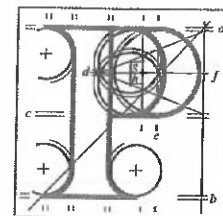


**Our Case Number:** ABP-314724-22

**Planning Authority Reference Number:**



**An  
Bord  
Pleanála**

Cormac McKay and Aeravai  
5 Saint Brigid's Road Upper  
Drumcondra  
Dublin 9  
D09 C9C7

**Date:** 26 January 2023

**Re:** Railway (Metrolink - Estuary to Charlemont via Dublin Airport) Order [2022]  
Metrolink. Estuary through Swords, Dublin Airport, Ballymun, Glasnevin and City Centre to  
Charlemont, Co. Dublin

Dear Sir / Madam,

An Bord Pleanála has received your recent submission (including your fee of €50) in relation to the above-mentioned proposed Railway Order and will take it into consideration in its determination of the matter.

The Board will revert to you in due course with regard to the matter.

Please be advised that copies of all submissions/observations received in relation to the application will be made available for public inspection at the offices of the relevant County Council(s) and at the offices of An Bord Pleanála when they have been processed by the Board.

More detailed information in relation to strategic infrastructure development can be viewed on the Board's website: [www.pleanala.ie](http://www.pleanala.ie).

If you have any queries in the meantime, please contact the undersigned. Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

**Teil**  
**Glao Áitiúil**  
**Facs**  
**Láithreán Gréasáin**  
**Ríomhphost**

**Tel** (01) 858 8100  
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**Website** [www.pleanala.ie](http://www.pleanala.ie)  
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64 Sráid Maoilbhríde  
Baile Átha Cliath 1  
D01 V902

64 Marlborough Street  
Dublin 1  
D01 V902

Yours faithfully,

PP EM

Niamh Thornton  
Executive Officer  
Direct Line: 01-8737247

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**Cormac McKay**  
5 St Brigids road Upper  
Drumcondra  
Dublin  
D09 C9C7

**Aeravai**

**Autonomous Electric Road and Air Vehicle  
Association of Ireland**

**Submission to An Bord Pleanála**

**Metrolink Dublin**

## **Observations**

- Cost
- Obsolete technology
- Alternatives
- Duration of project
- Construction consequences
- Health effects
- Unrealistic behavioural change

## Cost

I have met with the Office of Comptroller and Auditor General to raise my concerns with the unknown projected costs of the project now estimated at somewhere between €9.5 billion & €25 Billion or possibly even more. I warned them of the possible damage to Ireland's reputation from offering financial products based on this project, and how financing this project could seriously damage Ireland's international reputation. I also discussed alternatives to Metrolink and future and emerging transport technology that will be a more cost effective solution to our future transport needs.

There is a developing opinion that the current tendering system is broken and in need of urgent reform, before such a large project like Metrolink is undertaken or if it should at all.

We must learn lessons from previous Irish projects such as the National Children's Hospital. The method of how it is financed with the taxpayer expected to pick up any shortfall in funding, with changes in the domestic and international supply chain expenses.

We must also learn lessons from other similar international projects such as the CrossRail (now the Elizabeth line) and the unforeseen cost overruns and delayed delivery date of the project, with now a multi generational long term pay back bonds for the financing.

HS2 (High Speed 2) UK should also be a cautionary tale on the unknown costs of rail projects. In fact rail projects in general across the EU and rest of the world have a terrible reputation of cost overruns and poor financial viability, which is why so few projects like this have been undertaken. Despite this project being promised for political gain for over 40 years its financial variability has always been and continues to be questioned, as to whether it is the best use of taxpayer funds or if it should even be considered a priority with so many other more urgent priorities of taxpayer and private investor funds such as the housing crisis, retrofitting inefficient homes, renewable energy generation and other urgent carbon mitigation projects.

