

**Responses to queries raised during the TII Standards Roadshow 2022**

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Topic	Presenter	Organisation	Date	Query	Response
Training	AnnMarie Gallagher	TII	05/05/2022	The Geometric Road Design course: is this a course using Civil 3D?	The course does not cover any design software. The focus is on design principles and standards requirements.
Training	AnnMarie Gallagher	TII	05/05/2022	Is there a plan to have a drainage course?	Transport Infrastructure Ireland (TII) has plans to develop Road Drainage training in the future but no course is currently being developed.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Where do roundabouts sit in general in the Dutch order of preference for junctions?	As with Irish and U.K. Design Standards they are selected based on location specific needs i.e. speeds, Vulnerable Road Users (VRU), Annual Average Daily Traffic count (AADT) and urban/rural context. See Dutch Guidelines for more details.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	I understand the need to move to safer roundabouts for Non Motorised Users (NMU) but when the AADT reaches the higher end of guidance or if there is a high level of bus use, how effectively does it work for vehicles? Do they cause more congestion/driver frustration/bad publicity towards the projects?	Depends on the objectives - if capacity is the priority, then high volumes of VRU can't safely mix with high AADT and then you cannot achieve a safe junction for all users. If that's the case then you may need to provide for each separately, e.g. the Eindhoven roundabout in the Netherlands.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Is cycling one-way on the roundabout? (i.e. for cyclists wishing to take a right, must they travel around the roundabout to take the appropriate exit). What about e-scooters, which lane/rules apply for them?	Yes its one-way. Two-way can be implemented but this is confusing for both cohorts and not recommended. E-scooters must follow Road Traffic Act as per all users.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	As you mention all entries should be single lane. For example for a road with 25,000 AADT, how will the queuing length be managed in the peak hour for the single lane?	That is the purpose of the trial - to see how this Dutch Design will operate in practice.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Is there any analysis of the effect of the Dutch style roundabout on the vehicular capacity of the roundabout?	Yes. See the publication that was mentioned in the presentation.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	How will the new design take account of the Long/Wide loads which currently traverse the roundabout from the Liebherr Container Crane factory on the Fossa approach?	That will be autotracked to check specifically for this occasional movement.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Considering the AADT for that roundabout, what are the plans for when that road is operating above that AADT, i.e. most weekends etc. during the summer months?	Normal design procedures apply.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Looks like this type of roundabout would be a congestion hotspot.	Its already a congestion hot spot with associated issues for VRU. The objective is to improve VRU safety without exacerbating existing congestion.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Can the retrofitting be achieved within the footprint of the existing roundabout?	Yes
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Has there been any issue with a dominant arm's traffic backing up during peak traffic periods impeding on other roundabouts or junctions within close proximity to the Dutch style roundabout?	One of the objectives of the trial is to investigate impacts such as this.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	RE Dutch-style Roundabout: Might we change our legislation so that (extended) Zebra Crossings also give priority to cyclists (without the need for them to dismount)? Or is the Zebra intended to apply to them at all?	That may have to be considered more widely regarding VRU provision by the Department of Transport (DoT).

