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**Are Mega Infrastructure Project appraisals appropriate for the twenty-first century? An investigation using High Speed Rail 2**

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Being a dissertation submitted to the faculty of The Built Environment as part of the requirements for the award of **MSc Sustainable Urbanism** at University College London:

I declare that this dissertation is entirely my own work and that ideas, data, and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

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### List of Tables:

Table 1: Research Objectives.....	9
Table 2: Accurate HS2 Costs.....	21

### List of Figures:

Figure 1: Research structure.....	10
Figure 2: PLMCA steps.....	15
Figure 3: Journey times by proposed routes.....	18
Figure 4: HS2 Project timeline.....	18
Figure 5: Revised HS2 route.....	19
Figure 6: Stakeholder map.....	19
Figure 7: Consultation results.....	21
Figure 8: Stakeholder influence.....	23
Figure 9: Wider Stakeholder opinions.....	25
Figure 10: Resident groups synergies.....	26
Figure 11: IBDMP Proposed appraisal model.....	31

### Acronyms:

BaU: Business as Usual  
BCR: Benefit Cost Ratio  
CBA: Cost Benefit Analysis  
CDA: Critical Discourse Analysis  
CIA: Community Impact Assessment  
COVID-19: Coronavirus Disease  
DFT: Department for Transport  
EIA: Environmental Impact Assessment  
GDP: Gross Domestic Product  
HC: House of Commons  
HS2: High Speed Rail 2  
IBDMP: Issue definition, Back-casting, Discussion, MCA design, Propose  
IDF: Ideological Discursive Formation  
IRP: Integrated Rail Plan  
MAMCA: Multi-Actor Multi Criteria Assessment  
MCA: Multi-Criteria Analysis  
MGI: McKinsey Global Institute

MIP: Mega Infrastructure Project

MTP: Mega Transport Project

PLMCA: Policy-led Multi Criteria Assessment

PPP: Public Private Partnership

WEI: Wider Economic Impact

## Table of Contents:

Acknowledgements .....	2
List of tables .....	3
List of figures .....	3
Acronyms .....	3
Abstract .....	7
<b>1. Introduction .....</b>	<b>7</b>
Statement of context.....	9
Research aim.....	9
Research objectives.....	9
Contribution.....	10
<b>2. Methodology.....</b>	<b>10</b>
Critical Discourse Analysis .....	10
Semi-Structured Interviews.....	11
Research ethics.....	11
<b>3. Literature Review.....</b>	<b>12</b>
MIPs and the infrastructure gap .....	12
Appraisal methods .....	12
CBA .....	12
Back-casting.....	13
MCA.....	14
Participation .....	15
Governmentality .....	16
Literary Theories- Research Questions .....	17
<b>4. HS2 Case Study.....</b>	<b>18</b>
<b>5. Results .....</b>	<b>20</b>
Secondary research.....	20
Primary research.....	23
<b>6. Discussion .....</b>	<b>28</b>
Research question 1 .....	28
Research question 2 .....	29
Research question 3 .....	30

Research question 4 .....	31
<b>7. Conclusion.....</b>	<b>32</b>
<b>8. Reflections.....</b>	<b>33</b>
<b>9. Bibliography .....</b>	<b>35</b>
Appendix.....	41
Appendix A.....	41
Appendix B.....	43
Appendix C .....	44
Appendix D .....	46

## **Are Mega Infrastructure Project appraisals appropriate for the twenty-first century? – An investigation using High Speed Rail 2**

### **Abstract:**

Given twenty-first century challenges of spatial inequality, the climate emergency, and the post-pandemic world, it has never been more critical to effectively plan the built environment. Public Private Partnerships (PPPs) are having increasing influence due to their dominance throughout Mega Infrastructure Project (MIP) planning and appraisals. While MIPs carry huge potential to bridge the global infrastructure gap and solve spatial inequality, private investment prioritises economic returns, and governments often incentivise symbols of national development rather than basic infrastructure needs. Cost Benefit Analysis (CBA) and Forecasting appraisal approaches are often used due to their efficiency in determining project objectives (Willis et al., 1998; Lee 2000; Goodman and Hastak, 2006; Annema et al, 2007; World Bank, 2010), however they are inappropriate given the complexity of contextual challenges (Dimitriou, Ward and Wright, 2013). Meanwhile, consultation methods have a history of silencing opposition to get projects approved promptly, rather than gaining insight into public opinion (Carlaw, 2020). Alternative methods such as back-casting and Multi-Criteria Analysis (MCA) have been developed to create socially, environmentally and economically sustainable proposals (Munda, 2008; Dalal-Clayton and Sadler, 2014). Nevertheless, they are often undermined in practice despite their ability to create proposals that better address current challenges.

These themes are explored through High-Speed Rail 2 (HS2); its contemporary nature helps determine whether these issues are still present within the UK, aiding suggestions for policy and practice. The potential of using MCA is discussed in reference to the case study with mentions to impacts of its wider use, facilitating the proposal of a new model for the future of planning.

