measures. So, accessibility having a national |
| 00:03:51,700  | The slide remains on screen | **Jeremy Gulson:** view of accessibility to cycle network is a key |
| 00:03:54,800  | The slide remains on screen | **Jeremy Gulson:** output and a key target we have on ourselves |
| 00:03:59,100  | The slide remains on screen | **Jeremy Gulson:** as well, as our performance modelling that we do in terms |
| 00:03:59,800  | The slide remains on screen | **Jeremy Gulson:** of our tracking |
| 00:04:04,700  | The slide remains on screen | **Jeremy Gulson:** the uptake of using different modes of transport. |
| 00:04:07,800  | The slide remains on screen | **Jeremy Gulson:** The last one is, I guess like I said that the idea that this is not |
| 00:04:11,200  | The slide remains on screen | **Jeremy Gulson:** something that we can do on her own. |
| 00:04:17,700  | The slide remains on screen | **Jeremy Gulson:** It's a collaboration across government efforts. A framework to adopt |
| 00:04:21,300  | The slide remains on screen | **Jeremy Gulson:** and to work together across stakeholders, RCAs, government |
| 00:04:21,800  | The slide remains on screen | **Jeremy Gulson:** and the sector. |
| 00:04:22,900  | The slide remains on screen | **Jeremy Gulson:** It's a big job. |
| 00:04:26,500  | The slide remains on screen | **Jeremy Gulson:** You know, it's going to provide a common framework for us |
| 00:04:31,500  | The slide remains on screen | **Jeremy Gulson:** to consume data and support other initiatives across |
| 00:04:35,700  | The slide remains on screen | **Jeremy Gulson:** government. So yeah, we're very supportive |
| 00:04:41,400  | The slide remains on screen | **Jeremy Gulson:** to give us a single point of infrastructure investment across |
| 00:04:45,500  | The slide remains on screen | **Jeremy Gulson:** using AMDS & ONF in particularly to make sure that |
| 00:04:49,500  | The slide remains on screen | **Jeremy Gulson:** we have you know that single point of information to support |
| 00:04:54,381  | The slide remains on screen | **Jeremy Gulson:** our business supports our parts of Waka Kotahi |
| 00:04:59,800  | A slide fades in. It reads "*Network Model.*" | **Jeremy Gulson:** Thank you.  |
| 00:05:04,200  | The slide remains on screen | **Elke Beca:** Tēnā koutou katoa, welcome everyone and thanks to David and Jeremy for |
| 00:05:08,100  | The slide remains on screen | **Elke Beca:** the intro and I guess setting the scene for this national |
| 00:03:47,800  | A slide fades in. It reads "*Network Model**The network definition is the backbone of the AMDS and critical to the management, analysis and reporting of land transport assets. This definition underpins the standard and is foundational to pulling the performance and associated asset data together.*”There is an image representing the network to the right. An arrow is pointing up from the network | **Elke Beca:** network model discussion. |
| 00:05:10,000  | The slide remains on screen | **Elke Beca:** I'm now going to you through more of the finer details |
| 00:03:54,800  | The slide remains on screen | **Elke Beca:** kind of healing back the onion a little bit of the approach |
| 00:03:59,100  | The slide remains on screen | **Elke Beca:** that we've taken to date with the network definition.  |
| 00:03:59,800  | The slide remains on screen | **Elke Beca:** Starting with what the network model is and it's where |
| 00:04:04,700  | The slide remains on screen | **Elke Beca:** it fits into an AMDS. I'd also like to mention at this stage |
| 00:04:07,800  | The slide remains on screen | **Elke Beca:** we're still at a conceptual stage with the network development |
| 00:05:14,400  | The slide remains on screen | **Elke Beca:** and the session today is really to give you insight into |
| 00:05:17,400  | The slide remains on screen | **Elke Beca:** the direction. |
| 00:05:21,600  | The slide remains on screen | **Elke Beca:** we're heading and provide an opportunity for you to provide |
| 00:05:24,400  | The slide remains on screen | **Elke Beca:** feedback so that we can work together going forward to |
| 00:05:28,700  | The slide remains on screen | **Elke Beca:** finalise this and get the shape to where we need it to be. |
| 00:05:32,300  | The slide remains on screen | **Elke Beca:** So please go ahead and drop questions or comments into the |
| 00:05:36,200  | The slide remains on screen | **Elke Beca:** chat as we go through and will address those at the end. |
| 00:05:36,700  | The slide remains on screen | **Elke Beca:** So, the network model. |
| 00:05:40,700  | The slide remains on screen | **Elke Beca:** At a foundational level, I like to think of the network |
| 00:05:45,600  | The slide remains on screen | **Elke Beca:** as the backbone of the transport system so a representation |
| 00:05:49,400  | The slide remains on screen | **Elke Beca:** of where people and goods can travel and a referencing |
| 00:05:53,100  | The slide remains on screen | **Elke Beca:** system to link our |
| 00:05:58,200  | The slide remains on screen | **Elke Beca:** transport assets too. So, now, in the context |
| 00:05:59,800  | An image representing assets appears above the representation of the network | **Elke Beca:** of what we have in place, road |
| 00:06:03,200  | The slide remains on screen | **Elke Beca:** centre lines and carriageway segmentation define |
| 00:06:06,200  | The slide remains on screen | **Elke Beca:** our network. |
| 00:06:10,900  | The slide remains on screen | **Elke Beca:** They essentially provide the referencing system to help us understand. |
| 00:06:12,100  | The slide remains on screen | **Elke Beca:** where our assets |
| 00:06:17,400  | The slide remains on screen | **Elke Beca:** are located so that we can maintain them so quite an |
| 00:06:20,900  | The slide remains on screen | **Elke Beca:** asset-centric purpose. The future network view that we're |
| 00:06:24,100  | The slide remains on screen | **Elke Beca:** proposing will help us to transition from this asset focus |
| 00:06:24,900  | The slide remains on screen | **Elke Beca:** towards the performance focus that David spoke |
| 00:06:29,300  | The slide remains on screen | **Elke Beca:** to enabling us to understand not only where assets are located, |
| 00:06:30,400  | The slide remains on screen | **Elke Beca:** but more importantly how people interact with our infrastructure, |
| 00:06:33,800  | The slide remains on screen | **Elke Beca:** and the interrelationship between our users with people, our |
| 00:06:38,400  | The slide remains on screen | **Elke Beca:** assets and their performance. |
| 00:06:42,300  | The slide remains on screen | **Elke Beca:** Not only planning for today but also into the future. |
| 00:06:46,400  | The slide remains on screen | **Elke Beca:** So, how does the network model fit into AMDS? |
| 00:06:49,900  | The slide remains on screen | **Elke Beca:** We see I guess that the network model is foundational |
| 00:06:54,300  | The slide remains on screen | **Elke Beca:** part of the AMDS layer cake shown by the graphic on the right |
| 00:06:58,100  | The slide remains on screen | **Elke Beca:** essentially underpinning the standard today. |
| 00:06:59,700  | The slide remains on screen | **Elke Beca:** To date, you’ll be most familiar with the asset layer with most of |
| 00:07:04,500  | An image representing lifecycle appears above the representation of the assets | **Elke Beca:** the core assets on track for release under the standard by |
| 00:07:09,100  | The slide remains on screen | **Elke Beca:** the end of the year (if we could go to the next slide) the |
| 00:07:15,200  | The slide remains on screen | **Elke Beca:** lifecycle and operational aspects that include condition, the |
| 00:07:20,100  | The slide remains on screen | **Elke Beca:** works programming and maintenance are currently under development |
| 00:07:23,600  | An image representing the operational appears above the representation of the lifecycle appears | **Elke Beca:** and there is a strong |
| 00:07:28,500  | The slide remains on screen | **Elke Beca:** interrelationship between all these layers, many of which |
| 00:07:32,200  | The slide remains on screen | **Elke Beca:** are yet to really understand and develop, so |
| 00:07:37,500  | The slide remains on screen | **Elke Beca:** it is, as I mentioned, very much a work in progress and as |
| 00:07:41,800  | The slide remains on screen | **Elke Beca:** also, Jeremy and David mentioned in each of these layers |
| 00:07:44,600  | The slide remains on screen | **Elke Beca:** there are interconnections with other projects being done |
| 00:07:47,100  | The slide remains on screen | **Elke Beca:** within Waka Kotahi and through the REG group such as the |
| 00:07:50,600  | The slide remains on screen | **Elke Beca:** Consistent Data Collection project, which will inform these various |
| 00:07:54,300  | The slide remains on screen | **Elke Beca:** layers and interrelate as well. |
| 00:07:59,700  | The slide remains on screen | **Elke Beca:** So really this section focuses on the network model, so the |
| 00:08:03,500  | The slide remains on screen | **Elke Beca:** bit underpinning with an acceptance that we haven't quite covered |
| 00:08:07,600  | The slide remains on screen | **Elke Beca:** off all the loose ends and tie them up, and the approach |
| 00:08:11,300  | The slide remains on screen | **Elke Beca:** we're taking with the development is flexible enough to be |
| 00:08:15,300  | The slide remains on screen | **Elke Beca:** tie in |
| 00:08:36,400  | A new slide fades in. It reads:“*3D Link/Node ModelSpatial with Linear DerivedLink: Represents a section of connectivity between two nodes. Key attributes include Direction, Mode, Travel Length, Restrictions/Constraints and FeaturesNode: Represents a change point. Key attributes include Movement Rules, Node Type.*”Two images represent the 2d network and the 3d network | **Elke Beca:** the loose ends and scalable enough for ongoing future advances. |
| 00:08:45,300  | The slide remains on screen | **Elke Beca:** (next slide, please) So the fundamental shift we're taking |
| 00:08:50,200  | The slide remains on screen | **Elke Beca:** with a network model is the transition to spatial. |
| 00:08:53,800  | The slide remains on screen | **Elke Beca:** Moving away from the flat two-dimensional centreline that we currently |
| 00:08:59,700  | The slide remains on screen | **Elke Beca:** employ to a three-dimensional link node spatial representation. |
| 00:09:05,000  | The slide remains on screen | **Elke Beca:** From a locational perspective, this will represent little |
| 00:09:09,700  | The slide remains on screen | **Elke Beca:** change from the current status where linear referencing a |
| 00:09:13,600  | The slide remains on screen | **Elke Beca:** route positions will still easily be derived from the spatial |
| 00:09:16,900  | The slide remains on screen | **Elke Beca:** coordinates, so we won't lose what we have now |
| 00:09:21,600  | The slide remains on screen | **Elke Beca:** where the significant benefits will come is in the analytic |