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Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Does this roundabout allow for the use of larger vehicles and Heavy Goods Vehicles (HGV)? It appears that there may be issues with these vehicles manoeuvring through and blocking the operations of the roundabout.	That will be autotraked to check specifically for this occasional movement.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	2 no. Dutch style roundabouts were built in Limerick in 2015, smaller in scale but with the same layout.	Noted
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	What legal mechanism will be used to give VRU priority; will all crossings be zebra crossings?	The legal mechanism is the Road Traffic Act as with all pedestrian crossings in the state.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Would you consider piloting a Turbo Roundabout? These are used in the Netherlands for higher AADT roundabouts, rather than a roundabout with potentially multi lane entries which would be contrary to the principles of the 'Dutch style' roundabout?	Yes, depending on the outcome of the Design Process which has not commenced yet.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Are the design restraints not very restrictive for HGVs and buses?	That will be autotraked to check specifically for this occasional movement.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Is there any particular reason why the Planning Act is being used? Is it possible to use Section 38 of the Road Traffic Act rather than Part VIII of the Planning Act?	Part 38 could be used but in this instance the Authority deems Part 8 to be appropriate at this time.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	I would be concerned about the geometry of the trial pictured for the passage of a HGV, it looks too tight of a radius.	That will be autotraked to check specifically for this occasional movement.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Is a Standard due to be released in 2022?	Changes to TII geometric standards are on-going and we expect those to be published in 2022. We are also aware that the National Transport Authority (NTA) are updating the National Cycling Manual (NCM) and those are pending publication soon but TII does not have a date for those guidelines.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	What is the dwell distance between exiting the roundabout as a vehicle and the zebra crossings, and are the zebras on raised tables?	The details of raised/at grade are not finalised yet. The Dutch roundabouts are typically at grade.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	A welcome development but a significant move away from general resistance to increasing traffic congestion. Will this extend to other pedestrian facilities i.e. the use of raised ped crossings on the TII network rather than an insistence on at grade crossings?	TII funded schemes in urban areas follow other National Guidelines, NCM and Design Manual for Urban Roads and Streets (DMURS) as per DoT guidance. In rural areas i.e. locations over 60kph the TII standards apply. Raised crossing are not recommended in high speed locations for pedestrian crossings.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	With respect, some regional roads have extremely high AADT too?	Noted
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Normally on the roundabouts, vehicles will enter slowly and exit fast. The buffer distance of 5m for cyclist crossings on exits may lead to collisions. What is your thought on this?	This is one element that we will consider carefully with HGV % taken into consideration. Again as with other geometric elements there is guidance in the Dutch geometric guidelines to address this and they have this issue too.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Questions about capacity are interesting. Will your traffic modelling take account of modal shifts that we might hope will come into effect with the improved cycle infrastructure?	Yes that is the intention, however in the absence of an existing cycling model in this area (which is needed to estimate demand) this may be difficult.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Are there any plans to trial a protected signalised junction on the national road network? Would it be more suited to the N22 in Killarney?	Assume that term refers to protected left turn pockets for cyclists? There are no plans at present but we are observing the operation of one in Dublin.

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Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	When will TII stop the use of the term "non-motorised Users" surely the term should be "vulnerable road users" to take account of e-scooters etc.?	Noted.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Is there a concern if the design is tweaked to 2 lane entries where high sided vehicles in one of the lanes block visibility to VRUs about to cross?	Yes, that is why we want to install single lane entry/exit and follow the Dutch Design principles- if that layout is not working , due to severe capacity impacts, we will evaluate a two lane option but, your observation is valid and correct and one of the reasons single lane entries/exits are important - currently HGV take both lanes on entry.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	I understand that the original roundabout may be congested already, but slowing speeds and using tighter radii can only make it worse.	The objective of the scheme is not capacity increase. The objective is safety improvement for a specific group of road users at an existing junction that was designed as a rural junction.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	I think the U.K. Highway Code has been updated but the underpinning body of law has not?	Not sure if you are stating that the new Rules do not have a legal standing. If you are interested details can be read here - the new rules as with some but not all of the Highway Code have legal standing <a href="https://www.gov.uk/guidance/the-highway-code/introduction">https://www.gov.uk/guidance/the-highway-code/introduction</a> and these changes went to Parliament in Dec 2021!
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	For clarification; Section 38 is for Traffic calming measures, rather than temporary traffic calming measures only.	They may not be temporary, it's a trial and either Part 8 or Section 38 may be employed for the permanent solution as deemed appropriate by the road authority at the time.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Surely in transition zones, the vehicle speeds and vehicle flow would result in an off-road segregated track if applying the NCM.	Yes that is correct. The presentation did not state otherwise - subject matter was Dutch style roundabout that facilitates fully segregated arrangements.
Dutch Style Roundabout Pilot	Suzanne Meade	TII	05/05/2022	Will a trial arrangement (with temporary features?) not impact on the perception and behaviour of users and provide bias in the result as it will be read more akin to a Temporary Traffic Management layout with drivers in particular using more caution than they would in a permanent arrangement with physical kerbs and signage?	As discussed in the presentation, the temporary layout will employ removable kerbs and infill so that is as close as possible to a permanent layout/look. See Capel Street, Dublin
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	This is an excellent development. Some queries: When will this model be made available to the industry for use. Are the performance requirements such as rutting being aligned with the values embedded into Deighton Total Infrastructure Management System (dTIMS)?	The pavement design rutting model has not been aligned with U.S.A Pavement Assessment Management System PAMS / dTIMS performance modelling.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	I understand one of the main drivers for the development of the Irish Analytical Pavement Design Method (IAPDM) tool is to promote a more circular economy. Does the tool provide an estimate of the embodied carbon costs of the designed pavement construction? If not, could an embodied carbon unit rate be added to the materials database along with the stiffness and Poisson's ratio?	The IAPDM does not consider embodied carbon. Environmental considerations e.g. embodied carbon, for different pavement design options will be assessed using a Life Cycle Analysis/Assessment tool currently in development. It will aim to balance agency / user / environment impacts across the pavement asset lifecycle.