It is still unclear whether this will stay in full public ownership or if a PPP (public private partnership) contract may be signed with a private operator/s? as some of these PPP's have not worked out very well for the taxpayer, with shortfall in projected use and profit made, being subject of contract clauses. An Agreement governing traffic growth on the M3 and Limerick Tunnel, guaranteed the Government will pay if traffic growth doesn't reach it and that the taxpayer should pick up the bill for shortfalls. It would be my fear because Metrolink will be obsolete transport technology by the 2030's and unfavored by the general public that its use may not hit expected or projected passenger numbers and any shortfall in expected profit or repayment of bonds and funding will be expected to be paid by the taxpayer.

It is understandable that an attitude of plow on, we've spent so much already on this project some estimated it at over €250 million euro, on mostly outside contractor and consultants that we should continue, but this may be an extremely unwise position to take, with the well known developments in transport technology and alternatives to this type of traditional public

transport that may make it become obsolete sooner than the actual projected delivery date some time in 2030's of the project. At a huge expense to the taxpayer and private funding, it is the equivalent of delivering a canal in the age of rail, a landline phone network in the age of mobile phones or a CD in the age of streaming. That's what Metrolink may be with near future transport advancements and the current business case for Metrolink is based on these advancements not happening.

<https://www.wsj.com/articles/subway-mta-bart-public-transit-new-york-boston-san-francisco-11673198418>

It would be my opinion that this €250 million on consultants should be written off as a bad learning experience and that future projects should not be conducted or financed in this manor, as the NTA/TII clearly lacks the experience to deliver such a project and should never have been financed by the taxpayer and instead expenses for plans or proposals should be paid for by competition by the expected contract deliverers.

There is too much of a cottage industry of consultants and outside transport contractor firms plaguing transport project delivery costs, costing taxpayers around the world billions and that after the fact auditing and Auditors have been ineffective at preventing future cost overruns.

## Obsolete technology

I am the founder and spokesperson for Aeravai it was set up to advocate for and educate; transport planners, politicians, industry and the general public of the coming advancements and the near future deployment of advanced transport technology such as Autonomous Electric AI controlled Vehicles that are being currently in use and will be in use on future Robotaxis, Delivery Drones & passenger eVtol aircraft deployments around the world, with Ireland predicted to benefit from this €1,000,000,000,000 Trillion plus future industry.

<https://www.irishtimes.com/business/transport-and-tourism/avolon-predicts-ireland-to-be-centre-of-1tn-urban-air-industry-1.4590902>

What this means is how people travel in the 2030's will be drastically different to today and the speed of adoption of these advancements in transport could be exponential, Instead of travelling to Dublin Airport by rail, you may be travelling by passenger drone, eVtol in the air or Autonomous RoboTaxi on the ground and these may be a more desirable form of travel than disjointed public transport and underground rail. This may cause adverse reactions on projected passenger numbers travelling on Metrolink making its commercial viability questionable with Dublin Airport being one of its major justifications for the project.

In fact Dublin Airports own passenger numbers may decline significantly in the 2030's with the emergence of smaller electric aviation aircraft that can take off and land from anywhere in the country no longer needing passengers to travel to Dublin airport at all, for the majority of short haul travel and the IAA, EU and UNECE global regulators are currently making the rules for deployment of these technologies.