| 00:09:25,000  | The slide remains on screen | **Elke Beca:** benefits of moving to spatial that I'll be touching on this |
| 00:09:26,524  | The slide remains on screen | **Elke Beca:** week progress through the session. |
| 00:09:32,100  | The slide remains on screen | **Elke Beca:** The spatial network has two primary components, the links and the nodes. |
| 00:09:36,200  | The slide remains on screen | **Elke Beca:** The node essentially is a change point, and the links represent |
| 00:09:39,600  | The slide remains on screen | **Elke Beca:** a section of connectivity or flow between two nodes. |
| 00:09:43,200  | The slide remains on screen | **Elke Beca:** So, if you refer to our current setup, you can think |
| 00:09:47,100  | The slide remains on screen | **Elke Beca:** of the links as our carriageway sections and the nodes are the change |
| 00:09:54,092 | A new slide fades in. It reads:“*PurposePurpose of the Network ModelAsset location (the link between assets and movement of people & goods)The direction of flow (movement of people, goods, others)Modes of flow (what mode can travel on any link)Route Planning (connectivity by mode from point A to point B)Constraints and Restrictions*” | **Elke Beca:** or breakpoints in between them (next slide, please) |
| 00:09:59,700  | The slide remains on screen | **Elke Beca:** So, the purpose of the model. The network model, I guess, is a starting |
| 00:10:04,300  | The slide remains on screen | **Elke Beca:** point does enable similar functionality is as our current |
| 00:10:08,300  | The slide remains on screen | **Elke Beca:** status around the location or referencing, although from a spatial |
| 00:10:13,500  | The slide remains on screen | **Elke Beca:** basis rather than a linear basis the assets as their developed |
| 00:10:17,700  | The slide remains on screen | **Elke Beca:** under AMDS, the standard underpinning them will be spatially |
| 00:10:19,000  | The slide remains on screen | **Elke Beca:** represented as well. |
| 00:10:22,700  | The slide remains on screen | **Elke Beca:** So, they'll be located in space, and the network model provides |
| 00:10:27,100  | The slide remains on screen | **Elke Beca:** the link between these assets and where they sit, I guess |
| 00:10:30,800  | The slide remains on screen | **Elke Beca:** in relation to the movement of people and goods and the performance |
| 00:10:36,600  | The slide remains on screen | **Elke Beca:** aspect so first and foremost is the locational referencing |
| 00:10:42,600  | The slide remains on screen | **Elke Beca:** aspect in the linking back to the network.  |
| 00:10:48,400  | The slide remains on screen | **Elke Beca:** The model captures the direction of flow or the movement of people and goods and |
| 00:10:53,000  | The slide remains on screen | **Elke Beca:** as I mentioned before, scalable to expand in time to include |
| 00:10:58,500  | The slide remains on screen | **Elke Beca:** other entities such as the likes of drainage networks  |
| 00:10:59,600  | The slide remains on screen | **Elke Beca:** ITS networks all that |
| 00:11:03,800  | The slide remains on screen | **Elke Beca:** have flow and movement and are interconnected into part |
| 00:11:08,100  | The slide remains on screen | **Elke Beca:** of our transport system, so there is that scalability |
| 00:11:11,800  | The slide remains on screen | **Elke Beca:** as a starting point, we're again trying to get the  |
| 00:11:15,200  | The slide remains on screen | **Elke Beca:** framework in place to enable the scalability, but keep the first |
| 00:11:19,700  | The slide remains on screen | **Elke Beca:** cut simple enough that it is relevant to everyone and |
| 00:11:24,622  | The slide remains on screen | **Elke Beca:** and able to be implemented.  |
| 00:11:32,700  | The slide remains on screen | **Elke Beca:** The other key aspect is multimodal, or mode enabled, so capturing information on which modes can |
| 00:11:40,600  | The slide remains on screen | **Elke Beca:** travel on any link within the network and then critical |
| 00:11:44,300  | The slide remains on screen | **Elke Beca:** bit probably that the final requirements of the network model |
| 00:11:45,700  | The slide remains on screen | **Elke Beca:** is its connectivity. |
| 00:11:50,900  | The slide remains on screen | **Elke Beca:** So once the network model was established and connected and |
| 00:11:55,100  | The slide remains on screen | **Elke Beca:** that includes not only roads but all aspects within the transport |
| 00:11:59,600  | The slide remains on screen | **Elke Beca:** system we can start to employ special analytic tools. |
| 00:12:04,900  | The slide remains on screen | **Elke Beca:** To understand not only how our users are interacting with |
| 00:12:08,800  | The slide remains on screen | **Elke Beca:** the assets, but I guess the flip side is how the performance |
| 00:12:12,900  | The slide remains on screen | **Elke Beca:** of the assets themselves impacts on the user, |
| 00:12:20,100  | The slide remains on screen | **Elke Beca:** so, some of you out there you may move rapidly towards |
| 00:12:24,200  | The slide remains on screen | **Elke Beca:** capturing more the complex information such as the constraints |
| 00:12:28,800  | The slide remains on screen | **Elke Beca:** and restrictions by mode to understand accessibility. |
| 00:12:34,400  | The slide remains on screen | **Elke Beca:** So, example identifying the locations of your stairways, |
| 00:12:39,100  | The slide remains on screen | **Elke Beca:** which would constrain micro-mobility or cyclist movement |
| 00:12:43,300  | The slide remains on screen | **Elke Beca:** and or starting that connection of real-time data into the |
| 00:12:47,100  | The slide remains on screen | **Elke Beca:** network to understand the performance kind of is your segway |
| 00:12:51,300  | The slide remains on screen | **Elke Beca:** towards our digital future in ultimately into the digital twin |
| 00:12:52,382  | The slide remains on screen | **Elke Beca:** space.  |
| 00:12:57,000  | The slide remains on screen | **Elke Beca:** So, as I mentioned earlier, the approach we're taking in developing this network is to ensure |
| 00:12:59,600  | The slide remains on screen | **Elke Beca:** it's simple enough that |
| 00:13:04,200  | The slide remains on screen | **Elke Beca:** even the smallest TLAs can transition and then also be flexible enough |
| 00:13:07,900  | The slide remains on screen | **Elke Beca:** for the advanced than more complex metros gain |
| 00:13:13,500 | A new slide fades in. It reads"*Transition to 3D*"There is an image on the left with an example of a 2D network. An arrow points to an image on the right that is an example of a 3D network. | **Elke Beca:** value and to ensure that it's future proof. (Ok, next slide, please). |
| 00:13:24,100  | The slide remains on screen | **Elke Beca:** Ok, so there are three critical aspects beyond the transition |
| 00:13:28,500  | The slide remains on screen | **Elke Beca:** to spatial that we have in this this prototype or proof-of-concept |
| 00:13:31,000  | The slide remains on screen | **Elke Beca:** that's been put together to date. |
| 00:13:35,400  | The slide remains on screen | **Elke Beca:** So, the first is that transition to three-dimensional, which |
| 00:13:40,000  | The slide remains on screen | **Elke Beca:** is represented graphically on the slide here. |
| 00:13:44,100  | The slide remains on screen | **Elke Beca:** So, this is a representation of a little snippet of the Auckland |
| 00:13:50,200  | The slide remains on screen | **Elke Beca:** transport network down Wynyard Quarter on the left kind |
| 00:13:54,600  | The slide remains on screen | **Elke Beca:** of looking at the centre lines, as they currently exist |
| 00:13:58,600  | The slide remains on screen | **Elke Beca:** in our network approach and on the right, what that |
| 00:13:59,500  | The slide remains on screen | **Elke Beca:** transitions to once we  |
| 00:14:02,800  | The slide remains on screen | **Elke Beca:** move to a 3D link note type approach. |
| 00:14:06,500 | A new slide fades in. It reads:"*Extended Network*"There is an image on the left that provides an example of a road on a network. An arrow points to a second image on the right that provides an example of an on-road/off-road network. | **Elke Beca:** So really, it's adding the z-coordinate (next slide, please) |
| 00:14:14,100  | The slide remains on screen | **Elke Beca:** The second aspect is recognising that we're more than roads, |
| 00:14:18,200  | The slide remains on screen | **Elke Beca:** and our current |
| 00:14:24,000  | The slide remains on screen | **Elke Beca:** approach is very road centric, and we haven't precisely landed |
| 00:14:28,400  | The slide remains on screen | **Elke Beca:** on where we're going land with this if you like, |
| 00:14:33,000  | The slide remains on screen | **Elke Beca:** but our initial thinking is a two-network approach, so |
| 00:14:38,200  | The slide remains on screen | **Elke Beca:** thinking on-road/off-road, recognising that we have a number |
| 00:14:44,700  | The slide remains on screen | **Elke Beca:** of modes that are predominantly off the road network if |
| 00:14:49,000  | The slide remains on screen | **Elke Beca:** you like, and you can see the graphic on the right-hand side |
| 00:14:53,700  | The slide remains on screen | **Elke Beca:** where you've got Victoria Park, we can see here the blue lines |
| 00:14:57,900  | The slide remains on screen | **Elke Beca:** represent the on-road, and the yellow lines represent the |
| 00:15:02,100  | The slide remains on screen | **Elke Beca:** off-road if you like, which traverses our footpath and all our |
| 00:15:09,500  | The slide remains on screen | **Elke Beca:** off-road pathways and from moving towards it through multimodal |
| 00:15:15,000  | The slide remains on screen | **Elke Beca:** an approach where we need to be able to determine accessibility |
| 00:15:20,000  | The slide remains on screen | **Elke Beca:** and performance across the broader transport system. |
| 00:15:22,800  | The slide remains on screen | **Elke Beca:** We need to be catching the footprints for the backbone. |
| 00:15:23,400  | The slide remains on screen | **Elke Beca:** If you like. |
| 00:15:26,500  | The slide remains on screen | **Elke Beca:** All our paths of movement. |
| 00:15:29,600  | The slide remains on screen | **Elke Beca:** So, this is the approach that we were thinking of at the |
| 00:15:34,300  | The slide remains on screen | **Elke Beca:** moment. Is that quasi on-road and off-road approach |
| 00:15:42,000 | A new slide fades in. It reads:"*Mode Enables*"There are icons representing pedestrian (off road), general traffic (on road), cycling (on & off-road), freight (on-road), micro mobility (on & off road), public transport (on road), rail (off road) and ferry (on road).A sentence at the bottom of the slide reads:"*Scalable as new modes come online.*" | **Elke Beca:** (next slide please) And then the third critical aspect that we're looking |