### **Introduction:**

One of the key challenges of the twenty-first century is the global infrastructure gap, creating inequality across countries, nations, regions, and cities (The McKinsey Global Institute, 2013, 2016). Dimitriou and Field (2020) define this gap as the difference between current global investment in infrastructure, and estimated future worldwide infrastructure needs. The intention of defining the gap was to justify investment in worldwide infrastructure, and enhance economic and social development. It is generally agreed across theory and practice that the gap is between \$2-4 trillion (OECD, 2017; Milken Institute, 2019), however where to focus investment is contested amongst stakeholders. The MGI (2016) report suggests that around 60 percent of investment should focus on emerging economies and provision of essential services and needs, to ensure equal access to a good quality of life. Nevertheless, following the 2008 financial crisis, coupled with globalisation influences, infrastructure has opened to the private sector and follows a neoliberal investment strategy (Dimitriou, 2009). Since infrastructure is now largely funded by global corporations and banks, investment is focussed on stable economies and financial returns (Milken Institute, 2019). Consequently, there is widespread scepticism over the outsourcing to the private sector, as MIPs are now seen as an exchange value rather than critical infrastructure to support everyday lives (Flyvbjerg, 2014).



Academic consensus is calling for distinction to be made between need and demand, as these terms are too often used interchangeably. Need should refer to purposeful infrastructure such as electricity, clean water, housing, and health care rather than high speed rail services that are beyond aspirational (Dimitriou and Field, 2020). Even within developed countries such as the UK, spatial inequality is large and persistent, with greater disparity across education, health, productivity and pay than many other developed countries. In the UK, average annual earnings in London are 50 percent higher than in the Northeast, and 30 percent higher than the country's average. Former mining communities, seaside towns and outlying urban estates are in urgent need of community support as they suffer from deprivation and crime (Overman, 2022). This is a result of the uneven impacts of globalisation, advances in transport, technological progress, a shift from technical training to university study, and from heavy industry to knowledge-intensive sectors (Dimitriou, 2009). Graham and Marvin (2001) argue that cities and urban regions are continually characterised by polarised landscapes, with the most favoured users and places selectively connected by 'premium' infrastructure networks, by-passing less favoured intervening places.

MIPs are construction projects costing in excess of \$1 billion. They are increasingly seen as agents of change within the global infrastructure gap (Dimitriou and Field, 2020), highlighting the need for effective decision making and appraisals (Flyvbjerg, Bruzelius and Rothengatter, 2003). They hold responsibility for addressing the nation's transport challenges, and require the management of increasingly complex public dynamics (Capka, 2004). However, many academics have pointed to the use of MIPs as symbols of national development rather than to serve local needs and 'bridge the gap' (Dimitriou, 2009). This is generally seen as a consequence of the conventional MIP planning approach, characterised by the interaction between private business and the political establishment, commonly referred to as a PPP. Their power as ultimate decision makers limits the influence of participatory planning and involvement of wider stakeholder groups, and sustains business-as-usual (BaU) practices.

Despite the UK government's levelling up agenda (first introduced in 2014) which aimed to boost economic growth outside of London, there has been little evidence of successful efforts. It is likely that London's position as the financial hub will remain a priority over the performance of the rest of the country (Institute for Fiscal Studies, 2020). Although '*Levelling up the United Kingdom White Paper*' outlines its commitment to ending geographical inequality by improving economic dynamism, it also mentions not sacrificing the success of the most productive towns, cities and counties (HM Government, 2022). However, is it possible to level up an area without levelling down somewhere else?

HS2 was supposedly conceived due to increased rail demand (doubling between 1995 and 2011), and the need to join up Britain to create a more balanced country (HS2, 2019). As Andrew Stephenson (Minister of State at the Department for Transport) announced, the future of Britain's economic success hinges on the ability to connect our cities and towns, and rebalance opportunity (DFT, 2020). Numerous reports detail the potential wider economic impacts (WEIs); however these tend to focus on economic forecasting and CBA. Phase one is intended to have a 1.2:1 central-case Benefit-Cost Ratio (BCR), and both phase one and phase two a BCR of 1.5:1 (DFT, 2020). The use of forecasting and CBA has been heavily criticised due to its inability to recognise contextual changes (Dimitriou, Ward and Wright,

2013), often resulting in infrastructure that is socially and environmentally destructive and poorly reflects local needs.

**Statement of context:**

This dissertation will explore the current appraisal methods used for MIPs, and the limited use of participatory methods within planning and appraisals. It questions the dominance of PPPs, testing the theory that their influence leads to the construction of flagship projects (SMEC, 2001), rather than those that provide a solution to national and regional inequality.

While it is clear that the use of CBA and forecasting is inadequate for the twenty-first century, its continued use remains fairly unquestioned, despite context appropriate alternatives such as back-casting and MCA. Participatory methods present an opportunity to gather views of a wider range of stakeholders to achieve a holistic understanding of the strengths and weaknesses of proposals, however they are often not used. Public consultations often silence opposition rather than gain insight from the communities the projects are intended to serve.

