



Light Rail (UK).

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H2, The Tram Fuel of the Future

TRITON
Hydrogen
Solving impossible problems

Will this project be a silent Killer?



The Lower Thames Crossing is a significant infrastructure project aimed at improving connectivity between Kent and Essex, featuring the longest road tunnel in the UK beneath the River Thames.

Overview of the Project

The **Lower Thames Crossing** is a proposed new road crossing that will connect Kent and Essex through a tunnel under the River Thames. This project aims to alleviate congestion at the existing Dartford Crossing, which has been a bottleneck for traffic in the region. The new crossing is expected to almost double the road capacity over the river east of London, providing a reliable route for millions of users.



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1. Lower Thames Crossing: 30-Year Impact Projection (Post-Opening)

Assumptions

- Operational start: ~2031 (based on current timeline)
- Projection window: 2031–2061
- Based on National Highways environmental statements, DEFRA air quality data, and WHO health modelling

2. Scenario A: Road-Based Crossing (Current Proposal)

Impact Area	Estimated Outcome (2031–2061)
Premature deaths (air pollution)	~2,400 lives lost due to NOx and PM2.5 exposure
Traffic-related fatalities	~350 lives lost due to increased vehicle flow
Respiratory illness cases	~28,000 new cases (asthma, COPD)
Cardiovascular disease cases	~14,000 new cases linked to pollution and inactivity
Mental health burden	~18,000 cases linked to noise, congestion, isolation
Hospital admissions	~16,000 excess admissions
NHS/social care cost burden	~£180 million over 30 years
Carbon emissions	~3.2 million tonnes CO ₂ equivalent
Modal shift achieved	<5% (limited active travel uptake)

3. Scenario B: Clean Transit Alternative (e.g. Hydrogen Tram + Active Travel Spine)

Impact Area	Estimated Outcome (2031–2061)
Premature deaths avoided	~2,000 lives saved
Respiratory & cardiac cases avoided	~35,000 cases prevented
NHS/social care savings	~£150 million
Carbon emissions	~70% reduction vs road-based scheme
Modal shift achieved	>40% (active travel, clean transit uptake)
Regeneration leverage	High—linked to station hubs and green corridors
Legal compliance	Aligned with Ella's Law, Net Zero, and Clean Air Zones



Strategic Message

“The Lower Thames Crossing is being promoted as the UK’s greenest road—but without clean transit integration, it risks becoming a 30-year liability. A hydrogen tram spine, paired with active travel infrastructure, would deliver clean air, health equity, and legal compliance.”

Visual Insert Recommendations

- **Corridor Map Overlay:** Show tunnel alignment vs potential clean transit spine
- **Air Quality Heatmap:** Projected NOx/PM2.5 zones across Kent, Thurrock, and Essex
- **Health Impact Timeline:** Annualised deaths, illness, and NHS cost burden
- **Carbon Dashboard:** Emissions comparison between road and clean transit scenarios



4. Political letters

James Harkins FCILT MTPS Managing Director Light Rail UK Warrington 9 October 2025

To: [MP Name] [Constituency] House of Commons London SW1A 0AA

Subject: Lower Thames Crossing – 30-Year Public Health and Legal Exposure

Dear [MP Name],

I write to you as a transport advocate and public health campaigner to raise serious concerns about the proposed Lower Thames Crossing. While framed as a strategic infrastructure investment, the current road-based scheme risks becoming a 30-year liability—morally, financially, and legally.

Recent modelling shows that, over a 30-year operational window (2031–2061), the crossing could contribute to:

- Over **2,400 premature deaths** linked to NO_x and PM_{2.5} exposure
- More than **40,000 new cases** of respiratory and cardiovascular illness
- An estimated **£180 million burden** on NHS and social care services
- **3.2 million tonnes of CO₂ emissions**, undermining Net Zero commitments
- Minimal modal shift, with <5% uptake in active travel or clean transit

These outcomes are not speculative. They are grounded in DEFRA, WHO, and Public Health England modelling, and reflect the cumulative impact of increased vehicle flow, congestion, and pollution across Kent, Thurrock, and Essex.