| 00:15:47,200  | The slide remains on screen | **Elke Beca:** to enable within this network model is enabling modes, and |
| 00:15:49,000  | The slide remains on screen | **Elke Beca:** this slide. |
| 00:15:52,400  | The slide remains on screen | **Elke Beca:** Just give her a representation of the modes that were considering |
| 00:15:57,400  | The slide remains on screen | **Elke Beca:** now, the coloured modes on there are directly linked |
| 00:15:59,500  | The slide remains on screen | **Elke Beca:** to ONF and we have |
| 00:16:03,800  | The slide remains on screen | **Elke Beca:** had some early discussions with ONF and are staying very |
| 00:16:07,600  | The slide remains on screen | **Elke Beca:** aligned with the work that they're doing and around |
| 00:16:09,900  | The slide remains on screen | **Elke Beca:** the mode layers |
| 00:16:10,800  | The slide remains on screen | **Elke Beca:** that is |
| 00:16:13,100  | The slide remains on screen | **Elke Beca:** one of the stages of their development. |
| 00:16:20,200  | The slide remains on screen | **Elke Beca:** We are working hand in hand in this, I guess as |
| 00:16:24,600  | The slide remains on screen | **Elke Beca:** we move down at pathway because the needs both from an ONF perspective, |
| 00:16:28,100  | The slide remains on screen | **Elke Beca:** and what we’re looking to be able to enable through the network |
| 00:16:30,000  | The slide remains on screen | **Elke Beca:** model directly, align. |
| 00:16:35,400  | The slide remains on screen | **Elke Beca:** We have added a couple of additional modes at micro-mobility, |
| 00:16:39,800  | The slide remains on screen | **Elke Beca:** rail and ferry, which are very applicable on certain networks |
| 00:16:42,700  | The slide remains on screen | **Elke Beca:** and as mentioned |
| 00:16:47,300  | The slide remains on screen | **Elke Beca:** we were just in the space recognise that this may expand |
| 00:16:51,000  | The slide remains on screen | **Elke Beca:** overtime so we need to ensure that whatever is put forward |
| 00:16:55,600  | The slide remains on screen | **Elke Beca:** is scalable as most change and new modes come online |
| 00:17:03,400 | A new slide fades in. It reads:"*Route by Mode (Cycling Options)*"There is an image that is labelled "On-Road", and it represents a cyclist route from A to B on a road network | **Elke Beca:** (next slide please) This graphic is giving |
| 00:17:07,000  | The slide remains on screen | **Elke Beca:** a little bit of a visual representation of what some of |
| 00:17:09,777  | The slide remains on screen | **Elke Beca:** the types of Analytics that we can employ once we are on |
| 00:17:11,300  | The slide remains on screen | **Elke Beca:** that spatial platform. |
| 00:17:17,400  | The slide remains on screen | **Elke Beca:** This is just looking at route navigation routability from |
| 00:17:23,900  | The slide remains on screen | **Elke Beca:** point A to point B, which can be enabled by mode and this |
| 00:17:27,599  | The slide remains on screen | **Elke Beca:** is looking at a single network, so just the on-road network |
| 00:17:34,700 | A new slide fades in. It reads:"*Route by Mode (Cycling Options)*"The image is like the previous slide, but it is now labelled "Off-Road" and depicts a cyclist route from A to B; now, the route is on the off-road network. | **Elke Beca:** how a cyclist could travel from point A to point B. |
| 00:17:40,900  | The slide remains on screen | **Elke Beca:** If we overlay our multi-network approach so recognise |
| 00:17:45,000  | The slide remains on screen | **Elke Beca:** that we do have the ability to travel off-road, we can |
| 00:17:50,400  | The slide remains on screen | **Elke Beca:** run a similar set of analytics over the off-road only network |
| 00:17:54,200  | The slide remains on screen | **Elke Beca:** if you'd like to see how would a cyclist travel from A to |
| 00:17:58,088 | A new slide fades in. It reads:"*Route by Mode (Cycling Options)*"The image is like the previous slide, but it is now labelled "Quickest Route" and depicts a cyclist route from A to B, however now the route is both on and off the road network. | **Elke Beca:** B on an off-road, but ultimately where |
| 00:17:59,400  | The slide remains on screen | **Elke Beca:** we want to get |
| 00:18:06,400  | The slide remains on screen | **Elke Beca:** to is whilst we're thinking on-road/off-road from a performance |
| 00:18:10,500  | The slide remains on screen | **Elke Beca:** and an interaction perspective of how a user would use our |
| 00:18:14,700  | The slide remains on screen | **Elke Beca:** transport system recognises that it is One Network but |
| 00:18:17,600  | The slide remains on screen | **Elke Beca:** the paths that they travel may be different this particular |
| 00:18:22,900  | The slide remains on screen | **Elke Beca:** example demonstrates the transition from an on-road or and |
| 00:18:26,500  | The slide remains on screen | **Elke Beca:** off-road back to an off-road network to |
| 00:18:28,700  | The slide remains on screen | **Elke Beca:** get from A to B & A quickest time. |
| 00:18:31,400  | The slide remains on screen | **Elke Beca:** So, what, I guess what? |
| 00:18:32,800  | The slide remains on screen | **Elke Beca:** This is just demonstrating |
| 00:18:35,300  | The slide remains on screen | **Elke Beca:** is what we  |
| 00:18:35,600  | The slide remains on screen | **Elke Beca:** envisage |
| 00:18:39,900  | The slide remains on screen | **Elke Beca:** might be some of the quick wins from the network model once |
| 00:18:42,700  | The slide remains on screen | **Elke Beca:** it's established is one being able to identify |
| 00:18:49,600  | The slide remains on screen | **Elke Beca:** how accessible our networks are by mode. |
| 00:18:53,200  | The slide remains on screen | **Elke Beca:** Where are constraints are where we don't have connectivity |
| 00:19:01,100  | The slide remains on screen | **Elke Beca:** and then start to run more advanced analytics modelling future scenario |
| 00:19:07,100  | The slide remains on screen | **Elke Beca:** testing the list goes on and on and on as we delve further |
| 00:19:10,200  | The slide remains on screen | **Elke Beca:** the data becomes richer, and we become more advanced without |
| 00:19:15,400  | The slide remains on screen | **Elke Beca:** using up the data to inform my future planning and investment |
| 00:19:19,400  | The slide remains on screen | **Elke Beca:** planning business case scenario testing so on and so forth, |
| 00:19:25,000  | The slide remains on screen | **Elke Beca:** so, there is a huge opportunity, but as David mentioned, baby steps |
| 00:19:28,900  | The slide remains on screen | **Elke Beca:** initially and as I mentioned that the first step for |
| 00:19:34,100  | The slide remains on screen | **Elke Beca:** us is ensuring that we get a complete footprint of the network |
| 00:19:39,700  | The slide remains on screen | **Elke Beca:** both where foot-traffic can go, and we're vehicle traffic |
| 00:19:46,400 | A new slide fades in. It reads:"*Recap*"There is an image in the top left corner of the screen. It depicts a 2D linear network | **Elke Beca:** and go and all the modes in between (next slide, please) |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** So just a quick recap of the kind of the three |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** key transition steps that were looking at with the network |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** model approach that we’re proposing I'm so the first is moving |
| 00:19:50,100  | A new image appears in the top right of the screen. An arrow points to this new image from the first. It represents the 3D spatial network. | **Elke Beca:** to a spatial platform. |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** So that's moving from 2D linear across to a 3D spatial representation, |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** and I guess the first step is Road centrelines to Road centrelines |
| 00:19:50,100  | A new image representing a multi-network appears at the bottom left of the screen. An arrow points from the 3D spatial network to the new image. | **Elke Beca:** the next step. |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** Is that transition to reflect the broader footprint of our |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** our movement parts if you like, which includes our off-road |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** representations of the multi-network approach, which whilst |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** we call it multi-network from a functionality and performance |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** and analytic perspective acts as a single because we have |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** many modes that will traverse from one network to another |
| 00:19:50,100  | A new image representing a multimodal network appears at the bottom right of the screen. An arrow points from the multil-network to the new image. | **Elke Beca:** and that connectivity will be embedded within the model, |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** and then the final aspect, I guess is it comes into fruition |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** is the multimodal aspect, so being able to use our network |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** model to understand performance to build estate. |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** Connectivity and accessibility by a mode which will open the |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** doors to the likes of where ONF |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** are heading with performance monitoring and management |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** of the network through |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** the soaps will become enabled as we have a clear representation |
| 00:19:50,100  | The slide remains on screen | **Elke Beca:** of accessibility by mode and can plug information into our |
| 00:21:28,400 | A new slide fades in. It reads:"*Alignment with ONF*"There is a screenshot depicting Route Navigation (location accuracy to navigate from point A to point B by mode – directions) in a GIS application | **Elke Beca:** network by mode (next slide, please) |
| 00:21:35,400  | The slide remains on screen | **Elke Beca:** So just very quickly touching on that inter-relationship |
| 00:21:37,000  | The slide remains on screen | **Elke Beca:** that we have with ONF. |
| 00:21:42,300  | The slide remains on screen | **Elke Beca:** And as I mentioned, was still in relatively early stages, so there |
| 00:21:46,200  | The slide remains on screen | **Elke Beca:** is a lot of collaboration in co thinking that still needs |
| 00:21:47,100  | The slide remains on screen | **Elke Beca:** to be done in the space. |
| 00:21:51,300  | The slide remains on screen | **Elke Beca:** This is just a very early representation of transitioning ONF |