The study will use HS2 to examine the current appraisal methods deployed in the UK. Particularly pertinent due to the governments levelling up agenda, and promises to tackle regional inequality (Newman, 2021), despite its history of prioritising London's growth as the economic, financial and transportation hub. Speculation over the legitimacy of the appraisal method used for HS2, as well as controversy over the supposed benefits of the project, will provide an interesting investigation of different stakeholder's motivations.

**Research aim:**

The aim of this research is to investigate the appropriateness of current MIP appraisal methods, and suggest a framework that will result in infrastructure that better addresses the challenges of the twenty-first century. This is an attempt to refocus on social and environmental concerns through wider stakeholder engagement, rather than prioritising the growth economy and PPP incentives.

**Research objectives:**

Research Objective	Research Method
Investigate the appropriateness of current appraisal methods	Secondary data: Critical literature review
Explore and assess alternative methods	Secondary data: Critical literature review
Unravel the appraisal and consultation process used for HS2	Secondary data: CDA of PPP sources Primary data: Semi-structured interviews
Evaluate the effectiveness of HS2 appraisals and consultations	Secondary data: CDA of PPP sources Primary data: Semi-structured interviews
Suggest more appropriate appraisal techniques	Analysis of the primary and secondary data with reference to the critical literature review

Table 1: Research objectives (Authors own)

**Contribution:**

My findings aim to shed light upon the inadequacies of current appraisal methods and the reasoning behind their continued use. This will result in a reflection for practice through the proposal of a framework that will yield more positive benefits for society. It is suggested that the use of this framework could result in less megaprojects being built, and renewed attention on 15-minute cities and smaller scale initiatives, especially considering the impacts of COVID-19. However, further exploration into the impacts of participatory appraisals more generally is beyond the remit of study.

**Statement of methods:**

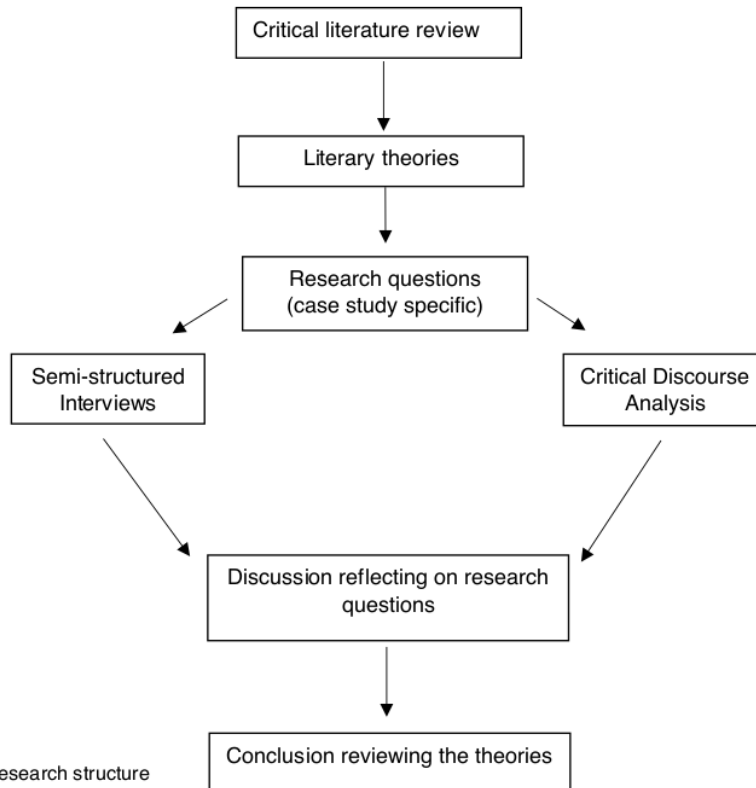


Figure 1: Research structure  
(Authors own)

Research was conducted from May to August 2022 and followed a deductive approach by distinguishing theories from the literature, and testing these against a case study analysis. The research methodology can be broken down into a three-stage process: initial examination of mega infrastructure appraisal methods to distinguish common theories in the literature, critical discourse analysis (CDA) of government and HS2 Limited publications, and semi-structured interviews with different stakeholder groups. Using triangulation through its adoption of multiple methods, cross checking findings (Bryman, 2012) from the literature review to a specific case.

HS2 has been chosen due to its relevance in exploring the literary theories; it is both a critical case as it facilitates an exploration of these concerns, and an extreme case (Yin, 2018) due to its financial, time and physical scales, making it highly controversial amongst stakeholders (Dudley and Banister, 2018). The issues associated with the planning and development of the project can be seen globally across MIP appraisals, however the study is not an attempt to generalise or act as a sample, but to shed empirical light on the theories.