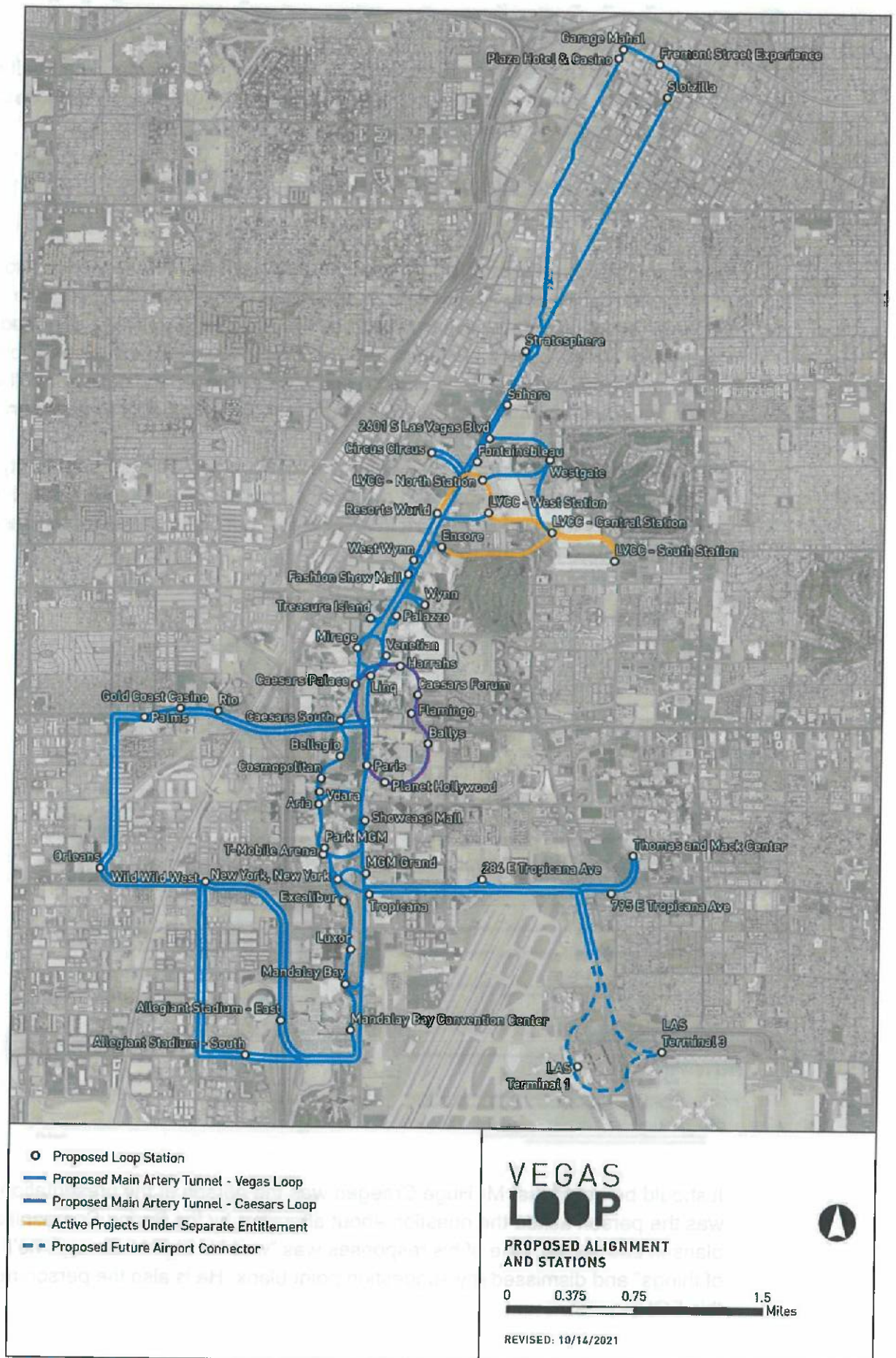
## Alternative proposal

One of the alternative proposals by myself is to copy of what is currently under construction in Las Vegas by a company called The Boring Company using underground smaller affordable vehicle tunnels and Autonomous RoboTaxis

A 50km network of tunnels with connections to all major hotels and venues a large stadium and connection to the busy international airport the system is projected to handle over 500m passengers per year, for a more desirable on-demand, direct door-to-door, shared mobility transport service.

[www.boringcompany.com](http://www.boringcompany.com)