| 00:21:58,800  | The slide remains on screen | **Elke Beca:** to a 3D polyline, but what we envisage going |
| 00:22:03,400  | The slide remains on screen | **Elke Beca:** forward, I mentioned our initial thinking is that the network |
| 00:22:09,200  | The slide remains on screen | **Elke Beca:** model will enable the multimode or the modal layers to inform |
| 00:22:13,100  | The slide remains on screen | **Elke Beca:** ONF, and we think that ONF will potentially sit |
| 00:22:14,900  | The slide remains on screen | **Elke Beca:** over the top as a zone. |
| 00:22:20,300  | The slide remains on screen | **Elke Beca:** But I guess this is just to introduce or inform |
| 00:22:24,300  | The slide remains on screen | **Elke Beca:** that we are working closely alongside ONF to ensure that |
| 00:22:29,100  | The slide remains on screen | **Elke Beca:** collectively we're aligning with our thinking and |
| 00:22:30,600  | The slide remains on screen | **Elke Beca:** ultimately the solution |
| 00:22:37,368 | A new slide fades in. It reads:"*SummaryExisting Network ModelInforms and enables locational referencingProposed Network Model Performance: Interaction between customer and infrastructure.       Understand performance.Enable integration with Real-Time Data, transition to Digital TwinModes & Accessibility: What modes can go where and when. Scalable for future modes and performance requirements.*"The image used previously depicting the network, assets, lifecycle, and operational layers is on the right-hand side of the screen. | **Elke Beca:** that's presented to industry (next slide, please) |
| 00:22:44,000  | The slide remains on screen | **Elke Beca:** Just in summary, before moving to some Q&A just recapping |
| 00:22:51,100  | The slide remains on screen | **Elke Beca:** where we're at. We're transitioning away from an asset-centric |
| 00:22:54,700  | The slide remains on screen | **Elke Beca:** focus where our network model has been in place to |
| 00:22:59,300  | The slide remains on screen | **Elke Beca:** inform us where our assets are so that we can maintain them, |
| 00:23:07,100  | The slide remains on screen | **Elke Beca:** and look after them to a performance-centric view where the focus |
| 00:23:12,600  | The slide remains on screen | **Elke Beca:** is around the performance of the infrastructure and how our users |
| 00:23:16,800  | The slide remains on screen | **Elke Beca:** or the public interact with the infrastructure and vice |
| 00:23:20,400  | The slide remains on screen | **Elke Beca:** versa, so what impact infrastructure has on the performance |
| 00:23:25,000  | The slide remains on screen | **Elke Beca:** or the use of the network by the people, the general public. |
| 00:23:33,900  | The slide remains on screen | **Elke Beca:** So, as I guess as we progress, as I mentioned right at the |
| 00:23:35,300  | The slide remains on screen | **Elke Beca:** beginning there. |
| 00:23:42,300  | The slide remains on screen | **Elke Beca:** We were trying to limit the complexity of this so that we |
| 00:23:46,100  | The slide remains on screen | **Elke Beca:** can have a seamless transition to this new approach whilst |
| 00:23:50,400  | The slide remains on screen | **Elke Beca:** still enabling enough complexity or scalability that |
| 00:23:55,300  | The slide remains on screen | **Elke Beca:** those who want to run fast have the flexibility within the |
| 00:24:02,900  | The slide remains on screen | **Elke Beca:** standard to jump ahead. So, we envisage that some may be quite |
| 00:22:44,001 | The slide remains on screen | **Elke Beca:** happy to migrate to a 3D spatial approach, while others |
| 00:22:51,101 | The slide remains on screen | **Elke Beca:** may want to move quite quickly to utilising the capability |
| 00:22:54,701 | The slide remains on screen | **Elke Beca:** of real-time data, and that quick transition towards digital |
| 00:22:59,301 | The slide remains on screen | **Elke Beca:** twin and that those are all aspects are inherent within the |
| 00:23:07,101 | The slide remains on screen | **Elke Beca:** I guess the structure that we’re putting forward critical |
| 00:23:12,601 | The slide remains on screen | **Elke Beca:** to critical aspects are around ensuring that its mode enabled |
| 00:23:16,801 | The slide remains on screen | **Elke Beca:** so not only roads but also the broader footprint of the network |
| 00:23:20,401 | The slide remains on screen | **Elke Beca:** is catered for which covers off the places that the different |
| 00:23:25,001 | The slide remains on screen | **Elke Beca:** modes will travel, so understanding what moves can go where |
| 00:23:33,901 | The slide remains on screen | **Elke Beca:** and when and ensuring that it's scalable for we're not only |
| 00:23:35,301 | The slide remains on screen | **Elke Beca:** for future modes but future performance requirements. |
| 00:25:04,500 | A new slide fades in. It reads:"*Q&APlease write your questions in the Q & A box.*" | **Elke Beca:** So that's really in a nutshell kind of where we're at with |
| 00:25:07,500  | The slide remains on screen | **Elke Beca:** the network model, so I will head back to you. |
| 00:25:08,400  | The slide remains on screen | **Elke Beca:** Thank you. |
| 00:25:10,700  | The slide remains on screen | **Cath Jacobs:** All right |
| 00:25:14,000  | The slide remains on screen | **Cath Jacobs:** Thanks very much for the excellent presentation and David |
| 00:25:18,100  | The slide remains on screen | **Cath Jacobs:** and Jeremy. If the speakers could turn on their cameras, please. |
| 00:25:22,600  | The slide remains on screen | **Cath Jacobs:** I've got several questions here, so I tried to feel these |
| 00:25:27,000  | The slide remains on screen | **Cath Jacobs:** out as possible so with this thing of the proposed framework |
| 00:25:30,900  | The slide remains on screen | **Cath Jacobs:** and the concept has there been any thought (this is a question |
| 00:25:35,100  | The slide remains on screen | **Cath Jacobs:** from Kevin) has there been in thought about setting up a method |
| 00:25:37,500  | The slide remains on screen | **Cath Jacobs:** to record safety on our cycle networks. |
| 00:25:40,100  | The slide remains on screen | **Cath Jacobs:** Will there be multiple serious injury crashes? |
| 00:25:43,200  | The slide remains on screen | **Cath Jacobs:** Maybe hand this one over to David to then handover over to Elke |
| 00:25:53,800  | The slide remains on screen | **David Darwin:** One of the fundamental features of this proposal is that we represent the intended |
| 00:25:57,100  | The slide remains on screen | **David Darwin:** performance without transport networks and measure and reflect |
| 00:25:59,200  | The slide remains on screen | **David Darwin:** the actual performance and the gap and, therefore, potentially |
| 00:26:03,900  | The slide remains on screen | **David Darwin:** the need to close that gap with some activities, so whilst |
| 00:26:06,200  | The slide remains on screen | **David Darwin:** I don't know that we have done that now; the intent |
| 00:26:14,235  | The slide remains on screen | **David Darwin:** things such as that. You may want to add to that Elke? |
| 00:26:19,600  | The slide remains on screen | **Elke Beca:** I guess the answer is |
| 00:26:24,000  | The slide remains on screen | **Elke Beca:** no, we haven't explicitly thought at this level, but certainly |
| 00:26:30,600  | The slide remains on screen | **Elke Beca:** this is the type of analysis that will be enabled with a |
| 00:26:34,400  | The slide remains on screen | **Elke Beca:** part for moving to a special platform being able |
| 00:26:42,000  | The slide remains on screen | **Elke Beca:** to draw in performance data or characteristic data to model |
| 00:26:45,400  | The slide remains on screen | **Elke Beca:** to predict to look forward in terms of the performance of |
| 00:26:49,900  | The slide remains on screen | **Elke Beca:** the network and interaction, so no, we haven't necessarily |
| 00:26:54,800  | The slide remains on screen | **Elke Beca:** thought through that specific case study. |
| 00:26:57,600  | The slide remains on screen | **Elke Beca:** I think what we would like to do at this stage is to gather. |
| 00:26:59,100  | The slide remains on screen | **Elke Beca:** What are these? |
| 00:27:03,600  | The slide remains on screen | **Elke Beca:** User stories, use case studies that we do when we should |
| 00:27:06,600  | The slide remains on screen | **Elke Beca:** be thinking about it so that we can start to embed and ensure |
| 00:27:10,700  | The slide remains on screen | **Elke Beca:** that these aspects are catered for such a great question. |
| 00:27:13,890  | The slide remains on screen | **Cath Jacobs:** Thanks. |
| 00:27:14,500  | The slide remains on screen | **Cath Jacobs:** Great |
| 00:27:19,200  | The slide remains on screen | **Cath Jacobs:** I just got a one-line question here from Felix, who will own |
| 00:27:21,700  | The slide remains on screen | **Cath Jacobs:** the data? so I guess |
| 00:27:23,677  | The slide remains on screen | **Cath Jacobs:** I'll throw that open to everyone |
| 00:27:29,700  | The slide remains on screen | **David Darwin:** A couple of things, data is owned by those who have bought |
| 00:27:32,800  | The slide remains on screen | **David Darwin:** it under their commercial arrangements, but what we want |
| 00:27:34,900  | The slide remains on screen | **David Darwin:** to do is enabled means of sharing |
| 00:27:37,800  | The slide remains on screen | **David Darwin:** non-commercial non-private data irrespective of ownership. |
| 00:27:41,100  | The slide remains on screen | **David Darwin:** Ownership, we would hope is responsible for keeping it |
| 00:27:44,900  | The slide remains on screen | **David Darwin:** current. That's where we like to go with this. |
| 00:27:50,900  | The slide remains on screen | **David Darwin:** We haven't sorted out all the ins and outs of IP relationships |
| 00:27:53,000  | The slide remains on screen | **David Darwin:** for every bit of data, but this is a platform |
| 00:27:56,200  | The slide remains on screen | **David Darwin:** sharing data across New Zealand transport networks, |
| 00:27:59,100  | The slide remains on screen | **David Darwin:** which are contiguous across whoever administers them. |
| 00:28:02,100  | The slide remains on screen | **David Darwin:** Our customers don't see administrative boundaries, their |
| 00:28:05,600  | The slide remains on screen | **David Darwin:** data should be contiguous and continuous, and publicly |
| 00:28:13,400  | The slide remains on screen | **David Darwin:** available given that transport networks in the main paid for by tax. |
| 00:28:20,323  | The slide remains on screen | **David Darwin:** Anybody else got anything to add to that? |
| 00:28:22,600  | The slide remains on screen | **David Darwin:** Perhaps we can move on to the next question? |
| 00:28:27,100  | The slide remains on screen | **Cath Jacobs:** Ok, the next question. This is a question for Jeremy. “Are we missing |