Both elements of the method will interpret qualitative data to provide a thick description (Geertz, 1973), and explore opinions that are nested within the context of study. This will depict why and how each stage of the HS2 appraisal went ahead, as well as its impacts on people and places. To ensure robust qualitative analysis, secondary materials such as government publications, HS2 documents and online media sources will be used alongside primary research.

Stage two of the research involves CDA of government publications, HS2 sources, and counternarratives to reveal the competing discourses, and hidden interests from key stakeholders. This draws on approaches from Foucault (1972) and will be used to link language to its modes of use, exposing its significance in controlling society (Bryman, 2012). This will help understand whether HS2 appraisals and consultation methods were truly transparent.

Semi-structured interviews are carried out as a third step to further test the theories and reveal the voices of stakeholders, especially those not represented in publications. This will unveil the thoroughness of appraisals and consultations deployed by the PPP, to question their influence within MIP planning. Interview transcripts will be coded on three levels: open coding, axial coding and selective coding. By unpicking the synergies between stakeholder groups, the interviews draw conclusions from the core themes reflecting on the research questions. The use of semi-structured interviews allows greater flexibility than standardised interviews (Sellitz, 1969) which will be more appropriate for capturing the opinions and attitudes of stakeholders. Critical case sampling will be used, as interviewees will be chosen based on their ability to provide necessary information (Strewig and Stead, 2001). This is important due to the time-consuming nature of interviews, and the time constraints of the study. Both stages two and three will follow a theoretical saturation approach as research will continue until no new data emerges.

The research questions are developed from the theories and will structure the discussion section as the secondary and primary data span over multiple questions. This will allow for a comparative stakeholder analysis and critical reflection on the HS2 appraisal. Reflecting on the literature review, these findings will facilitate the proposal of a new appraisal method that aims to be participatory, resulting in holistically sustainable infrastructure projects, more suitable for the twenty first century.

**Research ethics:**

The study involved participation from a number of stakeholder groups to gather opinions and information on the HS2 appraisal, however the perceived ethical risk is low. All respondents were made aware of the purpose of the study and informed that they would remain anonymous. Data has been stored in

compliance with the General Data Protection Regulation (GDPR, 2018). It is expected that the dissertation will not pose any ethical risks during or after the research has taken place.

#### **Literature Review:**

This section will highlight the key issues surrounding MIP planning, illustrating the inappropriateness of CBA and forecasting for addressing twenty-first century challenges. Back-casting is discussed due to its potential benefits of creating more desirable built environments, this is critical given the climate emergency and impacts of the COVID-19 pandemic. It examines methods that are less frequently adopted such as MCA, and how governmentality contributes towards BaU approaches. There is an intentional focus on Mega Transport Project (MTP) appraisals within a developed economy perspective, as this will assist reflections on the HS2 case study.

#### **MIPs and The Infrastructure gap:**

Dimitriou (2009) argues that MTP appraisals are unfit for purpose within the twenty-first century. Stating that they are inadequate in the physical boundaries and the financial premises they employ, the local impacts they are intended to have and the risks and uncertainties they confront. More recently Dimitriou and Field (2020) suggest, MTPs are increasingly deceptive over the impacts and outcomes promised against those that are delivered. A considerable amount of literature has been published on the lack of transparency regarding MIP objectives. Research suggests that this is a result of narrow framing by project experts and politicians (OMEGA Centre, 2012), the influence of private sector finance, and the continued use of CBA.

#### **Appraisal methods:**

##### **CBA:**

CBA is a systematic approach to determining whether a project should go ahead, by quantifying the associated costs and subtracting these from the benefits. The key costs include capital costs, work zone disruption and operating and maintenance costs. The benefits are calculated by willingness to pay, the value is then discounted to convert all future costs and benefits to present value (Dean, Hickman and Chen, 2019). A plethora of studies investigating the planning of MIPs point to the use of CBA as the common methodology to support decision making across the world (Willis et al., 1998; Lee 2000; Goodman and Hastak, 2006; Annema et al, 2007; World Bank, 2010). It is widely accepted that CBA should have minimal influence over the appraisal of MIPs, used at the early stage of planning as an improver instrument, rather than as a decision maker.

Dimitriou, Ward and Wright (2013) following findings from the OMEGA research programme, conclude that appraisal methods, particularly CBA are inadequate in evaluating MTPs. Suggesting the method is unable to identify, quantify and weight all relevant factors that determine project outcomes, consider future context and understand political influence. Ultimately the tool is used to tell decision makers what they want to hear. This comprehensive study included interviews with 44 infrastructure specialists, 84 percent of whom considered CBA an inappropriate tool for MTP appraisals. These themes are common throughout contemporary and pre-existing literature, with earlier work suggesting that you can't quantify

personal valuation, and monetising can act as a barrier to wider acceptance as often things are priceless (Self, 1970). Adams (1994) suggests that the method is outdated as it was originally used to examine how well or badly a project would serve a determined policy objective, yet now used to define the objective itself. Further arguing that it is inherently biased as assessors ask the prospective losers what they would be willing to pay (WTP), rather than what they would accept. WTP is constrained by the ability to pay, resulting in lower values and a better CBA score. More recently, Banister and Givoni (2017) have scrutinised the use of CBA for HS2 as it was largely based on traffic forecasting, doubting the values of time used, valuation of externalities, forecasting into the future, WEIs and whether costs should be paid by the public sector.