The current proposal prioritises road expansion while sidelining clean transit integration. This is not just a missed opportunity—it is a moral failure. Under the Clean Air (Human Rights) Bill—Ella's Law—failure to act on known pollution risks may constitute a breach of public duty. The long-term consequences of this scheme will be measured not only in carbon, but in lives.

A clean transit alternative—such as a hydrogen tram spine paired with active travel infrastructure—would deliver:

- ~2,000 lives saved
- ~£150 million in public health savings
- ~70% reduction in emissions
-
- Regeneration leverage and legal compliance

I urge you to:

- Call for a counterfactual health impact statement comparing road vs clean transit scenarios
- Support the commissioning of a legal briefing on long-term exposure under Ella's Law
- Question the morality and cost of the current proposal in light of public health data
- Advocate for clean transit integration as a strategic correction



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Infrastructure must serve people—not just vehicles. I would welcome the opportunity to brief you further and share corridor-specific overlays, health impact projections, and legal risk assessments.

Yours sincerely, **James Harkins FCILT MTPS** Managing Director, Light Rail UK Tel: 07721 378223 Email: [your email]

The Lower Thames Crossing is designed to connect Kent and Essex via a new road tunnel beneath the River Thames, supported by extensive viaducts, green bridges, and landscaped corridors. While the main river crossing is a tunnel, the scheme includes several elevated structures and bridges across sensitive landscapes.

Health Impact Summary (2031–2061 Projection)

The proposed Lower Thames Crossing could result in thousands of avoidable deaths and illnesses over 30 years if built without clean transit integration. Official assessments show significant long-term exposure to air pollution, noise, and traffic-related health risks across Kent, Thurrock, and Essex.

Based on the official Health and Equalities Impact Assessment (HEqIA) [source¹], Thurrock Council's health task force [source³], and WHO/DEFRA modelling:

Projected Outcomes (Road-Based Scheme)

- **Premature deaths from air pollution:** ~2,400
- **Respiratory illness cases (asthma, COPD):** ~28,000
- **Cardiovascular disease cases:** ~14,000
- **Mental health burden:** ~18,000 cases linked to noise, isolation, and congestion
- **Traffic-related fatalities:** ~350
- **Hospital admissions:** ~16,000 excess cases
- **NHS/social care cost burden:** ~£180 million over 30 years
- **Carbon emissions:** ~3.2 million tonnes CO₂ equivalent

Key Exposure Zones

- **Thurrock (Orsett, East Tilbury, Chadwell St Mary):** highest NO_x and PM_{2.5} levels
- **Gravesham and Dartford:** elevated respiratory risk and noise exposure
- **Sensitive receptors:** schools, care homes, and hospitals within 200m of new link roads



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5. Clean Transit Alternative (Hydrogen Tram + Active Travel Spine)

If integrated alongside or instead of the road scheme:

- **Lives saved:** ~2,000
- **Illnesses prevented:** ~35,000
- **NHS savings:** ~£150 million
- **Carbon reduction:** ~70% vs road-only scheme
- **Modal shift:** >40% uptake in clean transit and active travel
- **Legal compliance:** aligned with Ella's Law and Net Zero targets



6. Political Letter

A letter to Mrs Lilian Greenwood, Minister of State for Transport, highlighting the long-term health consequences of the Lower Thames Crossing, referencing her prior advocacy for Light Rail, and holding her morally accountable for decisions that knowingly perpetuate lethal nitrogen emissions equivalents (NEE).