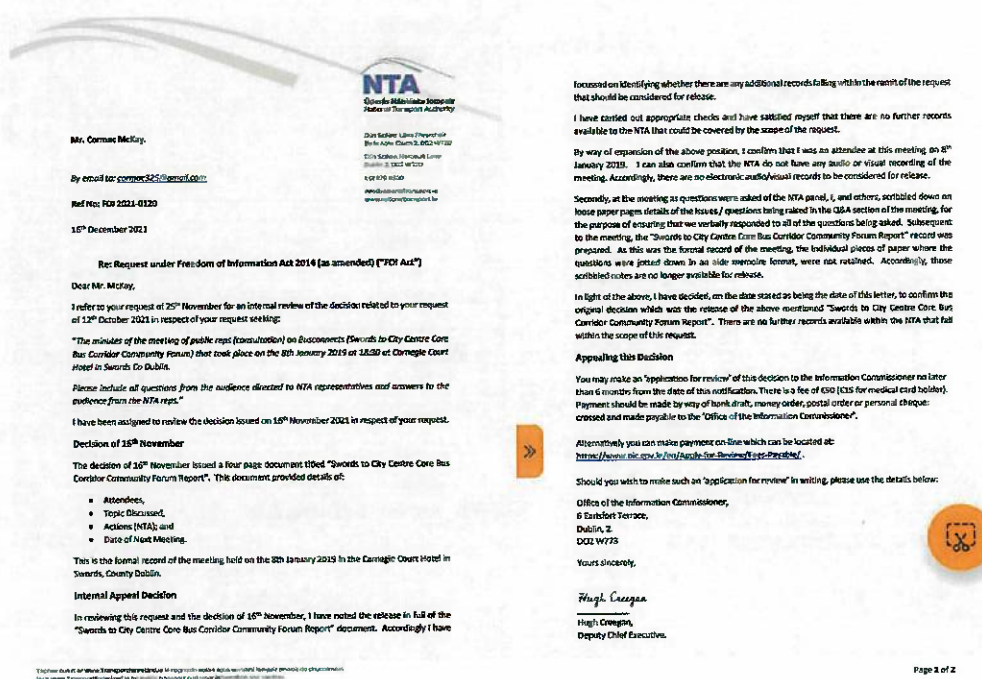


The company has already in the space of a couple of years planned and built a demonstration system at a busy convention centre and just recently demonstrated how the system could work. <https://www.boringcompany.com/lvcc>

<https://twitter.com/boringcompany/status/1612634349559742465>

One of the disadvantages of a Metro is that they are notoriously expensive to build per km and require large station blocks, these are extremely disruptive, time consuming and labor intensive to construct and many in other cities have had unforeseen delays on completion dates. The Boring Company's solution avoids these pitfalls with smaller tunnels and smaller stations or no need for stations at all with entrances into the tunnel network from street level for direct door to door service.

This solutions was brought to the attention of the National Transport Authority at a number of public consultations and meeting with public reps. Unfortunately I did seek an FOI to verify this and included it in submission but no records of questions asked at meetings were kept the by NTA.



It should be noted that Mr Huge Creegan was the person at the presentations and was the person asked the question about alternative by the Boring Companies and its plans in Las Vegas. One of his responses was "well Mr Elon Musk says he'll do a lot of things" and dismissed my suggestion point blank. He is also the person replying to this FOI request.



I also submitted this proposal to the Dail public petitions committee for a feasibility study to be conducted.



Title: on  
Electricity  
Houses of the  
Oireachtas

An Comhcheleas um  
Aontaiscúlaíocht  
Tíre an Oireachtas,  
Teach Laighnean,  
Baile Átha Cliath 2  
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Tel: (01) 918 3054  
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aontríon: [publicpetitions@oireachtas.ie](mailto:publicpetitions@oireachtas.ie)

Joint Committee  
on Public Petitions  
Houses of the Oireachtas,  
Leinster House,  
Dublin 2  
D02 XN20  
Tel: (01) 918 3054  
Bíodh  
[publicpetitions@oireachtas.ie](mailto:publicpetitions@oireachtas.ie)

Your ref: P00025/21

Mr Cormac McKay  
Email: [cormack25@gmail.com](mailto:cormack25@gmail.com)

Dear Mr McKay,

The Committee Secretariat working with the Joint Committee on Public Petitions acknowledges receipt of your petition in relation to "Request for a feasibility study on The Dublin Loop underground tunnels and multi purpose adaptable Autonomous electric vehicles".

Your Petition reference number is P00025/21, your petition is currently being processed by our Petitions Case Manager, and we will be in contact with you in due course.

