

Reading Lovegrove

What the UK Cabinet Office's review of the HS2 Civil Service failures tells us about ALTO

ALTO HSR Citizen Research Initiative | May 2026

Introduction

In May 2026 the UK Cabinet Office published a review by Sir Stephen Lovegrove, former National Security Adviser and former Permanent Secretary of the Ministry of Defence, of the implications for the Civil Service and wider public sector of the findings of the 2025 James Stewart Review into the governance and assurance of HS2 and other major transport projects. The Lovegrove Review is short, but it is unusually candid. It is also unusually current: it was commissioned by the Prime Minister and the then Cabinet Secretary, and its purpose was not to revisit why HS2 went wrong as a project, but to identify how a senior G7 civil service failed to see the problem coming and act on it.

That makes it directly relevant to ALTO. The institutional architecture of the two projects is closely parallel. Both are large, electrified, dedicated high-speed rail corridors delivered through an arm's-length corporate vehicle, funded entirely from the public purse, overseen by a sponsoring department, and politically framed as transformational national infrastructure. The Lovegrove Review is, in effect, a contemporaneous statement by one G7 government on what oversight of such a vehicle requires, what specifically goes wrong when those requirements are not met, and what that costs the taxpayer.

This brief summarises the Lovegrove findings most relevant to ALTO, identifies the structural parallels, notes the direct overlap of corporate actors between the two projects, and considers what the Review's recommendations would imply if applied to ALTO's current trajectory.

A published reference class for cost escalation

The single most useful artefact in the Lovegrove Review is its published trajectory of HS2 Phase 1 cost estimates over time, all expressed in a 2019 price base for comparability. Phase 1 is the London to West Midlands section of approximately 225 km — the only section now being constructed, after the cancellation of Phase 2 north of Birmingham.

Year	Phase 1 cost estimate (£bn, 2019 prices)
2012	20.5
2013	26.8
2020	44.6
2023	54
2024	66
2026	82.2

In 2019 prices, the 2026 estimate is more than four times the 2012 estimate for the same 225 km of railway. The 2024-to-2026 increment alone (£66bn to £82.2bn) is larger than the entire original 2012 budget. This is a 14-year, real-terms, official-source trajectory for a Phase 1 corridor whose construction began only at the start of the period. It is the empirical case that there exists at least one G7 high-speed rail project, started in the past decade, whose costs are now more than four times the figure on which Parliament originally relied.

For ALTO, the importance of this trajectory is twofold. First, the comparator is not ancient: HS2 Phase 1 was at roughly the same stage of pre-construction maturity in 2012-2015 that ALTO is at now. Second, the trajectory is now an official UK government data point, not a critic's reconstruction, not an academic estimate, but a figure published by the Cabinet Office today. That removes one of the standard rhetorical defences used in ALTO's framing, which is that international comparators are contested or speculative.

A directly parallel Canadian cost-escalation trajectory has already occurred on the same corridor ALTO now proposes to serve. In 2016, the federal government funded a serious study of High Frequency Rail (HFR) for the Toronto-Québec City corridor: 170-177 km/h conventional rail on largely dedicated tracks, costed at under C\$5B in 2016 dollars, or under C\$10B inflation-adjusted to 2024. A December 2021 Joint Project Office Business Case prepared by VIA Rail Canada and the Canada Infrastructure Bank confirmed the preferred option. In March 2022, the government issued a Request for Expressions of Interest that pivoted the procurement to a Design-Build-Finance-Operate-Maintain (DBFOM) structure and explicitly invited proposals for speeds above 200 km/h. In February 2025, without publishing a side-by-side comparison of the HFR and high-speed options, the government confirmed the project would become ALTO at 300 km/h+, costed at C\$80-120B. The escalation from HFR's published baseline to ALTO's announced range is a sixteen-to-twenty-four-fold increase, on a roughly decade-long horizon. This is of the same order of magnitude as, and on a comparable timescale to, the four-fold real-terms increase Lovegrove documents for HS2 Phase 1. The HS2 cost-trajectory table above is a key comparator for a transformation that has already occurred on the project Canada is now committing to deliver.

The "original sins" — and their ALTO analogues

Lovegrove summarises the consensus diagnosis of why HS2 cost forecasts proved so wrong. The list is short and direct:

- Original gold-plating of the high-speed concept, with a focus on the highest possible speeds, producing bespoke and highly engineered designs.
- A decision to begin construction at the hardest points of the route — Phase 1, between London and the West Midlands.
- Changing objectives and political priorities.
- Award of the Main Works Civils Contracts at insufficient design maturity, and on terms which did not manage risk.
- Costs and risks badly underestimated.