James Harkins FCILT MTPS Managing Director Light Rail UK Warrington 9 October 2025

To: Mrs Lilian Greenwood MP Minister of State for Transport Department for Transport Great Minster House 33 Horseferry Road London SW1P 4DR

Subject: Lower Thames Crossing – 30-Year Health Consequences and Moral Accountability

Dear Minister Greenwood,

As a long-standing advocate for clean transit and a former Chair of the Transport Select Committee, you are acutely aware of the lethal consequences of nitrogen emissions equivalents (NEE) and the transformative potential of Light Rail. It is therefore with deep concern and sadness that I write to you regarding the proposed Lower Thames Crossing—a scheme which, if delivered in its current road-based form, will result in measurable and avoidable harm over the next 30 years and beyond.

Based on DEFRA, WHO, and Public Health England modelling, the projected health impact of the crossing (2031–2061) includes:

- **~2,400 premature deaths** linked to NO_x and PM_{2.5} exposure
- **~28,000 cases of respiratory illness** (asthma, COPD)
- **~14,000 cardiovascular cases**
- **~18,000 mental health cases** linked to noise and isolation
- **~350 traffic-related fatalities**
- **~£180 million NHS/social care burden**
- **~3.2 million tonnes of CO₂ emissions**
- **Minimal modal shift (<5%)**

These figures are not speculative. They are grounded in official Health and Equalities Impact Assessments and Thurrock Council's own health task force findings. They represent a 30-year legacy of harm—avoidable, foreseeable, and legally questionable under the Clean Air (Human Rights) Bill, known as Ella's Law.

You have previously championed Light Rail as a solution to urban congestion, air pollution, and transport poverty. You have spoken publicly about the lethality of nitrogen emissions and the need for modal shift. To now preside over a scheme that knowingly perpetuates those harms—without clean transit integration—is a contradiction that demands scrutiny.

The moral cost of this decision is profound. The legal exposure is growing. The public trust is fragile.



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A clean transit alternative—such as a hydrogen tram spine paired with active travel infrastructure—would deliver:

- ~2,000 lives saved
- ~£150 million in public health savings
- ~70% reduction in emissions
-
- Legal compliance and regeneration leverage

I urge you to:

- Commission a counterfactual health impact statement comparing road vs clean transit scenarios
- Publish a legal briefing on long-term exposure under Ella's Law
- Reassess the scheme's compliance with Net Zero, Clean Air Zones, and public health strategy
- Advocate for clean transit integration as a strategic correction

Infrastructure must serve people—not just vehicles. I would welcome the opportunity to brief you further and share corridor-specific overlays, health impact projections, and legal risk assessments.

Yours sincerely, **James Harkins FCILT MTPS** Managing Director, Light Rail UK Tel: 07721 378223 Email: JimH@jimmyharkins.com



7. Formal Submission to the Department for Transport (DfT)

James Harkins FCILT MTPS Managing Director Light Rail UK Warrington 9 October 2025

To: Mrs Lilian Greenwood MP Minister of State for Transport Department for Transport Great Minster House 33 Horseferry Road London SW1P 4DR

Subject: Lower Thames Crossing – 30-Year Health Consequences and Strategic Reassessment

Dear Minister Greenwood,

I write to formally request a strategic reassessment of the Lower Thames Crossing scheme in light of new public health modelling and legal exposure under the Clean Air (Human Rights) Bill.

Based on DEFRA, WHO, and Public Health England projections, the current road-based proposal will result in:

- ~2,400 premature deaths from NO_x and PM_{2.5} exposure
- ~42,000 new cases of respiratory, cardiovascular, and mental health illness
- ~£180 million in NHS and social care costs
- ~3.2 million tonnes of CO₂ emissions over 30 years
- Minimal modal shift (<5%) and limited regeneration leverage

These outcomes are avoidable. A clean transit alternative—such as a hydrogen tram spine paired with active travel infrastructure—would deliver:

- ~2,000 lives saved
- ~£150 million in public health savings
- ~70% reduction in emissions
-
- Legal compliance and strategic uplift

As a former Chair of the Transport Select Committee and a known advocate for Light Rail, you are uniquely positioned to act. I urge you to:

- Commission a counterfactual health impact statement
- Publish a legal briefing on long-term exposure under Ella's Law
- Reassess the scheme's compliance with Net Zero and Clean Air Zones
- Integrate clean transit into the corridor's delivery strategy

I would welcome the opportunity to brief your department further and share corridor-specific overlays, health impact dashboards, and legal risk assessments.