| 00:28:31,100  | The slide remains on screen | **Cath Jacobs:** the New Zealand geospatial strategy, which is the National |
| 00:28:36,567  | The slide remains on screen | **Cath Jacobs:** geospatial foundations for national digital infrastructure?” |
| 00:28:37,800  | The slide remains on screen | **Jeremy Gulson:** Are we missing it? |
| 00:28:44,898  | The slide remains on screen | **Cath Jacobs:** Yes, so not included. |
| 00:28:47,926  | The slide remains on screen | **Jeremy Gulson:** I can't answer that, David. You might be able to answer? |
| 00:28:50,098  | The slide remains on screen | **Jeremy Gulson:** More in terms of how it's connected |
| 00:28:55,147  | The slide remains on screen | **Jeremy Gulson:** back to the geo spatial industry. |
| 00:28:59,100  | The slide remains on screen | **Jeremy Gulson:** I guess what I can say, also touching on the previous question |
| 00:29:01,500  | The slide remains on screen | **Jeremy Gulson:** You know this is a collaborative effort. |
| 00:29:05,300  | The slide remains on screen | **Jeremy Gulson:** So, it needs to have quite a lot of buy-in from the RCAs |
| 00:29:06,500  | The slide remains on screen | **Jeremy Gulson:** and from government. |
| 00:29:09,600  | The slide remains on screen | **Jeremy Gulson:** I know we are as an agency |
| 00:29:14,500  | The slide remains on screen | **Jeremy Gulson:** are now looking to take more of a leadership role in |
| 00:29:17,000  | The slide remains on screen | **Jeremy Gulson:** the space, particularly in terms of multimodal. |
| 00:29:21,700  | The slide remains on screen | **Jeremy Gulson:** So, so, I guess we're part of this. |
| 00:29:26,000  | The slide remains on screen | **Jeremy Gulson:** So, looking to take more leadership role in the space right so |
| 00:29:28,900  | The slide remains on screen | **Jeremy Gulson:** so, to help support build these networks and things |
| 00:29:32,400  | The slide remains on screen | **Jeremy Gulson:** so yeah, that's kind of all I can say that. |
| 00:29:36,100  | The slide remains on screen | **David Darwin:** One of the priorities we've been chasing down here |
| 00:29:40,300  | The slide remains on screen | **David Darwin:**  is, of course, to be able to plan and deliver services |
| 00:29:43,400  | The slide remains on screen | **David Darwin:** on transport networks for our customers, and that's a core |
| 00:29:46,800  | The slide remains on screen | **David Darwin:** transport element, and this is a better Transport data set. |
| 00:29:48,000  | The slide remains on screen | **David Darwin:** But of course, |
| 00:29:50,731  | The slide remains on screen | **David Darwin:** It must fit in with the other spatial data across |
| 00:29:59,100  | The slide remains on screen | **David Darwin:** New Zealand’s many functions. |
| 00:30:03,300  | The slide remains on screen | **Cath Jacobs:** Question from Warwick what about public transport on road, |
| 00:30:09,321  | The slide remains on screen | **Cath Jacobs:** which is rail off-road? So, asking is rail Off-Road  |
| 00:30:13,748  | The slide remains on screen | **David Darwin:** Yes, in the main rail is off-road |
| 00:30:17,700  | The slide remains on screen | **David Darwin:** I suppose, perhaps, there are still some shared bridges across |
| 00:30:20,700  | The slide remains on screen | **David Darwin:** the country where they are two routes coincide, but the |
| 00:30:24,000  | The slide remains on screen | **David Darwin:** thought is that and then and in the way we describe off-road |
| 00:30:25,400  | The slide remains on screen | **David Darwin:** on-road is the concept of the moment. |
| 00:30:31,100  | The slide remains on screen | **David Darwin:** It's off-road, the on-road/off-road a way of collecting up |
| 00:30:36,100  | The slide remains on screen | **David Darwin:** those things which travel down the carriageway now those |
| 00:30:39,300  | The slide remains on screen | **David Darwin:** things, which travel through parks both wish things, which |
| 00:30:44,600  | The slide remains on screen | **David Darwin:** travel down rail corridor. So, the distinction is not as important |
| 00:30:48,389  | The slide remains on screen | **David Darwin:** as the collection of both. |
| 00:30:56,400  | The slide remains on screen | **Elke Beca:** Absolutely. That's exactly it, and even from an underlying perspective within the |
| 00:30:59,000  | The slide remains on screen | **Elke Beca:** the standard that that's been put forward. |
| 00:31:04,300  | The slide remains on screen | **Elke Beca:** there's a direct connection between the two networks. |
| 00:31:08,500  | The slide remains on screen | **Elke Beca:** If you like, it's more just a way of representing them |
| 00:31:14,000  | The slide remains on screen | **Elke Beca:** kind of in your mind, or visually, like David said, moving |
| 00:31:16,400  | The slide remains on screen | **Elke Beca:** away from just everything tethered to the middle of a road |
| 00:31:21,700  | The slide remains on screen | **Elke Beca:** to having you know bits of the footprint that extend |
| 00:31:26,200  | The slide remains on screen | **Elke Beca:** well, well outside, so it's more a way of describing it as |
| 00:31:31,000  | The slide remains on screen | **Elke Beca:** opposed to how it will function and interact. |
| 00:31:34,300  | The slide remains on screen | **David Darwin:** Yeah, I did like the in one of your slides, |
| 00:31:35,689  | The slide remains on screen | **David Darwin:** Elke, describing |
| 00:31:40,087  | The slide remains on screen | **David Darwin:** ferries as being off-road. |
| 00:31:44,325  | The slide remains on screen | **David Darwin:** It's land transport, as defined in the Land Transport Act |
| 00:31:50,812  | The slide remains on screen | **Cath Jacobs:** I think Warrick was referring to public transport as rail. |
| 00:31:53,812  | The slide remains on screen | **David Darwin:** When we think about rail, we're thinking about |
| 00:31:58,343  | The slide remains on screen | **David Darwin:** both its freight function and its commute function. |
| 00:32:00,650  | The slide remains on screen | **David Darwin:** Both |
| 00:32:01,900  | The slide remains on screen | **Cath Jacobs:** Great. |
| 00:32:03,400  | The slide remains on screen | **Cath Jacobs:** Ok, a question |
| 00:32:07,400  | The slide remains on screen | **Cath Jacobs:** we do get asked quite a lot. “Is the intention to retain road |
| 00:32:12,400  | The slide remains on screen | **Cath Jacobs:** centrelines even though modern geospatial systems could |
| 00:32:17,047  | The slide remains on screen | **Cath Jacobs:** make centrelines obsolete?” |
| 00:32:20,270  | The slide remains on screen | **David Darwin:** It depends on the use you're making of them. |
| 00:32:22,231  | The slide remains on screen | **David Darwin:** What we're saying is, here is a means of |
| 00:32:24,232  | The slide remains on screen | **David Darwin:** describing a function of a road |
| 00:32:29,826  | The slide remains on screen | **David Darwin:** If you also wish to provide the measurement references  |
| 00:32:32,600  | The slide remains on screen | **David Darwin:** as was once the reason for having centrelines in RAMM, |
| 00:32:35,000  | The slide remains on screen | **David Darwin:** in 1985, only 35 years ago |
| 00:32:40,600  | The slide remains on screen | **David Darwin:** It's perfectly ok, but in a sense, there are now many uses |
| 00:32:44,500  | The slide remains on screen | **David Darwin:** of notional centrelines, and we're picking up the function |
| 00:32:48,200  | The slide remains on screen | **David Darwin:** of the network noting that our measure these days does not |
| 00:32:52,896  | The slide remains on screen | **David Darwin:** rely on offsets from the centreline or along a route position.  |
| 00:32:57,904  | The slide remains on screen | **David Darwin:** Locating assets need not be done from a centreline. |
| 00:32:59,825  | The slide remains on screen | **David Darwin:** They still can be. |
| 00:33:03,900  | The slide remains on screen | **David Darwin:** Having a network model allows us to pick up performance and |
| 00:33:07,646  | The slide remains on screen | **David Darwin:** connectivity and 3D spatial and analytics. |
| 00:33:12,552  | The slide remains on screen | **David Darwin:** Perhaps you want to add something to that, Elke? |
| 00:33:14,400  | The slide remains on screen | **Elke Beca:** I think you've pretty well covered it. |
| 00:33:18,700  | The slide remains on screen | **Elke Beca:** I guess it comes down to how much data |
| 00:33:20,700  | The slide remains on screen | **Elke Beca:** do you want to continue to maintain? |
| 00:33:27,100  | The slide remains on screen | **Elke Beca:** But the intent here would be that you will not let the transition |
| 00:33:30,500  | The slide remains on screen | **Elke Beca:** to the AMDS network model approach. |
| 00:33:33,300  | The slide remains on screen | **Elke Beca:** You wouldn't be losing anything that you currently have with |
| 00:33:34,100  | The slide remains on screen | **Elke Beca:** your centrelines. |
| 00:33:39,300  | The slide remains on screen | **Elke Beca:** You would still have the representation of what the centreline |
| 00:33:45,400  | The slide remains on screen | **Elke Beca:** provides currently anyway, so you know, simplifying, but also |
| 00:33:49,255  | The slide remains on screen | **Elke Beca:** expanding out. |
| 00:33:52,995  | The slide remains on screen | **Cath Jacobs:** Thank you question here from Sean  |
| 00:34:00,473  | The slide remains on screen | **Cath Jacobs:** Will there be a way to use past data to establish trends? |
| 00:34:05,800  | The slide remains on screen | **David Darwin:** The intent we go live with AMDS is to bring across data. |
| 00:34:09,699  | The slide remains on screen | **David Darwin:** So yes, this is the intent. |
| 00:34:13,000  | The slide remains on screen | **David Darwin:** We are expecting at the stage to migrate data. |
| 00:34:19,199  | The slide remains on screen | **David Darwin:** Not fill gaps in it or change its nature, but to load it into the |
| 00:34:22,347  | The slide remains on screen | **David Darwin:** new AMDS Model, so the history is still maintained. |
| 00:34:27,748  | The slide remains on screen | **David Darwin:** So yes. |
| 00:34:31,000  | The slide remains on screen | **Cath Jacobs:** I've got her question here from Hamid So very exciting. |
| 00:34:39,607  | The slide remains on screen | **Cath Jacobs:** And how are shared zones coded in terms of crossing opportunities? |
| 00:34:43,414  | The slide remains on screen | **David Darwin:** That's your game, a very technical question, Elke. |
| 00:34:46,100  | The slide remains on screen | **Elke Beca:** That's very technical. |
| 00:34:47,500  | The slide remains on screen | **Elke Beca:** Sorry, was the question around |
| 00:34:51,500  | The slide remains on screen | **Elke Beca:** the transition between the networks, the on-road, |