Consequently, while Calfee (1981) argues that CBA questions are not irrelevant, its plausibility is largely confined to its common monetary measurement (Self, 1970) and potential to assist simple decision making (Adams, 1994). Its welfare considerations are limited to the pros and cons within an economic framework, and it tends to ignore distributional effects such as accessibility as it focuses on the area of study (Wee and Rietveld, 2013).

#### **Back-casting:**

Several studies highlight the need to move away from traffic forecasting, and decouple transport demand from GDP growth (Dimitriou, 2010; Goulden, Ryley and Dingwall, 2014). Forecasting future transport demand ignores behavioural change, the socio-political climate and technology advances (Flyvbjerg, Bruzelius and Rothengatter, 2003), and doesn't cope well with unexpected events such as COVID-19 or the climate emergency (UN HABITAT, 2022). Contemporary research suggests the use of back-casting from a desired future, as this would lead to more sustainable development (Hickman and Banister, 2014). Candy (2010) proposed that this is often not used, as an imaginary scenario cast into the future is hard to imagine.

COVID-19 lockdowns have made the 'imaginary scenario' an everyday lived experience. A future sustainable lifestyle was accomplished due to the restrictions on consumption, public life, and mobility. Collins et al (2022) research suggests that back-casting from a desired future is now more achievable, by joining up the lived realities of the pandemic-shaped present with an aspirational sustainable future. Kuzniarz (2021) and Redazione (2021) both point to the pandemics influence in changing our relationship with the built environment, spearheading a trend towards localisation, and putting the 15-minute city on the agenda for cities across the world. This concept, devised by Moreno, provides an alternative to traditional planning. It is premised on the belief that technology shouldn't be used to allow us to go further and faster to solve spatial fragmentation (Redazione, 2021). Instead, cities should be designed so that people can walk or cycle to meet their everyday needs, fulfilling the six social functions of living, supplying, working, caring, enjoying, and learning (Kuzniarz, 2021). Ultimately, overcrowding on public transport is, to a great extent, a pre-pandemic concern (UN HABITAT, 2022) due to new localised realities such as homeworking. Research suggests that this should be used to facilitate the adoption of back-casting, rather than continuing to forecast for increased demand, paving the way for a more environmentally and socially sustainable future.

### **Multi-Criteria Analysis:**

As a result of widespread disappointment in current appraisal methods, researchers have looked at alternative methods that provide more holistic measurements. MCA is often cited for its recognition of the three pillars of sustainability, examining multiple effects of infrastructure and highlighting the synergies and conflicts between them (Munda, 2008; Dalal-Clayton and Sadler, 2014). MCA works by establishing preferences between options to an explicit set of objectives, identified by the decision-making body, for these it has measurable criteria to assess how well the objectives have been reached. The Department of Communities and Local Government (2009) published findings on the benefits and shortfalls of MCA, noting that MCA brings a degree of structure, analysis and openness beyond the reach of CBA. However, there is no Pareto Improvement rule that benefits should exceed costs, therefore the best option may not actually outweigh the costs. Regardless, MCA has numerous benefits: the choice of criteria is flexible, it is open and explicit, scores and weights are developed in line with established techniques, performance measuring can be done by professionals rather than the decision-making body, and it provides a means of communication between stakeholders and the wider community. Further investigation into MCA has led to many additional steps to the methodology resulting in variations such as Participatory MCA (Dean, Hickman and Chen, 2019), Multi-Actor MCA (Macharis, Turcksin and Lebeau, 2012) and Policy Led MCA (Dimitriou and Field, 2020).

Dean, Hickman and Chen (2019) provide an in-depth analysis of the benefits and shortfalls of Participatory MCA. Their research highlights the key strength centred around the ability to incorporate a wide range of interests and values, resulting in projects that are more widely accepted by stakeholders. Through careful examination, several limitations were listed such as identification of appraisal criteria, the process of assessing impacts and the selection of participants which require careful consideration to reduce subjectivity from the decision makers. Furthermore, due to the collaborative nature of the approach with many different actors selected at each stage in the process (Belton and Stewart, 2002), the method requires careful management and can be time and resource intensive. Similarly, Macharis, Turcksin and Lebeau (2012) examine the qualities of MAMCA, unlike MCA whereby alternatives are evaluated on multiple criteria, MAMCA explicitly incorporates views of different stakeholders. Moreover, the methodology seeks to include unorganised groups to gain a societal perspective rather than a business one. The research outlines the seven steps:

1. Definition of the issue and identification of alternatives
  2. Identification of stakeholders
  3. Stakeholder objectives identified and given priority (weights)
  4. For each criterion one or more indicators are constructed and the measurement for these are made explicit
  5. Construction of evaluation matrix and alternatives further detailed then translated into scenarios which are then scored on objectives of each stakeholder group
  6. Ranking of various alternatives to reveal strengths and weaknesses
  7. Implementation based on insights from the analysis
- Decided in a circular,  
interactive way
- Analytical  
stage

As seen, stakeholders are incorporated at the early stages of the planning process. This will aid decision makers in understanding the problem and the priorities of those affected, resulting in more context appropriate solutions, and greater acceptance of the final design.