Yours sincerely,

Susan Martin  
Petitions Case Manager

14 July 2021

Cúlaíse Áille na hOireachtas / Oireachtas.ie

It was never my intention to ask the NTA to conduct this feasibility study as I do not believe it possesses the technical know how on how to conduct one for this proposal,

It was a very disappointing unfortunate misunderstanding of the petitions case manager and unfortunately I was never invited to present my request to the committee, after this reply from Anne Graham the petition was closed without a satisfactory outcome, I did request a number of times and communicated with the committee about the incorrect information provided but due to procedure once a petition is closed it can not be reopened and I was asked to resubmit the petition.

Mrs Anne Graham's reply to the committee was to misdirect and deceive the committee as she is well aware of the current proposal in Las Vegas and may of even used the current service on a recent visit to Las Vegas.



Annex Gibson,  
Chief Executive

When confronted with the misdirection I was again dismissed.

Your Ref: XCP\_1301\_2021

Re: Petition No. P00025/21 "Request for a feasibility study on 'The Dublin Loop' underground tunnels and multi-purpose adaptable autonomous electric vehicles"

Dear Anne Graham,

I refer to your correspondence dated 5 August seeking the views of the National Transport Authority (NTA) in relation to the proposal for a "Feasibility study on 'The Dublin Loop' underground tunnels and multi-purpose adaptable autonomous electric vehicles" from Mr Cormac Mackay.

Mr Cormac Mackay

Technological advances over the last two decades or so have opened up new areas of potential in the delivery of transport at both the regional and the individual level. Driverless trains, autonomous cars and smart highways are just examples of the new horizons that are now possible. Some of these initiatives, such as driverless trains, are now in widespread use, while others such as autonomous vehicles are in an advanced stage of development with pilot operations in several locations.

Other technologies are envisaged by some futurists such as the "Hyperloop", which is a proposed route of passenger and freight transport by which "pods" would operate at very high (potentially supersonic) speeds through tubes similar to those at Dover, New York. These are only concepts at this stage with limited experimental demonstrations developed but with no large scale operational example in place anywhere in the world.

It is understood that "The Dublin Loop" proposal being put forward by Mr Mackay is a version of the

Mr Mackay

"Hyperloop" proposal referred to above. It is understood that the proposal would involve a series of

tunnels not proposing a Hyperloop and did not use that word in my request.

underground tunnels through which small "pods" would travel, ascending the surface at various intervals.

I did not mention "pods" and did not use that word in my request.

As a proposal for delivering effective urban transportation, it is an unrealistic proposal at this point in time. This proposal is ambitious but not unrealistic and could be delivered for less than the proposed budget of all the current proposals.

No city anywhere in the world is planning its transport network around a "Hyperloop" proposal.

This is also not true. But they are planning to use the Hyperloop for city to city long distance travel which is completely different to an urban loop that is currently in operation in Las Vegas with further sequenced underway and planned. [www.hyperloop.com/press](https://www.hyperloop.com/press)

and some businesses and the reasons they are likely unlikely to be granted Planning Permission from An Bord Pleanála. One of the main reasons for the delay to Minister and that plus is the health consultation. In two recent studies they have found that heavy rail travel is extremely detrimental to your health both in terms of underground subway systems.

<https://www.theguardian.com/technology/2021/04/29/hyperloop-never-again-according-to-uk-health-experts>

and to the surrounding neighbours from noise pollution with increased risks from developing dementia.

[www.theguardian.com/technology/2021/04/29/hyperloop-never-again-according-to-uk-health-experts](https://www.theguardian.com/technology/2021/04/29/hyperloop-never-again-according-to-uk-health-experts)

I have asked those concerns with the National Transport Authority in the past and with present and past Ministers for Transport and yet despite my best efforts, these ill proposed plans have continued to proceed.

I have written to the RTE and RTE's association of Ireland to make a public statement on the detrimental effects of these and before ground heavy rail and would ask you to ask for clarification, personally and if you could make a statement it would help to show the general public of the health effects. If the planning application was to proceed this information would be produced and as best practice would have no choice but to refuse planning permission as it is lengthy and costly legal action.