Every item on that list has a current ALTO analogue.

The pursuit of 300 km/h electrified high-speed running across a route with the geological and ecological profile of the proposed southern corridor is itself a gold-plating decision. Reference-class analysis shows that the marginal capital cost of moving from a conventional or near-conventional dedicated passenger railway to a fully grade-separated electrified high-speed alignment is the dominant driver of total programme cost — and is the primary mechanical reason the HFR-to-ALTO transformation generated the cost escalation set out above. An alternative configuration — a lower design speed in the order of 200 km/h, on a route making use of the 401 corridor rather than a new southern alignment across Eastern Ontario — would shift the project into a different cost class and a different environmental and community-impact profile. Whether such a configuration is preferable, on a full set of criteria, is precisely the comparative question the Lovegrove framework says government should answer before a Final Investment Decision.

The HS2 phasing parallel is not exact: ALTO plans to begin with the Ottawa-to-Montréal segment, which involves real engineering complexity including Leda clay deposits and the Ottawa River crossing, but is not the hardest section of the proposed corridor. The more challenging geological and ecological terrain — the southern Eastern Ontario sections including the Frontenac Arch Biosphere, karst zones, and extensive Leda clay — would remain to be worked through downstream of any Notice-to-Proceed-equivalent decision. The category of risk Lovegrove identifies nonetheless applies. Committing to a DBFOM contractual architecture spanning the full corridor before the hardest sections have been designed in detail locks in contractual obligations under the same design-immaturity conditions HS2 entered when it awarded its Main Works Civils Contracts. The HS2 mistake was not solely the geographical choice to start in the Chilterns; it was the contractual choice to commit before maturity, and that part of the parallel remains direct.

ALTO is being procured under a Design-Build-Finance-Operate-Maintain (DBFOM) structure with the Cadence consortium. DBFOM differs from HS2's Main Works Civils Contracts in scope, duration, and the transfer of operational responsibility to the private partner. The underlying contractual issue Lovegrove and the Stewart Review identify nonetheless applies to both: committing to long-term contractual obligations before route, design, and risk are mature systematically constrains the leverage government can later exercise to hold contractors to schedule or cost.

Sir Jon Thompson, the Executive Chair of HS2 Ltd, set this out directly in evidence to the House of Commons Transport Committee on 10 January 2024. He told the Committee that the Government and the company had decided to let cost-plus contracts under which 99% of the financial risk sat with the Government and only 1% with the contractor, describing the arrangement as extraordinary. He further observed that under a fixed-percentage fee, a contractor who runs over budget receives the same percentage of a much larger number, which effectively incentivises overspending rather than restraining it. That is the contractual architecture the Lovegrove Review identifies as the proximate financial mechanism of HS2's failure. The risk allocation under the ALTO co-development contract with the Cadence consortium has not been publicly disclosed. Whether it replicates, mitigates, or improves on the HS2 risk allocation cannot be assessed from public information. Under Lovegrove's framework, that absence of disclosure is itself the relevant problem: the contractual terms that drive cost outcomes over the lifetime of a project are exactly the terms that the sponsor department, Parliament, and the Auditor General require visibility into before, not after, commitment.

The Crown corporation problem

Lovegrove's most pointed structural critique is of HS2 Ltd's status as a Company Limited by Guarantee with government as sole guarantor. The Review concludes that this construct was institutionally incoherent. The arguments traditionally offered for it — independence from government, ability to hire at market rates, commercial discipline, decision-making at commercial speed — are real benefits, but they only work when the entity has genuine third-party shareholders with capital at risk.

Company structures are arguably fundamentally ill-suited to this type of arrangement.

HS2 Ltd received 100% of its funding from government grant-in-aid. There were no third-party shareholders, no commercial counterparties with capital at risk, no governance mechanisms forcing cost-benefit discipline from below. The advantages of the company form were thus retained only in name. What HS2 Ltd actually got was the freedom to hire at private-sector rates and to operate at arm's length from ministers, without the corresponding discipline of having investors who would have insisted on cost control.