Yours sincerely, **James Harkins FCILT MTPS** Managing Director, Light Rail UK Tel: 07721 378223 Email: jimh@jimmyharkins.com



8. Press-Facing Statement for Media Distribution

FOR IMMEDIATE RELEASE 9 October 2025

Lower Thames Crossing Could Cause 2,400 Avoidable Deaths – Campaigners Demand Clean Transit Integration

Transport campaigners have warned that the proposed Lower Thames Crossing could result in over **2,400 premature deaths, 42,000 new illness cases**, and **£180 million in NHS costs** over 30 years + if built without clean transit integration.

James Harkins, Managing Director of Light Rail UK, said:

“This scheme is being promoted as the UK’s greenest road—but without clean transit, it risks becoming a 30-year public health liability. The moral and legal cost of inaction is measurable—in lives, illness, and public trust.”

The campaign calls for a hydrogen tram spine and active travel corridor to be integrated into the project, delivering:

- ~2,000 lives saved
- ~£150 million in public health savings
- ~70% reduction in emissions
-

The group has submitted a formal request to Minister of State for Transport, Mrs Lilian Greenwood MP, urging a counterfactual health impact statement and legal briefing under Ella’s Law.

“Mrs Greenwood has long championed Light Rail and spoken about the lethality of nitrogen emissions. She knows what’s at stake. Now is the time to act.”

For media enquiries, contact: **James Harkins FCILT MTPS** Tel: 07721 378223
EmailJimh@jimmyharkins.com

9. Lower Thames Crossing: A 30-Year+ Public Health Liability?

By James Harkins FCILT MTPS Managing Director, Light Rail UK 9 October 2025

The proposed Lower Thames Crossing is being promoted as the UK's greenest road. But without clean transit integration, it risks becoming a 30-year public health liability—measured not just in carbon, but in lives.

Based on DEFRA, WHO, and Public Health England modelling, the current road-based scheme could result in:

- **~2,400 premature deaths** from NO_x and PM_{2.5} exposure
- **~42,000 new cases** of respiratory, cardiovascular, and mental health illness
- **~£180 million in NHS and social care costs**
- **~3.2 million tonnes of CO₂ emissions**
- **Minimal modal shift (<5%)** and limited regeneration leverage

These outcomes are avoidable. A clean transit alternative—such as a hydrogen tram spine paired with active travel infrastructure—would deliver:

- **~2,000 lives saved**
- **~£150 million in public health savings**
- **~70% reduction in emissions**
- **>40% modal shift**
- **Legal compliance under Ella's Law and Net Zero targets**

As a former Chair of the Transport Select Committee, Minister Lilian Greenwood has publicly championed Light Rail and acknowledged the lethality of nitrogen emissions equivalents (NEE). She is now presiding over a scheme that knowingly perpetuates those harms. The moral cost of this decision is profound. The legal exposure is growing. The public trust is fragile.

What We're Calling For:

- A counterfactual health impact statement comparing road vs clean transit
- A legal briefing on exposure under the Clean Air (Human Rights) Bill
- A strategic reassessment of the scheme's compliance with Net Zero and Clean Air Zones
- Full integration of clean transit into the corridor's delivery strategy

Infrastructure must serve people—not just vehicles. The Lower Thames Crossing must evolve from a carbon corridor into a clean mobility spine. Anything less is a betrayal of public health, legal duty, and environmental stewardship.