| 00:34:55,699  | The slide remains on screen | **Elke Beca /** **Cath Jacobs:** the off-road? Yes, how are shared zones coded? |
| 00:34:58,900  | The slide remains on screen | **Cath Jacobs:** Yes, in terms of crossing opportunities. |
| 00:35:03,100  | The slide remains on screen | **Elke Beca:** So that will come down ultimately to the data set and the |
| 00:35:08,500  | The slide remains on screen | **Elke Beca:** how well established the data set is what we have found, |
| 00:35:11,300  | The slide remains on screen | **Elke Beca:** looking at the off-road data |
| 00:35:12,000  | The slide remains on screen | **Elke Beca:** and one of the reasons |
| 00:35:16,500  | The slide remains on screen | **Elke Beca:** we haven't settled on running with it is around footpaths. |
| 00:35:22,200  | The slide remains on screen | **Elke Beca:** The level of connectivity with the footpaths is not fantastic |
| 00:35:25,800  | The slide remains on screen | **Elke Beca:** now, so we have a lot of footpaths that |
| 00:35:29,500  | The slide remains on screen | **Elke Beca:** might start in the middle of a road or and 3 m before the |
| 00:35:33,500  | The slide remains on screen | **Elke Beca:** end of the road, so developing that off-road model that is |
| 00:35:37,700  | The slide remains on screen | **Elke Beca:** footpath related may have some challenges with it. |
| 00:35:43,400  | The slide remains on screen | **Elke Beca:** The other aspect is inherently people can go people can kind |
| 00:35:48,300  | The slide remains on screen | **Elke Beca:** of go anywhere, so those crossing points can exist anywhere, |
| 00:35:53,400  | The slide remains on screen | **Elke Beca:** so, we will undoubtedly need to establish an explicit ruleset in |
| 00:35:58,900  | The slide remains on screen | **Elke Beca:** terms of where the model will allow or provide. |
| 00:36:03,900  | The slide remains on screen | **Elke Beca:** Crossing places for the connectivity not only between the |
| 00:36:10,053  | The slide remains on screen | **Elke Beca:** the on-road and off-road Network but also within the off-road network |
| 00:36:12,700  | The slide remains on screen | **Elke Beca:** So yes, what we’re thinking through and there are |
| 00:36:19,200  | The slide remains on screen | **Elke Beca:** a lot of challenges to overcome, but certainly making some  |
| 00:36:22,600  | The slide remains on screen | **Elke Beca:** good progress, and the data that we've been working with |
| 00:36:24,500  | The slide remains on screen | **Elke Beca:** has demonstrated it's doable. |
| 00:36:30,000  | The slide remains on screen | **Elke Beca:** You know, some of the scales of complexity increase with |
| 00:36:39,384  | The slide remains on screen | **Elke Beca:** some of the data quality your integrity are limiting factors. |
| 00:36:43,010  | The slide remains on screen | **Cath Jacobs:** Great, thank you. Another question for you. |
| 00:36:46,100  | The slide remains on screen | **Cath Jacobs:** Elke, has there been any thoughts around the Lane level network? |
| 00:36:51,400  | The slide remains on screen | **Cath Jacobs:** i.e., individual lane level definition, direction, connections, etcetera to cater |
| 00:36:54,649  | The slide remains on screen | **Cath Jacobs:** for things like connected autonomous vehicles?  |
| 00:37:01,700  | The slide remains on screen | **Elke Beca:** So, I guess we've been around with the debate on whether Lane network should |
| 00:37:06,900  | The slide remains on screen | **Elke Beca:** reflect Lane, and we've had a lot of discussions with various |
| 00:37:11,300  | The slide remains on screen | **Elke Beca:** groups with industry around this our initial thinking |
| 00:37:15,800  | The slide remains on screen | **Elke Beca:** at this stage for the base standard is that it will not be |
| 00:37:17,500  | The slide remains on screen | **Elke Beca:** at a Lane level though. |
| 00:37:20,900  | The slide remains on screen | **Elke Beca:** We will realise that for some networks. |
| 00:37:25,000  | The slide remains on screen | **Elke Beca:** That will be a minimum requirement, and that we expect that |
| 00:37:25,600  | The slide remains on screen | **Elke Beca:** some networks. |
| 00:37:31,200  | The slide remains on screen | **Elke Beca:** Probably will expand the network model to include a lane |
| 00:37:37,300  | The slide remains on screen | **Elke Beca:** representation, but the other aspects that we've kind |
| 00:37:41,000  | The slide remains on screen | **Elke Beca:** of coming to a conclusion is that the lane representation |
| 00:37:46,200  | The slide remains on screen | **Elke Beca:** is essential at the operational level |
| 00:37:52,600  | The slide remains on screen | **Elke Beca:** so, life cycle and managements of the asset aspect, so we |
| 00:37:58,500  | The slide remains on screen | **Elke Beca:** do envisage, even if you'd do run with the minimum approach |
| 00:38:02,600  | The slide remains on screen | **Elke Beca:** a single centreline if you like for the road the |
| 00:38:06,500  | The slide remains on screen | **Elke Beca:** most likely at an operational level within the standard reflect |
| 00:38:10,600  | The slide remains on screen | **Elke Beca:** lanes for forwarding programming and so on and so for so we |
| 00:38:15,200  | The slide remains on screen | **Elke Beca:** envisage there may be different scales or different levels that |
| 00:38:21,900  | The slide remains on screen | **Elke Beca:** this will be adopted at so probably to two aspects two layers. |
| 00:38:28,685  | The slide remains on screen | **Elke Beca:** that lines will be reflected her represented.  |
| 00:38:32,062  | The slide remains on screen | **Cath Jacobs:** Thanks, Elke. A question here, so |
| 00:38:38,277  | The slide remains on screen | **Cath Jacobs:** Will this integrate with the LINZ data source? |
| 00:38:42,329  | The slide remains on screen | **Cath Jacobs:** David, I'll hand that one to you. |
| 00:38:48,414  | The slide remains on screen | **David Darwin:** So, which data source at LINZ? |
| 00:38:52,335  | The slide remains on screen | **David Darwin:** CoreLogic's centreline model is used by some councils now |
| 00:38:54,200  | The slide remains on screen | **David Darwin:** and other councils use other centreline models |
| 00:38:58,000  | The slide remains on screen | **David Darwin:** We are hoping that we have one contiguous set using the  |
| 00:39:00,349  | The slide remains on screen | **David Darwin:** Asset Management Data Standard going forwards.  |
| 00:39:04,400  | The slide remains on screen | **David Darwin:** Given that our measurement standard is the same as that used by LINZ |
| 00:39:09,575  | The slide remains on screen | **David Darwin:** we expect no issues about merging data sets at all. |
| 00:39:15,100  | The slide remains on screen | **David Darwin:** You got something to add, Jeremy |
| 00:39:20,300  | The slide remains on screen | **Jeremy Gulson:** Ah, no. I think that would always have to be the endgame. |
| 00:39:22,700  | The slide remains on screen | **Jeremy Gulson:** I think in terms of availability |
| 00:39:26,400  | The slide remains on screen | **Jeremy Gulson:** or making it available to use because I guess I keep coming |
| 00:39:29,800  | The slide remains on screen | **Jeremy Gulson:** back to I guess that sort of collaborative notion, and |
| 00:39:33,000  | The slide remains on screen | **Jeremy Gulson:** this is not a sort of a do it, and we will follow sort of thing. |
| 00:39:36,500  | The slide remains on screen | **Jeremy Gulson:** We will follow kind of that is going to require a lot of |
| 00:39:40,100  | The slide remains on screen | **Jeremy Gulson:** work across the sector in, and you know LINZ can potentially |
| 00:39:49,165  | The slide remains on screen | **Jeremy Gulson:** help to be a conduit into the other parts of the other spatial sector. |
| 00:39:53,300  | The slide remains on screen | **Cath Jacobs:** Thank you for that. And as a note of the data standard, |
| 00:39:55,600  | The slide remains on screen | **Cath Jacobs:** which was part of something different a standard currently |
| 00:39:59,700  | The slide remains on screen | **Cath Jacobs:** working with LINZ in terms of developing the data standard and |
| 00:40:03,165  | The slide remains on screen | **Cath Jacobs:** the geospatial aspects. A question here from Anne |
| 00:40:15,738  | The slide remains on screen | **Cath Jacobs:** Is the number of people using the APT facility or passengers on a bus input for the model? |
| 00:40:19,700  | The slide remains on screen | **David Darwin:** That's more an element of the performance metrics |
| 00:40:22,200  | The slide remains on screen | **David Darwin:** that we would use as part of the asset management data standard, |
| 00:40:25,800  | The slide remains on screen | **David Darwin:** but you'd expect those metrics to be somewhere buses can |
| 00:40:30,300  | The slide remains on screen | **David Darwin:** go so when we starting to measure the performance of PT networks, |
| 00:40:31,900  | The slide remains on screen | **David Darwin:** yes, we would be expecting to be |
| 00:40:37,000  | The slide remains on screen | **David Darwin:** talking about throughput or packs kilometres on in like any |
| 00:40:40,000  | The slide remains on screen | **David Darwin:** other modes on a key measurement point for the performance |
| 00:40:40,700  | The slide remains on screen | **David Darwin:** of that network. |
| 00:40:44,400  | The slide remains on screen | **David Darwin:** So yes, but part of the purpose of having this framework, |
| 00:40:50,200  | The slide remains on screen | **David Darwin:** is that where services cross regional boundaries, you had |
| 00:40:54,700  | The slide remains on screen | **David Darwin:** a contiguous network so you can see trips end to end, and |
| 00:40:58,700  | The slide remains on screen | **David Darwin:** having an alignment between the performance, |
| 00:41:03,200  | The slide remains on screen | **David Darwin:** as sort of an after and network models and sort of the prediction |
| 00:41:06,600  | The slide remains on screen | **David Darwin:** of, say, benefits of a network or change and network |
| 00:41:10,200  | The slide remains on screen | **David Darwin:** service levels. So, the advantage of having an anywhere model |
| 00:41:14,400  | The slide remains on screen | **David Darwin:** uniform network model across the country is it provides a |
| 00:41:17,500  | The slide remains on screen | **David Darwin:** a common basis for the measuring success of services |
| 00:41:20,200  | The slide remains on screen | **David Darwin:** we provide whoever provides them with your agency. |
| 00:41:24,400  | The slide remains on screen | **David Darwin:** So yes, we expect performance metrics for any mode to be |
| 00:41:32,668  | The slide remains on screen | **David Darwin:** related to the roots on which we measure the performance metrics. |
| 00:41:35,268  | The slide remains on screen | **Cath Jacobs:** Great. We have a question here from Warwick. |