ALTO HSR Inc. is in a structurally comparable position to HS2 Ltd at the corporate level. It is a federal Crown corporation, 100% publicly funded, with no third-party shareholders in the corporation itself. The contractual relationship with the Cadence consortium under the DBFOM arrangement is not publicly disclosed in sufficient detail to assess how risk, financing, and return are allocated between the parties or over what time horizon. What can be observed from the public record is the corporate-form question: a Crown corporation receiving 100% of its funding from the federal purse, used to obtain independence from political cycles and freedom to hire specialist talent, is in the same structural category as HS2 Ltd — the category Lovegrove diagnoses as institutionally incoherent because the disciplines that normally accompany the corporate form do not flow from grant-in-aid funding alone.

The "fortress mentality" and the failure of management information

Beyond structure, Lovegrove identifies a cultural pathology that should be familiar to anyone tracking ALTO's public communications. The Review records that HS2 Ltd's board, and particularly its executive management and chair, developed what interviewees described as a fortress mentality — becoming cheerleaders not only for HS2 but for the cause of high-speed rail in the UK more generally, framing the project as ushering in a new era. The Review is unambiguous that this conception of the company's role was misguided. Transport policy is for ministers; the company's job is delivery within scope and budget.

The Board, and especially the executive management and Chair, had adopted a "fortress mentality" and had become "cheerleaders", not merely for HS2 but for the cause of high-speed rail in the UK more generally.

This cultural finding matters because it generated a downstream information failure. Lovegrove quotes board members and reviewers describing the management information packs given to the HS2 Ltd board as forming a veil behind which less good news became difficult to assess or even identify, with the same problem persisting unaddressed years later — packs remaining unwieldy, format-inconsistent, and lacking prioritisation. Because the same data flowed through to government, the sponsor department was working from the same compromised information.

The CRI's post-consultation work has documented precisely this pattern in ALTO's public outputs. The disclosures in Q-923 on cost, ridership, and the self-sustaining claim use confidence framings that do not survive parametric stress-testing against McGill TRAM and Munk School sources. The marketing pivot identified through the Cossette ATI disclosures, and the unanswered status of TRAN Report 18 — published by the House of Commons Standing Committee on Transport, Infrastructure and Communities and left without a government response when Parliament was prorogued — are the documentary symptoms of an executive culture that has begun to treat advocacy as primary and delivery of information as secondary. Lovegrove's framework gives that observation a name and an authoritative diagnostic basis.

The candour of Sir Jon Thompson's evidence to the Transport Committee on 10 January 2024 is worth pausing on, because it confirms the Lovegrove diagnosis from inside the institution. Thompson — himself a former Permanent Secretary at HM Revenue and Customs and at the Ministry of Defence, and a double-qualified accountant — told the Committee that when he joined the HS2 board in 2021 he was struck by the lack of data and scrutiny of programme finances; that the management information presented to the board was not robust enough to assess whether main civils contractors were meeting productivity targets; and that significant improvement only arrived in October 2023, two and a half years later, after pressure from non-executive directors and the involvement of a new finance director together with the Infrastructure and Projects Authority, HM Treasury, and the Cabinet Office. He described it as a shocking thing to say, but acknowledged that the quality of board-level management information had not been good enough. That is the senior executive of a major UK arm's-length delivery body, on the parliamentary record, confirming the exact information failure the Lovegrove Review now documents externally.

The Notice to Proceed moment

The Lovegrove Review devotes substantial attention to the Notice to Proceed decision in early 2020, when government formally committed to construction of HS2 Phase 1. The sequence is instructive. The Oakervee Review, an independent panel chaired by a former HS2 Ltd chair, recommended proceeding with the full route. Its report was published shortly after a Prime Minister–Chancellor–Secretary of State trilateral meeting had already reached the same conclusion. The formal Notice to Proceed was confirmed in March 2020.

Lovegrove's criticism is not that the Oakervee Review was conducted in bad faith. It is that the official advice provided to ministers alongside the Oakervee report did not address alternative ways of delivering the project — as distinct from alternative projects — including options which would have led to a delay in construction while alternative designs, options, or contractual arrangements were sought. The external review effectively substituted for official advice on strategic choice.

Reviews by external actors (including this one) have their place in informing policy formulation, but they should not substitute for official advice.