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Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	What is the underlying model used to estimate the strains for each of the models? For example was this CIRCLY or BISAR or was a structural number approach adopted?	It uses a Multi-Layer Linear Elastic mechanistic model. It would produce very similar results compared to CIRCLY and BISAR. The mechanistic (stress / strain) outputs would be similar to BISAR or CIRCLY. The material characteristics and empirical / performance models (risk of pavement failure) are specific to IAPDM.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	Does this method allow for the design of concrete pavements or is the software only for flexible pavements? Does the model allow composite pavements with a cement bound bases to be designed?	Rigid / concrete pavements are not considered within the IAPDM. Cement bound materials can be modelled within the IAPDM.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	Does the tool allow for including pavement reinforcement layers?	No, but this is under development.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	Can you advise if a carbon estimation module is available? This is very important and could be easily added.	No, there is no carbon estimation tool within the IAPDM.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	We hear that some contractors have introduced rejuvenation or preservation treatments - have TII guidance on how/what can be used?	This is currently under development for inclusion within CC-SPW-00900.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	Does the tool allow for modulus corrections to asphalt stiffness based on traffic speed at the site such as intersection approaches?	This is currently not considered.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	What stage of development is the TII Aggregates Register currently at?	The aggregate register is currently undergoing user testing. A publication date is not yet available.
Circular Economy	Janet Lynch		05/05/2022	Great to see a lot of work being done on promoting a more circular economy. Do TII plan to publish estimated embodied carbon equivalents for each material type and pavement construction activities? The TII Schedule of Rates (CC-GMP-00054) could be updated to include these unit rate estimates for each line item. This would encourage the calculation of environmental impact costs of alternative options.	TII are developing a carbon tool for use on projects which will be published in due course including embodied carbon for key construction materials. Product specific Environmental Product Declarations are shared by Irish Green Building Council (IGBC) for Irish products and these include embodied carbon data for some products which may be used on pavement projects. In addition TII are working with industry regarding product category rules for pavement products which will enable Environmental Product Declarations specific to pavement materials to be created to a similar set of rules.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	I would like to see the wider use of thicker unbound bases with a thin bituminous layer which does not go into tension. Is this option permissible using the new system? This option would also have low carbon characteristics.	Yes, unbound base layers with thin surfacing can be modelled within the IAPDM.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	Will Figure 4.1 to DN-PAV-03076 be updated to permit more MSA uses in the interim to the IAPDM Web-based design software being publication? i.e. MSA 4; 6; 7; 13; 14; 16 etc.)	No, this document will eventually be withdrawn once the IAPDM is operational.