This however is not my only concern. Recently our NTA started selling Green Bonds for projects such as Metrolink, Dart plus and busways. It is my opinion that this could damage Ireland's reputation, selling bonds for projects that are unlikely to get planning permission and those concerned for the planning process and could have major legal ramifications and possible claims for compensation.

There are just two of my many concerns with Dublin Transport proposals, Metrolink, Dart plus and the upcoming busways proposal which also has serious detrimental planning permission concerns.

I am well aware of our serious climate change concerns and I have studied more cost effective and healthier alternatives with existing advancements in transport and technology and the benefits they will bring to society and it would be more than happy to make a presentation to you on the healthy alternatives to these expensive, obsolete, dangerous and unhealthy proposals if you are genuinely interested.

It is my hope that you started the record that the information provided to the committee for a clarification of my request for a feasibility study on 'The Dublin Loop' underground tunnels and multi-purpose adaptable autonomous electric vehicles, NOT a Hyperloop as you don't believe you have been sincere with the committee. It is my hope that you have not deliberately tried to mislead the committee in my request.

I would ask you to correct the record for all the points I have made. Please.

Regards

Cormac Mackay

Aside from being improved in large scale operation, it would be prohibitively expensive. My proposal for a loop is completely different to Hyperloop. They are two completely different proposals. It is my opinion that you are well aware of the difference between the two proposals. It would be a serious deficiency of your professional knowledge if you did not know the difference between the two systems and current deployments and commercial current working examples and you have deliberately tried to mislead the planning committee.

Even if it were a viable concept, financing for transport projects is expensive, challenging and difficult. We understand that the promises of the "Hyperloop" proposal believe that they can reduce travelling costs dramatically – however, there is no evidence of this to date.

The current fully commercial deployment was proposed by the Las Vegas Convention Center, a convention center in Winchester, Nevada USA. It is owned and operated by the Las Vegas Convention and Visitors Authority and planning permission was granted by the local council Clark County Council and deferred in the space of 18 months and now up and running with 2.75 kilometers of underground tunnels and 1 station and a plan to expand to the entire city's subway with two more stations that have not yet started. I am very surprised you are not aware of this and have not made plans to visit personally to inspect the deployment. I invite you to attend at the upcoming CES in January.

In addition, it is not clear how the issue of safety and rescue underground has been considered in this technology. In all accredited transport schemes, the arrangements to allow emergency services to access had been with underground addresses from a manual part of the design process and dictates many aspects of the urban transfer scheme. There is no evidence that this has even been considered in this concept.

All safety concerns have been met in Las Vegas and would obviously be met for a system in Dublin any statement to the contrary would be defamatory, false and misleading.

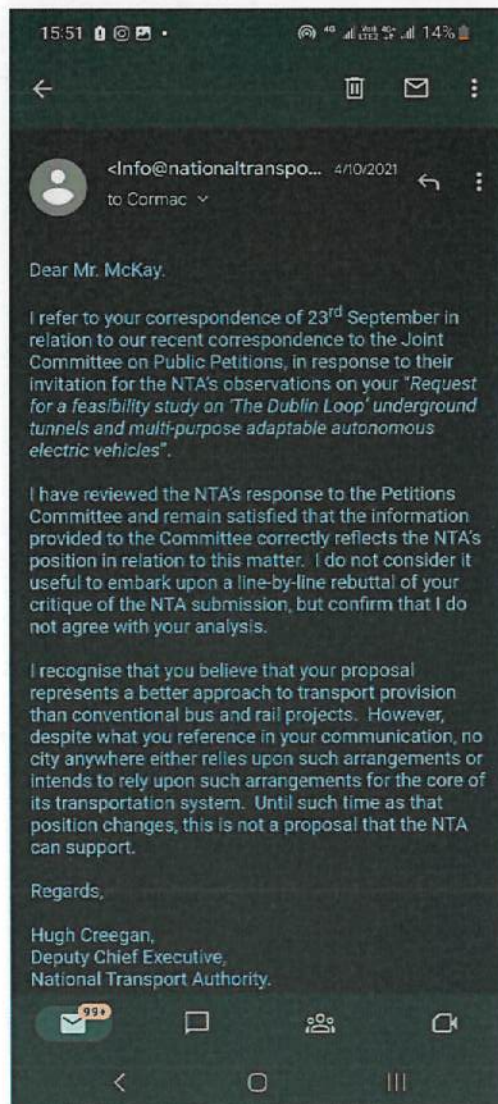
"The Dublin Loop" has been put forward by Mr Mackay as a replacement for Metrolink.