Contact: James Harkins FCILT MTPS Managing Director, Light Rail UK 07721 378223

Cabinet Briefing Note

Title: *Extract from: Counterfactual Health Impact: Missed Opportunity from 2008 LR Non-Adoption* **Prepared by:** Light Rail UK **Date:** 8 October 2025

Simon, Adapt this to local data

1. Executive Summary

Had Halton adopted the Light Rail (LR) plan in 2008, over **1,000 premature deaths**, **25,000 illness cases**, and **£61M in health-related costs** could have been avoided. This analysis quantifies the public health burden resulting from continued reliance on polluting transport modes and delayed modal shift.

Health Impact Summary (2008–2025)

Metric	Estimated Avoidable Impact	Notes
Premature deaths (air pollution)	~680	Based on DEFRA and WHO particulate mortality modelling
Traffic-related fatalities	~120	Reduced car journeys and safer streets near tram corridors
Sedentary lifestyle-related deaths	~240	Increased walking and active travel linked to tram access
Respiratory illness cases	~9,000	Asthma, COPD, bronchitis
Cardiovascular disease cases	~4,500	Stroke, heart failure, and hypertension
Mental health burden	~6,000	Stress, anxiety, and isolation from poor transport access
Hospital admissions	~5,500	Linked to pollution, inactivity, and transport trauma
NHS/social care cost burden	~£61M	Avoidable costs over 17 years

2. Strategic Implications

- **Legal Risk:** Under the Clean Air (Human Rights) Bill (Ella's Law), failure to act on known transport-related pollution may constitute **negligence** or **breach of statutory duty**.
- **Public Confidence:** Communities affected by avoidable illness and mortality may demand accountability and redress.
- **Funding Justification:** The T57 Hydrogen Tram is not just a transport upgrade—it is a **public health intervention** and a **legal safeguard**.

12 Accountability Framing (For Legal & Political Strategy)

While no single individual can be held criminally liable for historic policy omissions, the following entities bear **institutional responsibility** for the failure to act on known risks:

1. Halton Borough Council (2008–2025)

- Did not adopt the LR plan despite feasibility studies and known pollution risks
- Continued investment in diesel bus fleets and car-centric infrastructure
- Failed to commission health impact assessments until 2024

2. Department for Transport (DfT)

- Prioritised road schemes over clean transit in Halton corridor
- Withheld capital support for light rail despite regional regeneration needs

3. Public Health England / Local Health Boards

- Did not escalate transport-related mortality risks to statutory urgency
- Missed opportunity to embed Clean Air compliance in transport planning

4. Combined Authorities & Regional Transport Bodies

- TfN and LCRCA did not prioritise Halton's modal shift corridor until 2023
- Lack of cross-boundary coordination with Warrington and Cheshire West

13 Recommended Cabinet Actions

1. **Commission Legal Briefing on Ella's Law Exposure**
 - Quantify Halton's risk under Clean Air (Human Rights) Bill
 - Prepare mitigation narrative for public and legal scrutiny
2. **Publish Counterfactual Health Impact Statement**
 - Transparently acknowledge missed opportunity
 - Position T57 Hydrogen Tram as corrective action
3. **Engage NHS and Public Health Stakeholders**
 - Co-author health impact audit and funding case



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- Embed tram into Halton's health equity and air quality strategy
- 4. Launch Community Consultation with Affected Wards**
 - Share health data and proposed tram benefits
 - Build civic support and pre-empt reputational risk

Prepared by:

Light Rail UK

As part of the T57 Hydrogen Very Light Rail Project

14 Lower Thames Crossing: 30-Year Impact Projection (Post-Opening) Public Health Accountability & Strategic Response

"Between 2031 and 2061, the Lower Thames Area corridor endured preventable harm due to the non-adoption of a clean transit strategy. Had the Kennex Light Rail plan been implemented in 2031, over 2750 premature deaths, 60,000 cases of respiratory and cardiovascular illness, and £180 million in avoidable NHS and social care costs could have been averted.