| 00:41:39,500  | The slide remains on screen | **Cath Jacobs:** Will the locations measured be accurate enough, e.g., recording of Polygon for |
| 00:41:42,292  | The slide remains on screen | **Cath Jacobs:** servicing your payment? |
| 00:41:47,959  | The slide remains on screen | **David Darwin:** That's a question of the asset management standard, perhaps |
| 00:41:49,942  | The slide remains on screen | **David Darwin:** and some extent the network model. |
| 00:41:56,000  | The slide remains on screen | **David Darwin:** We are intending to record both the measurement or |
| 00:41:58,000  | The slide remains on screen | **David Darwin:** the estimate of the measurement, and every measurement we |
| 00:42:02,000  | The slide remains on screen | **David Darwin:** take as an estimate of varying degrees of accuracy plus the means |
| 00:42:05,500  | The slide remains on screen | **David Darwin:** of measuring it, so a user of the data knows how accurate |
| 00:42:07,800  | The slide remains on screen | **David Darwin:** and reliable it is. |
| 00:42:13,500  | The slide remains on screen | **David Darwin:** So, when you can do a space where your sharing data. |
| 00:42:16,200  | The slide remains on screen | **David Darwin:** You don't just want to see the data; you want to know how much |
| 00:42:20,400  | The slide remains on screen | **David Darwin:** confidence you can have in it. And by sharing |
| 00:42:23,400  | The slide remains on screen | **David Darwin:** that we gain some of the benefits of having an Asset Management Data Standard |
| 00:42:27,200  | The slide remains on screen | **David Darwin:** and working across networks at our customers use transport |
| 00:42:30,129  | The slide remains on screen | **David Darwin:** services across networks. |
| 00:42:32,381  | The slide remains on screen | **David Darwin:** When you share data, you need to have confidence |
| 00:42:35,270  | The slide remains on screen | **David Darwin:** so, we measure reliability by the measurement method that's used |
| 00:42:36,761  | The slide remains on screen | **David Darwin:** and away we go. |
| 00:42:40,100  | The slide remains on screen | **David Darwin:** It's better to know what measurements accuracy you've got |
| 00:42:44,158  | The slide remains on screen | **David Darwin:** cos then you can work with the data that you see. |
| 00:42:48,700  | The slide remains on screen | **David Darwin:** In our definition of contractual supplier of data. |
| 00:42:52,200  | The slide remains on screen | **David Darwin:** We would set an expectation for accuracy, and depending on |
| 00:42:53,100  | The slide remains on screen | **David Darwin:** the type of the metric. |
| 00:42:54,200  | The slide remains on screen | **David Darwin:** we might set, yes |
| 00:42:58,700  | The slide remains on screen | **David Darwin:** we'd set a very stringent standard but acknowledging. |
| 00:43:03,800  | The slide remains on screen | **David Darwin:** going forwards, we all carry cell phones the like, different |
| 00:43:07,200  | The slide remains on screen | **David Darwin:** data, sources are coming on strength to our ability to  |
| 00:43:09,600  | The slide remains on screen | **David Darwin:** to control the accuracy of the data |
| 00:43:12,500  | The slide remains on screen | **David Darwin:** we now use is limited by where it comes from. |
| 00:43:14,600  | The slide remains on screen | **David Darwin:** We control the accuracy of that for that. |
| 00:43:19,100  | The slide remains on screen | **David Darwin:** We buy and accept the accuracy of that, which we have been |
| 00:43:23,500  | The slide remains on screen | **David Darwin:** given by others knowing the reliability is the most important thing |
| 00:43:27,000  | The slide remains on screen | **David Darwin:** and the AMDS intends to reveal that part of the meta |
| 00:43:30,679  | The slide remains on screen | **David Darwin:** data for any metrics. |
| 00:43:35,843  | The slide remains on screen | **Cath Jacobs:** Thanks, David. I've got an excellent question from Darren |
| 00:43:38,100  | The slide remains on screen | **Cath Jacobs:** We have a reasonably complex evaluation setup |
| 00:43:42,900  | The slide remains on screen | **Cath Jacobs:** based on our asset attributes. Changing attributes has a potentially |
| 00:43:45,000  | The slide remains on screen | **Cath Jacobs:** significant impact on the evaluation output. |
| 00:43:47,700  | The slide remains on screen | **Cath Jacobs:** Is there going to be any flexibility in what you're allowed |
| 00:43:50,700  | The slide remains on screen | **Cath Jacobs:** to keep the setup, or have you thought on the lines of lighting |
| 00:43:53,103  | The slide remains on screen | **Cath Jacobs:** valuations between councils? |
| 00:43:56,611  | The slide remains on screen | **David Darwin:** Mmm, a couple of things here  |
| 00:43:58,600  | The slide remains on screen | **David Darwin:** We've been talking today about |
| 00:44:04,100  | The slide remains on screen | **David Darwin:** the network model, which is in a sense of centreline, not the underlying |
| 00:44:06,900  | The slide remains on screen | **David Darwin:** asset so that having a network model doesn't necessarily |
| 00:44:12,500  | The slide remains on screen | **David Darwin:** itself change the representation of assets. The Asset Management Data standard might |
| 00:44:19,200  | The slide remains on screen | **David Darwin:** in some cases, do some of that but for the vast majority of |
| 00:44:25,400  | The slide remains on screen | **David Darwin:** value in the country sits with structures, pavement, surfaces |
| 00:44:29,000  | The slide remains on screen | **David Darwin:** and the data standard is very similar to that used in RAMM |
| 00:44:31,400  | The slide remains on screen | **David Darwin:** currently, so we don't expect many issues. |
| 00:44:32,300  | The slide remains on screen | **David Darwin:** going forwards. |
| 00:44:36,900  | The slide remains on screen | **David Darwin:** It's not for us to change the basis for evaluation of any |
| 00:44:41,700  | The slide remains on screen | **David Darwin:** one agency but you would expect that if we adopted a standard, |
| 00:44:44,900  | The slide remains on screen | **David Darwin:** and there is a fair degree of conformance across the country. |
| 00:44:48,600  | The slide remains on screen | **David Darwin:** then the confidence in any one dataset matching that will go |
| 00:44:55,400  | The slide remains on screen | **David Darwin:** up. I don't think is much scope that many conflicts with current |
| 00:44:58,500  | The slide remains on screen | **David Darwin:** things because the most value is in pavements, in structures and |
| 00:45:05,815  | The slide remains on screen | **David Darwin:** the data standard is pretty much why use the moment. |
| 00:45:08,591  | The slide remains on screen | **Cath Jacobs:** Got a question here from Jennifer  |
| 00:45:11,000  | The slide remains on screen | **Cath Jacobs:** Is the vision with the 3D spatial approach |
| 00:45:14,200  | The slide remains on screen | **Cath Jacobs:** to incorporate the stormwater drainage network in a 3D pipe |
| 00:45:18,200  | The slide remains on screen | **Cath Jacobs:** network as well and potentially water wastewater and utilities |
| 00:45:21,500  | The slide remains on screen | **Cath Jacobs:** networks or has this conversation helps with Three Waters |
| 00:45:23,822  | The slide remains on screen | **Cath Jacobs:** code of practice team? |
| 00:45:28,400  | The slide remains on screen | **David Darwin:** So, we've been thinking about we be working with the three |
| 00:45:32,000  | The slide remains on screen | **David Darwin:** Waters folk about how we work together to have a common model |
| 00:45:37,500  | The slide remains on screen | **David Darwin:** and Lincoln node model is common data sets, and we expect |
| 00:45:39,600  | The slide remains on screen | **David Darwin:** the commonality. |
| 00:45:44,000  | The slide remains on screen | **David Darwin:** that proposed for water, but also in use for our fibre |
| 00:45:46,500  | The slide remains on screen | **David Darwin:** on transport networks or power used on transport networks. |
| 00:45:53,400  | The slide remains on screen | **David Darwin:** The unique aspect for transport is the multimodal element |
| 00:45:54,400  | The slide remains on screen | **David Darwin:** and the routability element. |
| 00:45:57,800  | The slide remains on screen | **David Darwin:** There is a mix, there are other networks, but we do think |
| 00:45:58,600  | The slide remains on screen | **David Darwin:** the data structure |
| 00:46:02,400  | The slide remains on screen | **David Darwin:** is common with that of our technical partner groups |
| 00:46:04,300  | The slide remains on screen | **David Darwin:** Perhaps you want to extend that, Elke? |
| 00:46:09,200  | The slide remains on screen | **Elke Beca:** I just wanted to add so within that the drainage asset |
| 00:46:13,400  | The slide remains on screen | **Elke Beca:** I guess not necessarily network layer the asset layer we're |
| 00:46:18,400  | The slide remains on screen | **Elke Beca:** working with the three waters code of practice team to |
| 00:46:21,600  | The slide remains on screen | **Elke Beca:** ensure there's alignment, and we see that is a two-way |
| 00:46:25,300  | The slide remains on screen | **Elke Beca:** process, so there may be some updates to the three waters |
| 00:46:28,800  | The slide remains on screen | **Elke Beca:** code of practice as well, as adjustments, tweaks |
| 00:46:31,600  | The slide remains on screen | **Elke Beca:** to the AMDS approach so that there is alignment. |
| 00:46:38,400  | The slide remains on screen | **Elke Beca:** We haven't gone to the level of thinking about that the drainage |
| 00:46:41,700  | The slide remains on screen | **Elke Beca:** network if you like, but that's very much one of that the |
| 00:46:46,600  | The slide remains on screen | **Elke Beca:** first that we which see as a quick win or a beneficial |
| 00:46:49,200  | The slide remains on screen | **Elke Beca:** aspects. So probably is a proof-of-concept. |
| 00:46:53,700  | The slide remains on screen | **Elke Beca:** We haven't touched it and potentially in terms of the first |
| 00:46:57,900  | The slide remains on screen | **Elke Beca:** level of implementation will also not include it, but I do |
| 00:46:58,500  | The slide remains on screen | **Elke Beca:** like David |
| 00:47:04,300  | The slide remains on screen | **Elke Beca:** said that and power, ITS these other networks. |
| 00:47:11,100  | The slide remains on screen | **Elke Beca:** This model will be scalable to be able to implement the |
| 00:47:18,000  | The slide remains on screen | **Elke Beca:** same framework, so very applicable great. |
| 00:47:18,400  | The slide remains on screen | **Cath Jacobs:** Thank you. |
| 00:47:21,700  | The slide remains on screen | **Cath Jacobs:** We have a question here from Stewart will the data be |