More recently, Dimitriou and Field (2020) have looked at PLMCA, underlining its ability to not only incorporate multiple stakeholder views, but to integrate different appraisal tools. They identify which

Tab. 1: Generic phases and of the PLMCA appraisal process and stakeholders. Source: Adapted from Belton and Stewart (2002).

PLMCA framework phases	Actors involved	PLMCA steps/activities undertaken within each phase
Phase 1: The problem-structuring phase	Client agency and analyst team (closed approach) Analyst team and project stakeholders (open approach)	Step 1.1: Problem definition (including issue analysis) Step 1.2: Design of PLMCA Step 1.3: Context analysis and boundary definition Step 1.4: Option identification Step 1.5: Policy analysis Step 1.6: Stakeholder identification Step 1.7: Scenario building
Phase 2: The model-building phase	Analyst team (closed approach) Analyst team and project stakeholders (open approach)	Step 2.1: Formulation of objective/appraisal criteria (adopting an open or closed process) Step 2.2: Derivation of weightings (adopting an open or closed process)
Phase 3: The model-use phase	Analyst team (closed approach) Analyst team and project stakeholders (open approach)	Step 3.1: Scoring (adopting an open or closed process) Step 3.2: Further development of issues, objective/criteria, options and scenario (adopting an open or closed process)

Figure 2: PLMCA steps (Belton and Stewart, 2002)

criteria are most important per stakeholder category, and which should receive priority in line with resource and policy scenarios (figure 2). This facilitates trade-offs between criteria in a transparent manner. In earlier work, Ward et al (2019) suggest a broader more transparent appraisal method, pointing to the use of PLMCA. Arguing that the use of MCA in combination with an attendance process to include multiple stakeholders' perspectives, directed with policy guidance can help make trade-offs amongst objectives (OMEGA, 2013). The research contends that PLMCA provides a more holistic method covering economic, financial, technical, environmental and social concerns, and incorporates other methods such as CBA and community impact assessment (CIA). One key strength is its ability to make the intentions and objectives of PPPs transparent, presenting shared multi-stakeholder and multi-sector perspectives over the costs and benefits of multiple options reflective of regulative guidelines and public policy. Enhancing the accountability of decision-making. Nevertheless, one must question how inclusionary participatory methods are, as those consulted are always dependent on an assessor or the decision-making body.

**Participation:**

All three MCA approaches demonstrate the importance of gaining wider stakeholder input, to yield more sustainable outcomes. The relationship between participatory methods, representing appropriate expertise and commitment to community values has been widely investigated (Forester, 1999). Maginn (2007) suggests the use of collaborative planning theory and applied ethnography to assist policymakers in effective community participation. This can provide a governance and methodological framework to promote inclusionary consensus building. However, it is not easy to eliminate subjectivity,



Whilst earlier studies argued that ignorance towards public opinion is crucial as participation would prevent projects from going ahead (Hirschman, 1967; Sawyer, 1952), more recent research recognises the importance of public involvement to limit expectation creep and improve accountability (Flyvbjerg, 2014; Flyvbjerg, Bruzelius and Rotherengatter, 2003). The UN HABITAT (2022) suggests that scenario building with public involvement will avoid over-emphasis on one-size-fits-all approaches that often bear little relevance to the sites of implementation.

Nevertheless, multiple investigations claim that the focus has merely shifted towards stakeholder management rather than a collaborative approach, arguing that public groups should have a more active role in decision-making (Pacione, 2007; Jeffery, 2009). Jeffery (2009) argues that stakeholder engagement should entail transparency of motivation between all stakeholders, it should build trust through communication and exchanging of views throughout the lifecycle of the project. However, Carlaw (2020) argues that public consultations are used for defence, not really to listen to opinions but to tick a box as part of legal practice. Abelson et al (2001) through a concise summary of consultation processes, highlights the common weakness is the selection of participants, and the lack of engagement across all sections of society, with groups often acting as representatives. Even when attempting to involve the public, this is often met with resistance due to widespread mistrust in the planning department, developers, and council. Psychology research suggests this can be overcome by naming meetings differently, for example framing them as a public discussion - rather than a debate - whereby politicians should listen rather than speak (Forester, 1999).