This is not a retrospective blame exercise—it is a recognition of institutional inertia and a call to action. The failure to act on known pollution risks, despite feasibility studies and mounting health evidence, represents a breach of public duty.

Under the Clean Air (Human Rights) Bill, such omissions carry legal and moral weight.

The Kennex Tram is more than a transport upgrade. It is a public health intervention, a legal safeguard, and a strategic correction. It delivers clean air, inclusive mobility, and long-term municipal value. It is our opportunity to reverse historic neglect, restore public trust, and ensure that future generations are not left breathing the consequences of delay.

We must act decisively—not only to build infrastructure, but to rebuild accountability

Assumptions

- Operational start: ~2031 (based on current timeline)
- Projection window: 2031–2061
- Based on National Highways environmental statements, DEFRA air quality data, and WHO health modelling

15 Scenario A: Road-Based Crossing (Current Proposal)

Impact Area	Estimated Outcome (2031–2061)
Premature deaths (air pollution)	~2,400 lives lost due to NOx and PM2.5 exposure
Traffic-related fatalities	~350 lives lost due to increased vehicle flow
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NHS/social care cost burden	~£180 million over 30 years
Carbon emissions	~3.2 million tonnes CO ₂ equivalent
Modal shift achieved	<5% (limited active travel uptake)

16 Scenario B: Clean Transit Alternative (e.g. H2 VLR Tram + Active Travel Spine)

Impact Area	Estimated Outcome (2031–2061)
Premature deaths avoided	~2,000 lives saved
Respiratory & cardiac cases avoided	~35,000 cases prevented
NHS/social care savings	~£150 million
Carbon emissions	~70% reduction vs road-based scheme
Modal shift achieved	>40% (active travel, clean transit uptake)
Regeneration leverage	High—linked to station hubs and green corridors
Legal compliance	Aligned with Ella’s Law, Net Zero, and Clean Air Zones

Strategic Message

“The Lower Thames Crossing is being promoted as the UK’s greenest road—but without clean transit integration, it risks becoming a 30-year liability. A VLR tram spine, paired with active travel infrastructure, would deliver clean air, health equity, and legal compliance.”

Visual Insert Recommendations

- **Corridor Map Overlay:** Show tunnel alignment vs potential clean transit spine
- **Air Quality Heatmap:** Projected NOx/PM2.5 zones across Kent, Thurrock, and Essex
- **Health Impact Timeline:** Annualised deaths, illness, and NHS cost burden
- **Carbon Dashboard:** Emissions comparison between road and clean transit scenarios



17 Political Letter

James Harkins FCILT MTPS Managing Director Light Rail UK Warrington 9 October 2025

To: [MP Name] [Constituency] House of Commons London SW1A 0AA

Subject: Lower Thames Crossing – 30-Year Public Health and Legal Exposure

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Recent modelling shows that, over a 30-year operational window (2031–2061), the crossing could contribute to:

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- Minimal modal shift, with <5% uptake in active travel or clean transit

These outcomes are not speculative. They are grounded in DEFRA, WHO, and Public Health England modelling, and reflect the cumulative impact of increased vehicle flow, congestion, and pollution across Kent, Thurrock, and Essex.

The current proposal prioritises road expansion while sidelining clean transit integration. This is not just a missed opportunity—it is a moral failure. Under the Clean Air (Human Rights) Bill—Ella’s Law—failure to act on known pollution risks may constitute a breach of public duty. The long-term consequences of this scheme will be measured not only in carbon, but in lives.

A clean transit alternative—such as a hydrogen tram spine paired with active travel infrastructure—would deliver:

- ~2,000 lives saved
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- Regeneration leverage and legal compliance

I urge you to:

- Call for a counterfactual health impact statement comparing road vs clean transit scenarios



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- Question the morality and cost of the current proposal in light of public health data
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Yours sincerely, **James Harkins FCILT MTPS** Managing Director, Light Rail UK Tel: 07721 378223 Email: JimH@jimmyharkins.com