This is Lovegrove's Recommendation 14, and it is the recommendation with the most direct bearing on where ALTO now sits. The work being produced by Cadence under its co-development contract, the public outputs of ALTO HSR Inc., and the materials prepared for the parliamentary process are all in danger of functioning as external review substituting for official advice on alternatives. The category of alternative Lovegrove insists should not be foreclosed before a Final Investment Decision — different speed classes, different route alignments, different contractual structures, different phasing — is exactly the category that has not been comparatively analysed for ALTO. A lower design speed in the order of 200 km/h, and a route making use of the 401

corridor rather than a new southern alignment, are concrete examples of the alternatives that would normally be costed and compared at this stage. They have not been.

The CRI's March 2026 brief *From HFR to ALTO* already constitutes the kind of structured comparison Lovegrove says government itself should produce. It identifies eight pivotal changes that occurred between the December 2021 HFR Business Case and the February 2025 confirmation of ALTO as a high-speed system, and documents the absence of a published side-by-side cost-benefit comparison between the two options. That brief sets out what the comparative analysis would have needed to address: travel-time benefit per dollar; carbon-accounting for new greenfield construction versus use of existing corridors; ridership reconciliation between VIA Rail's earlier HSR forecast and ALTO's much larger projection; the risk allocation under a sixty-year private concession; and the interim service consequences for corridor communities during a fifteen-to-twenty-year construction period. The point under Lovegrove's framework is not that citizen research is a substitute for official advice. It is that when an arm's-length delivery body and the sponsor department do not produce that comparison themselves, and the government nonetheless proceeds, the conditions Lovegrove identifies as the proximate cause of the HS2 failure are present.

Vindication of the dissenting voice

One paragraph of the Lovegrove Review deserves to be quoted at length in any document about ALTO citizen research. Discussing Lord Berkeley's dissenting report from the Oakervee panel, which cast doubt on HS2's costings, schedule, and the capability of HS2 Ltd to manage the programme, Lovegrove writes that there is no escaping the fact that the thrust of Berkeley's judgements, particularly about company capability, have proved correct, and his estimates much closer to today's outturn than those on which ministers ultimately gave the go-ahead.

There is no escaping the fact that the thrust of his judgements, in particular about the capability of the Company to manage the project, have proved to be correct, and his estimates much closer to today's outturn than those upon which ministers ultimately gave the go-ahead.

Berkeley's report was dismissed at the time as methodologically unfounded and was excluded from the Oakervee panel's formal conclusions. Six years later, the UK Cabinet Office has stated on the public record that he was substantively right. The institutional process designed to test his concerns rejected them; the underlying analysis was vindicated by events. This is the most authoritative possible vindication of the model on which citizen research into major infrastructure operates. It does not validate every dissenting analysis automatically — Lovegrove notes that some of Berkeley's specific methodological steps were questionable and that some of the cost increases arose from factors Berkeley did not identify — but it establishes that the dismissal of dissenting reference-class work as inherently less credible than insider forecasts has now been formally repudiated by one G7 government.

Risk communication: from P-values to plain English

Lovegrove identifies a specific technical failure in how risk was communicated to ministers in the lead-up to the Notice to Proceed. The HS2 advice used P-value terminology — statistical confidence levels expressed in percentage terms — which Lovegrove notes are standard in the construction and infrastructure industry but are not easily understood by a lay reader. Worse, the framing used in the final January 2020 advice described HS2's budget as containing contingency sufficient to absorb cost increases observed in 70-75% of comparable projects.

Lovegrove dismantles this framing directly. The Review observes that it was, in fact, impossible to make these kinds of comparisons securely at that point with the quality of information then available, and that articulating the position in this way gave rise to a false sense of security. The recommendation that follows — that a simpler taxonomy of confidence, possibly mirroring intelligence-assessment language (low / medium / high), be developed for senior decision-makers — is one of the Review's most operationally useful suggestions.

The relevance to ALTO is direct. The \$60-90B figure that has circulated in ALTO's public framing implicitly invokes a reference class which, on examination, does not support the precision implied. The CRI's reference-class central-cost prediction work — which produces a figure of approximately \$143B once Engineering Complexity and Community Friction multipliers are applied to comparable international HSR programmes — is itself a confidence assessment, and one whose presentational discipline (range rather than point estimate, multivariate basis, named comparators) meets the Lovegrove standard that the official ALTO framing does not.

Two Cadence members were inside HS2

Two of the six members of the Cadence consortium selected by Canada to design, build, finance, operate and maintain ALTO were directly embedded in HS2 work during the period that the Lovegrove Review now criticises.