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Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	With regards to the reduction of the depth of pavements as a means of reducing carbon footprint and costs, will TII standards such as DN-GEO-03047 be updated in line with this? For rural cycleway the standard suggests 150mm of 804 clause material base, which is similar to that of highway design. Does a cycleway require as much base 804 as a highway given the nature of the loading on the surface?	The design of cycleway pavement structures is currently under review and will be updated shortly.
Irish Analytical Pavement Design Method	Alan Lynch	Arup	05/05/2022	With sustainability & environment being to the fore, with Electric Vehicles & Hybrid vehicles being approximately 33% heavier. HGV's also in the future also going the same way. This may lead to a 33% increase in HGV's on the road network to carry the same load as current HGV's, has there been research on the possible effect of lifecycle of the pavement and the overall cost of the maintenance of the asset and possible shorter life cycle?	Yes, the effect of overloaded vehicles, i.e.. vehicles loaded in excess of the vehicle pavement wear factors currently considered have been analysed using the IAPDM and additional ME pavement design tools. The thickness of additional pavement materials required to meet the additional load requirements and provide a similar level of service and maintenance need have been identified.
Circular Economy	Janet Lynch	Arup	05/05/2022	What type of changes are being considered in TII Series 600 specifications due to the circular economy plan?	An update to Series 600 has recently commenced which will include enabling the reuse and recycling of by-products and wastes. A range of different options are being considered as part of this update.
Greenways and Active Travel	Michael Gaughan	TII	05/05/2022	Why is segregation not required at 60kph?	The standard applies to rural national roads with speed limit of 60kph or greater only. Note the national cycle manual requirements are being reviewed and updated.
Greenways and Active Travel	Michael Gaughan	TII	05/05/2022	Does this standard apply to the development of stand-alone Greenway schemes?	Yes, as it interacts with national road infrastructure in rural areas (greater than 60kph). Otherwise 03047 applies for greenways.
Geometry updates	Martin Allen	Arup	05/05/2022	Will the new geometry standards reduce parameters somewhat to take account of future technologies such as speed limits to be linked to Global Positioning System (GPS), connected vehicles and the like?	It is not proposed to reduce geometric design parameters (e.g. sight distance, curvature etc.) to take account of future technologies.
Departures from Standards	Esther Madden	TII	05/05/2022	I have been experiencing issues accessing the Departures from Standards portal. Have any changes occurred to the portal requiring different login details?	A further level of security has been mobilised for the departures portal. Log in will now be via Microsoft 365 and an authentication code may be required if you are not already logged into MS365. If you have not received an invitation from Microsoft please email <a href="mailto:infoDEPs@tii.ie">infoDEPs@tii.ie</a> to request access. If you have received the invitation but are still experiencing issues, please contact <a href="mailto:infoDEPs@tii.ie">infoDEPs@tii.ie</a>
Geometry updates	Martin Allen	Arup	05/05/2022	Anything new or additional in relation to hidden dips?	This subject is being reviewed and further guidance may be included in the updated standards.
Geometry updates	Martin Allen	Arup	05/05/2022	Will this standard apply to the Trans-European Transport Network (TEN-T) road network?	Unsure exactly what standard is being referred to here, but the expectation is that the revised geometry standards would be used for the design of the TEN-T Network.
Geometry updates	Martin Allen	Arup	05/05/2022	Any consideration for entry path deflection radius for mini roundabouts? It is difficult to achieve 100m for small Inscribed Circle Diameter (ICD) roundabouts where staggered arms not possible on local roads.	Mini-roundabouts are not currently included in DN-GEO-03060 and it is not currently proposed to include these in the updated standards. However, it is proposed to include further guidance on entry path deflection for both single lane and multi lane roundabouts.
Geometry updates	Martin Allen	Arup	05/05/2022	Anything new in relation to right turn ghost island facility design need?	Additional guidance is likely to be included in respect of the siting of right turn ghost islands and the avoidance of overtaking through ghost island junctions.

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Departures from Standards	Esther Madden	TII	05/05/2022	The TII Departures application portal currently appears to be inactive, is this a global issue with the portal?	A further level of security has been mobilised for the departures portal. Log in will now be via Microsoft 365 and an authentication code may be required if you are not already logged into MS365. If you have not received an invitation from Microsoft please email <a href="mailto:infoDEPS@tii.ie">infoDEPS@tii.ie</a> to request access. If you have received the invitation but are still experiencing issues, please contact <a href="mailto:infoDEPS@tii.ie">infoDEPS@tii.ie</a>	