Nevertheless, despite the plethora of techniques devised to engage communities within the planning and appraisal, the ability of the PPP to subvert consultation processes (Flyvbjerg, 1998), and the position of the Prime Minister to give the ultimate go ahead, reduces the effectiveness of such efforts. Even earlier work from Arnstein (1969) recognised the lack of citizen participation and government manipulation, despite it being the cornerstone of democracy. She described consultations as tokenism, although criticising the democratic process of the time, is this still relevant today?

#### **Governmentality:**

Issues with MIP planning and appraisals go beyond subjectivity, due to the ability of the government to misinform and manipulate public opinion. This is often pursued due to desire for symbols of national development, as MIPs are often used as 'tangible expressions of national aspirations' (Dimitriou, 2009 p.7), rather than effective solutions for spatial inequality. Neoliberal governmentality involves different modes of conduct to determine individual behaviour, Foucault refers to these as technologies of power. Within the context of MIP planning the idea is to convince the public that MIPs should go ahead as gaining public approval is crucial. Hodgson (2014) provides insight into the discourses surrounding HS2 through an analysis of political speeches given throughout the project planning. It is contended that participation has become a state-managed process, with the parameters of debate predetermined by influential stakeholders. Therefore, it is necessary to understand how expertise can be influential in decision-making. Hass (1992) talks of the formation of an epistemic community within planning, (referring to a group of professionals with recognised expertise) these groups form through a common

viewpoint and can work for or against the proposal to influence the political decision. Nonetheless, Dudley and Banister (2018) in researching the influence of epistemic communities on the HS2 proposal, have concluded that the size and controversy has precluded the formation of politically effective advocacy coalitions for or against the proposal, claiming that advocates of HS2 are seeking narratives with little connection to expertise.

Fairclough's work is widely acknowledged across the literature (Miles, 2012; Muralikrishnan, 2011). His work describes the idea of Ideological Discursive Formations (IDFs), to explain how dominant IDFs are used to render others obsolete. Fairclough (1995) provides insight into the use of CDA to denaturalise the dominant IDF and reveal the hidden realities. There is currently a lot of published work surrounding the HS2 project, the appraisal method, consultation processes, its timeline, and objectives. This provides an opportunity to investigate the PPPs methods and intentions using CDA to reveal whether HS2 is intended to bridge the infrastructure gap and 'level up' the north, or act as a global symbol of national development.

The extended literature review has examined current appraisal methods used for MIPs, more sustainable alternatives and why inappropriate methods are prioritised. It has inspected the need for transparency, more thorough consultations, and wider stakeholder involvement within the planning stages to better address the challenges of the twenty-first century. This has resulted in several theories to be tested through further case study research:

**Literary theory:**

PPPs have too much influence within MIP planning and appraisals



CBA is continually prioritised despite its inability to assess all the impacts of MIPs



Consultation methods are poorly executed and inadequate in gaining wider stakeholder opinions



MCA and back-casting are undermined within practice despite their ability to create more holistically sustainable projects



**Research question:**

1. What are the competing discourses surrounding the planning of HS2?

2. What were the appraisal and consultation methods employed for HS2?

3. How might local communities and residents be better represented in consultation processes?

4. How can sustainability objectives be better represented in project appraisals?

**HS2 Case Study:**

In 2009 Network Rail suggested HS2 should be built due to lack of capacity, specifically on the West Coast Main Line (between London to Manchester through Birmingham). Proposing that there was increased demand, with 58 percent of the UK population travelling by train on average once a year, and a doubling of journeys since 1995 (Banister and Givoni, 2016). Consequently, HS2 was devised by the government to further these plans. However, 80 percent of the benefits were reduced to travel time savings (Dudley and Banister, 2018) between northern cities and London, and the predicted increase in demand was based on traffic forecasting which fails to account for contextual changes.



Figure 3: Journey times by proposed routes (BBC, 2021)

Originally Manchester was to see a 1-hour reduction, however stations in the middle of the line such as Liverpool and Preston would only see minor improvements (Martínez Sánchez-Mateos and Givoni, 2012). Changes to plans have resulted in worsening time travel savings (figure 3), while the evolving context of COVID-19 has reduced the need for long distance travel altogether. The negative impacts for those living closer to the proposed route, and whether people would be willing to pay more to use the line were somewhat ignored (Harvey et al., 2014). The Department for Transport (DFT) has said that the line will create 3,100 permanent operational jobs, and potentially 400,000 jobs within the additional development around HS2 stations (House of Commons, 2013). However, these predictions are largely based on forecasting demand and CBA with little assessment of the social impacts.