AtkinsRéalis, the Canadian engineering firm that rebranded from SNC-Lavalin in 2023 and which is the lead Canadian engineering member of Cadence, was part of the CH2M / Atkins / SENER Engineering Delivery Partner joint venture for HS2 Phase One. That ten-year contract was awarded in 2016 and was valued between £250 million and £350 million. The Engineering Delivery Partner role placed Atkins inside HS2 Ltd, fully integrated, with explicit responsibility for supporting the preparation and procurement of the Main Works Civils Contracts — the contracts that the Lovegrove Review identifies as awarded at insufficient design maturity and on terms which did not manage risk. Atkins also held a separate preliminary-design contract for HS2's Country South section and undertook the Environmental Impact Assessment work for the Northern Rural area. Atkins's UK arm was acquired by SNC-Lavalin in 2017, mid-way through the HS2 Engineering Delivery Partner contract, and is now part of AtkinsRéalis.

SYSTRA, the French rail engineering firm and a Cadence member, was part of the Mott MacDonald / SYSTRA design joint venture working alongside the Balfour Beatty VINCI construction joint venture on HS2 Lots N1 and N2 of the Main Works Civils Contracts — the 90-km West Midlands stretch including the Long Itchington Wood Green tunnel and the Birmingham approaches. SYSTRA was also a partner in the BBV-SYSTRA (BBVS) joint venture for the Old Oak Common station in London. SYSTRA's role on HS2 was thus across both design and construction-management functions on the very contracts whose financial architecture HS2's own chair has publicly criticised before the UK Public Accounts Committee.

These observations are factual, not attributive. The Lovegrove Review is explicit that the institutional failure on HS2 lay primarily with HS2 Ltd's governance and culture and secondarily with the Civil Service, not with the contractor firms per se. Many of the firms involved are world-leading rail engineers, and their inclusion in Cadence reflects that. The point is that two firms whose immediately prior major HSR engagement is now the subject of a Cabinet Office post-mortem on cost control are now central to ALTO's design, build, and ongoing operation under a DBFOM structure. For parliamentarians and analysts considering whether the lessons of HS2 are being absorbed into ALTO's procurement and oversight, this is a fact that warrants disclosure in any briefing material on the project.

Implications for ALTO

Reading the Lovegrove Review across the full set of CRI post-consultation deliverables produces a small number of operational implications.

First, the cost trajectory published by the UK Cabinet Office today — Phase 1 of HS2 having moved from £20.5bn (2012) to £82.2bn (2026) in 2019 prices — is now an official G7 data point in any reference class used to assess ALTO's \$60-90B framing. It belongs in every cost-related submission, briefing letter, and parliamentary communication the Initiative produces between now and a Final Investment Decision.

Second, the structural critique of the Company Limited by Guarantee model — that 100% publicly funded entities cannot deliver the commercial discipline the corporate form is meant to provide — translates directly to ALTO HSR Inc. and supports an argument the CRI has been making from first principles: that the case for Crown-corporation delivery has been overstated and that the discipline its proponents claim does not flow from the structure adopted.

Third, Lovegrove's Recommendation 14, that external reviews not substitute for official advice on alternatives, places a clear analytical obligation on Parliament and the responsible department to ensure that alternative configurations — including lower design speeds and alternative route corridors such as one using the 401 — are formally costed, formally compared, and formally documented as alternative ways of delivering the project's stated objectives before any Notice-to-Proceed-equivalent decision on ALTO is taken. The CRI's standing engagement with the

responsible federal institutions, including ATI work and outreach to MPs, contributes directly to this requirement being met.

Fourth, the vindication of Lord Berkeley's dissenting report by the Cabinet Office in 2026 establishes a public-record precedent for the credibility of structured citizen reference-class analysis in HSR governance. That precedent is now available to be cited.

Fifth, the involvement of AtkinsRéalis and SYSTRA in both projects is a material fact that warrants inclusion in any briefing to parliamentarians or commentators considering whether ALTO's procurement reflects an institutional learning process from HS2 — or whether the same actors are simply being given the same contractual architecture in a different jurisdiction.

Finally, the Lovegrove and Stewart Reviews together represent the most current, most senior statement by a G7 government on what arm's-length high-speed rail delivery requires of a Westminster-system sponsor department. Canada has the same parliamentary architecture, the same Treasury Board controls, the same Crown-corporation tools, the same Public Accounts Committee and Auditor General functions. The lessons set out in the Lovegrove Review are not lessons Canada needs to learn the hard way. They are available now.

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