Metrolink, DART+ and other public transport projects, which he considers are "obsolete transport proposals". It is the NTA's position that there is no credible basis to Mr Mackay's proposals and no city in the world is stopping development of its "conventional" transport proposals to focus on the futuristic "Hyperloop" type solutions.

The estimated spend on current proposals, one example busways. The known spend by the NTA on public consultation and professional bodies has been claimed to be €12 million since however it is probably more. But is a concern I have raised with the Comptroller and Auditor General. The Las Vegas Loop that has been planned, delivered and in operation at a cost only €80 million euro (€47 million deficit). Further information can be found on [www.hyperloop.com/press](https://www.hyperloop.com/press)

Given the embryonic nature of the "Hyperloop" proposal, it would not be a good use of scarce public resources to commission a feasibility study into the Dublin version – "The Dublin Loop" – and the NTA does not propose to undertake any such study.

A simple Google search would have provided all the information provided. It is my opinion that not knowing this information as CEO of our National Transport Authority is a serious dereliction of duty of care to transport passengers, the financial and health consequences of getting this wrong and the long term consequences I would also like to bring to your attention the recent developments on the proposed Metrolink, Dart plus



All avenues of discussions with the NTA have been exhausted.

There has also been an Irish media blackout of my alternative proposal [www.TheDublinLoop.ie](http://www.TheDublinLoop.ie) and the Boring Company project in Las Vegas with no discussion or public debate in any of the national Irish media an industry insider suggested to me they do not want upset the NTA and lose any current or future potential advertising revenue from the NTA.

## **Duration of project**

Because of the nature of this project it will take considerable long time to complete and similar projects have taken years longer than expected  
Another disadvantage of Metro projects.

## **Construction consequences**

There will be a number of unpalatable consequences from the construction of this Metro proposal including a number homes need to be vacated and demolished, along with a community leisure centre and a historical landmark.

## **Health effects**

One of the developing worries regards underground rail is the potential health effects of the Air polutions on underground Metros.

<https://www.sciencefocus.com/news/london-underground-air-pollution/>

[https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964\(22\)00244-4/fulltext](https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964(22)00244-4/fulltext)

Heavy rail in general has some emerging health concerns that the Irish authorities are still only beginning to investigate and become aware of With the most significant being noise pollution and its long term health effects this project proposes to link up with other heavy rail as a core principle of its interconnectedness.

<https://www.bmj.com/content/374/bmj.n1954>

The EPA has yet to publish it findings of noise pollution levels in the city.  
The HSE is currently conducting studies for long term effects.  
Unfortunately the HSA has not conducted any safety inspections in workplaces from railway noise pollution in the workplace.

## **Unrealistic behavioural change**

There seem to be an ideological lack of understanding of why a majority of the general public does not use or will not use public transport and the expectations that delivery of this project will encourage people out of private cars and on to it may be unrealistic and the behavioural change will not be realised to justify the proposal going ahead especially with the coming advancements in transport technology and alternative options such as on-demand door-to-door RoboTaxis.



EU - European Union  
EPA - Environmental Protection Agency  
eVtol - electric vertical take-off and landing  
HSE - Health Service Executive  
HSA - Health and Safety Authority  
IAA - Irish Aviation Authority  
Km - Kilometre  
NTA - National Transport Authority  
UNECE - United Nations Economic Commission for Europe