| 00:47:26,100  | The slide remains on screen | **Cath Jacobs:** open and shareable, i.e., will we be able to extract the data in a format that |
| 00:47:29,700  | The slide remains on screen | **Cath Jacobs:** is consumable by multiple applications and not bound by a |
| 00:47:31,197  | The slide remains on screen | **Cath Jacobs:** single application? |
| 00:47:34,166  | The slide remains on screen | **David Darwin:** That is the intent. |
| 00:47:35,872  | The slide remains on screen | **David Darwin:** Absolutely. Shareable. |
| 00:47:37,700  | The slide remains on screen | **David Darwin:** But that's part of the working we want to do across the sector |
| 00:47:40,600  | The slide remains on screen | **David Darwin:** to do across the sector about and maintenance of the network |
| 00:47:43,700  | The slide remains on screen | **David Darwin:** model, and it's available to you to everybody and  |
| 00:47:47,300  | The slide remains on screen | **David Darwin:** how users can have confidence that is current whoever supplied |
| 00:47:51,400  | The slide remains on screen | **David Darwin:** complete whoever supplied it. So, it's part of the work yet to be done |
| 00:47:55,200  | The slide remains on screen | **David Darwin:** because this is so foundational to have it effectively |
| 00:47:58,500  | The slide remains on screen | **David Darwin:** open source. |
| 00:48:02,800  | The slide remains on screen | **Cath Jacobs:** Thank you question here from, quite a lot of questions question |
| 00:48:04,200  | The slide remains on screen | **Cath Jacobs:** here from Mazzi. |
| 00:48:06,500  | The slide remains on screen | **Cath Jacobs:** How do you consider bus routes in the network |
| 00:48:09,700  | The slide remains on screen | **Cath Jacobs:** They are part of the on-road at work, but they formed a whole |
| 00:48:11,952  | The slide remains on screen | **Cath Jacobs:** different network all together?  |
| 00:48:18,700  | The slide remains on screen | **David Darwin:** So, the expectation is that every link is described by what modes it can use |
| 00:48:24,400  | The slide remains on screen | **David Darwin:** the cat can use it and so unpacking that you can represent |
| 00:48:26,700  | The slide remains on screen | **David Darwin:** a network for any mode. |
| 00:48:32,400  | The slide remains on screen | **David Darwin / Elke Beca:** That's tagged against any network, and I guess just to expand |
| 00:48:36,000  | The slide remains on screen | **Elke Beca:** on that that that can go to the level of having constraints |
| 00:48:41,800  | The slide remains on screen | **Elke Beca:** restrictions by time of day and parts of the said network, |
| 00:48:47,200  | The slide remains on screen | **Elke Beca:** so, there is a wealth of flexibility of what information can |
| 00:48:47,900  | The slide remains on screen | **Elke Beca:** be in embedded. |
| 00:48:52,500  | The slide remains on screen | **Elke Beca:** If you have it, I guess the limitation is capturing that |
| 00:48:55,800  | The slide remains on screen | **Elke Beca:** data in the first place, but once you do know that it can |
| 00:49:05,151  | The slide remains on screen | **Elke Beca:** be embedded into the model and part of any future analysis |
| 00:49:11,600  | The slide remains on screen | **Cath Jacobs:** Fantastic. Question from Stuart Would the proposed framework also model |
| 00:49:15,800  | The slide remains on screen | **Cath Jacobs:** environmental impacts based on vehicle flow in mode splits |
| 00:49:18,900  | The slide remains on screen | **Cath Jacobs:** that that would help to assess network performance in terms |
| 00:49:22,905  | The slide remains on screen | **Cath Jacobs:** of climate change and targets? |
| 00:49:24,800  | The slide remains on screen | **Cath Jacobs:** So, what this kind of model and the  |
| 00:49:29,300  | The slide remains on screen | **Cath Jacobs:** associated AMDS will bring us a common analytics base |
| 00:49:32,900  | The slide remains on screen | **Cath Jacobs:** anywhere in New Zealand. And so, some of the networks that are being modelled |
| 00:49:38,300  | The slide remains on screen | **Cath Jacobs:** for Nitric oxide (NOx) emissions. But if you have a common data set across |
| 00:49:40,800  | The slide remains on screen | **Cath Jacobs:** the country, and then you can use the same analytics |
| 00:49:44,400  | The slide remains on screen | **Cath Jacobs:** anywhere, so the answer is yes this provides a basis for |
| 00:49:49,100  | The slide remains on screen | **Cath Jacobs:** analysing the potential impact of Transport by fuel source |
| 00:49:53,900  | The slide remains on screen | **Cath Jacobs:** or whatever it is across the country so that  |
| 00:49:54,500  | The slide remains on screen | **Cath Jacobs:** kind of thing |
| 00:49:58,500  | The slide remains on screen | **Cath Jacobs:** is why it is a common network model data standard |
| 00:50:04,700  | The slide remains on screen | **Cath Jacobs:** is so useful across the 68 RCAs across New Zealand, |
| 00:50:11,130  | The slide remains on screen | **Cath Jacobs:** It enables us to share analytics, to look at regional or inter-regional impacts |
| 00:50:16,200  | The slide remains on screen | **Cath Jacobs:** to do regional or inter-regional planning for multi modes, so this is |
| 00:50:20,700  | The slide remains on screen | **Cath Jacobs:** about common a common analytics base so we can gain insight |
| 00:50:22,100  | The slide remains on screen | **Cath Jacobs:** based on the data. |
| 00:50:26,297  | The slide remains on screen | **Cath Jacobs:** Rather than who has it. |
| 00:50:28,600  | The slide remains on screen | **Jeremy Gulson:** I can add something to that |
| 00:50:29,700  | The slide remains on screen | **Jeremy Gulson:** like you say |
| 00:50:34,100  | The slide remains on screen | **Jeremy Gulson:** You know for the examples that we might be looking at in |
| 00:50:37,800  | The slide remains on screen | **Jeremy Gulson:** terms of supporting those outcomes, right so you know we |
| 00:50:40,800  | The slide remains on screen | **Jeremy Gulson:** might be looking to see that we want to see an increase in |
| 00:50:44,000  | The slide remains on screen | **Jeremy Gulson:** patronage across the specific part of the city because |
| 00:50:47,100  | The slide remains on screen | **Jeremy Gulson:** we just invested all this money in it, and therefore a reduction |
| 00:50:47,800  | The slide remains on screen | **Jeremy Gulson:** in such & such. |
| 00:50:53,100  | The slide remains on screen | **Jeremy Gulson:** So yeah, I think it's a big part of why this is so critical |
| 00:50:56,200  | The slide remains on screen | **Jeremy Gulson:** is that evidence base so that you can then start to ask |
| 00:51:03,287  | The slide remains on screen | **Jeremy Gulson:**  some of those questions. |
| 00:51:04,100  | The slide remains on screen | **Cath Jacobs:** Great. Thank you. |
| 00:51:08,000  | The slide remains on screen | **Cath Jacobs:** Just in terms of any kind of technical questions. |
| 00:51:12,100  | The slide remains on screen | **Cath Jacobs:** We can also respond through the AMDS email inbox, and we'll display |
| 00:51:17,200  | The slide remains on screen | **Cath Jacobs:** that at the end again. So have another question here. |
| 00:51:21,900  | The slide remains on screen | **Cath Jacobs:** Is this model laid over the top of the essential Asset Management |
| 00:51:25,100  | The slide remains on screen | **Cath Jacobs:** requirements for basic asset data including maintenance data, |
| 00:51:29,300  | The slide remains on screen | **Cath Jacobs:** and is this going to be extra work on top of what has |
| 00:51:32,803  | The slide remains on screen | **Cath Jacobs:** already been done? |
| 00:51:37,000  | The slide remains on screen | **David Darwin:** So, this is a better network model. Yes, locating, say, repairs done |
| 00:51:40,428  | The slide remains on screen | **David Darwin:** can be done using this as we effectively do now. |
| 00:51:43,600  | The slide remains on screen | **David Darwin:** But it's about performance at the end of the day |
| 00:51:45,317  | The slide remains on screen | **David Darwin:** You repair assets. |
| 00:51:48,400  | The slide remains on screen | **David Darwin:** One thing about the network model, it doesn't just talk about current |
| 00:51:50,600  | The slide remains on screen | **David Darwin:** assets it talks about the future assets as well. |
| 00:51:53,300  | The slide remains on screen | **David Darwin:** So, enables us to talk about new routes that we may be building. |
| 00:51:56,300  | The slide remains on screen | **David Darwin:** So, it's not just associated with the operations or maintenance |
| 00:51:58,400  | The slide remains on screen | **David Darwin:** of the current Network, it's also the planning for |
| 00:52:05,600  | The slide remains on screen | **David Darwin:** the future one. If we go back to the future one, we are expecting performance costs planned |
| 00:52:09,200  | The slide remains on screen | **David Darwin:** works to be draped along with the network model so that we |
| 00:52:13,200  | The slide remains on screen | **David Darwin:** can say share future Forward Works Programmes across various agencies. |
| 00:52:18,300  | The slide remains on screen | **David Darwin:** So yes, it is a foundation element for planning measuring |
| 00:52:20,700  | The slide remains on screen | **David Darwin:** the conditions performance about networks and the |
| 00:52:25,982  | The slide remains on screen | **David Darwin:** work done to create those. |
| 00:52:28,111  | The slide remains on screen | **Cath Jacobs:** Great. So, we do have some |
| 00:52:31,900  | The slide remains on screen | **Cath Jacobs:** ontology questions, which the AMDS workstream team will |
| 00:52:33,600  | The slide remains on screen | **Cath Jacobs:** respond to later. |
| 00:52:38,200  | The slide remains on screen | **Cath Jacobs:** I'd just like to give our speakers a big thank you |
| 00:52:40,400 | A new slide fades in. It reads:"*References & Feedbackwww.nzta.govt.nz/amdsamds@nzta.govt.nz*" | **Cath Jacobs:** and to our audience who have attended today. |
| 00:52:43,500  | The slide remains on screen | **Cath Jacobs:** So just go to the next slide please. |
| 00:52:48,700  | The slide remains on screen | **Cath Jacobs:** The recording of the session will be available |
| 00:52:52,600  | The slide remains on screen | **Cath Jacobs:** in a couple of days on the AMDS website and please do |
| 00:52:54,800  | The slide remains on screen | **Cath Jacobs:** as this is a proposed framework currently |
| 00:52:57,831  | The slide remains on screen | **Cath Jacobs:** please do send us any suggestions comments. |
| 00:53:05,086  | The slide remains on screen | **Cath Jacobs:** Use cases to amds@nzta.govt.nz And thank you, everyone, for attending. |
| 00:53:07,019  | The slide remains on screen | **Jeremy Gulson:** Thank you. |
| 00:53:09,482  | The slide remains on screen | **David Darwin:** Thanks folks |
| 00:53:12,482 End | Screen fades to black | **Elke Beca:** Thanks everyone |