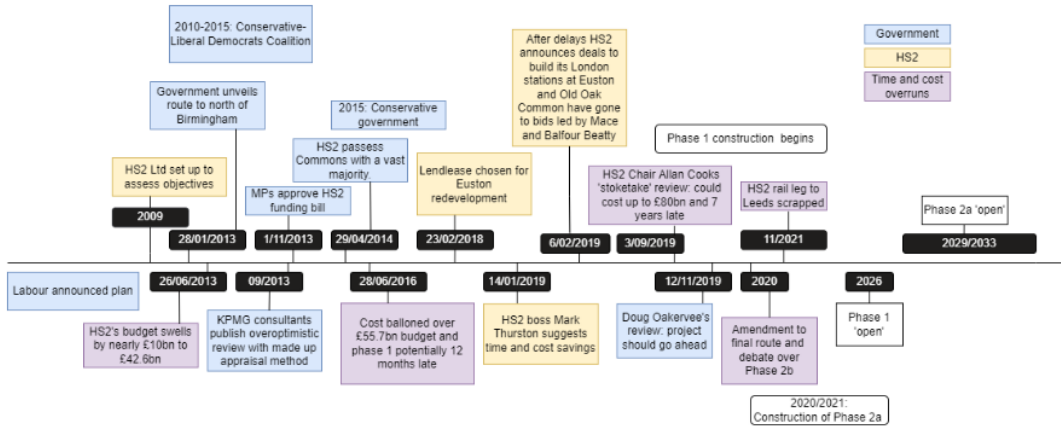


Figure 4: HS2 Project timeline, adapted from (Butterworth, 2022)

Numerous reports have drawn attention to the controversial nature of the project; however the narrative of the PPP remains positive. The timeline of the project (figure 4) shows the turbulence of the decision making, with significant time and cost overruns. HS2 chair Allan Cook criticised the original funding

envelope of £56 billion, estimating the true cost to be between £81 and £88 billion, and has said the timeline prediction with phase 1 complete by 2027 and phase 2 2033 is unrealistic. Cook argued that the entire project is more likely to be completed between 2035-2040 (Building News Desk, 2019).

Last year the eastern leg to Leeds was scrapped (figure 5) as the government confirmed that other methods could provide faster connections, cheaper and quicker than HS2 (The Guardian, 2021). Thus, adding to the controversy regarding the supposed benefits. The DFT figures show that the BCR without the inclusion of WEI fell from 2.2:1 to 1.8:1 due to poor rail demand and economic growth predictions (HC 851, 2013). Opposition towards the project has continually grown and stakeholders are conflicted even within the conservative party (figure 6). Therefore, providing an interesting case to investigate the appraisal and consultation methods used.



Figure 5: Revised HS2 route (BBC, 2021)

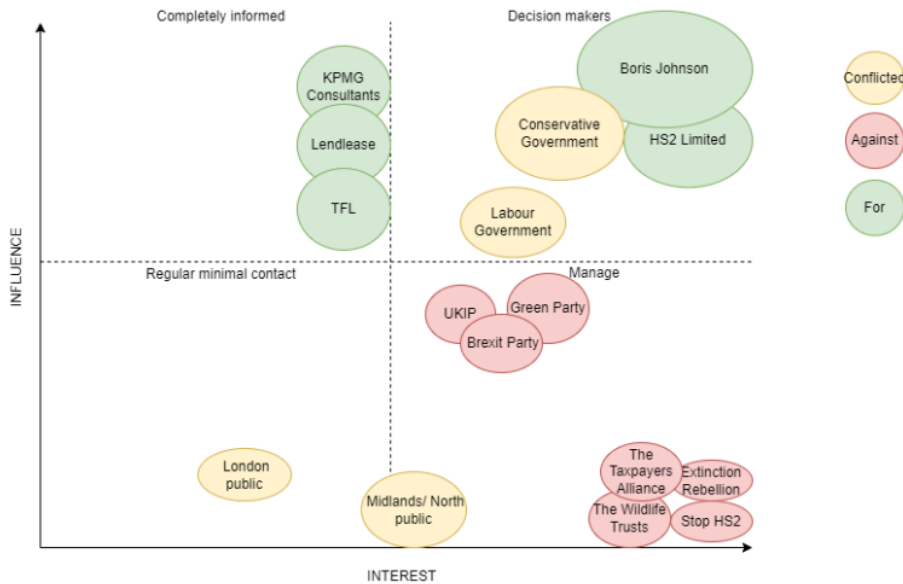


Figure 6: Stakeholder map adapted from (Butterworth, 2022)

### **Results:**

#### **Secondary research:**

The CDA involved questioning the framing (what is the angle of the writer), foregrounding (what concepts were emphasised), background (what issues are played down), audience (intended) and topicalization (what is made import), to interrogate the narratives put forward by the PPP, contrasting these against counternarratives. Given the extended timeline of the HS2 debate, sources were analysed in date order, to reveal the evolving appraisals and changing attitudes towards the project. The results are summarised in appendices A, B and C.

#### **Government:**

Initial government reports (DFT, 2013; DFT 2013b; GOV.UK, 2013) provide extensive detail regarding the benefits of HS2. The strategic and financial cases predominantly focussed on connectivity, accessibility, time savings and some mention of WEIs such as job creation. The budget at this stage was £42.6 billion over 20 years with a £14.4 billion contingency. These reports are technical in nature and demonstrate a commitment to assessing alternative upgrades which were developed collaboratively between the DFT, Network rail and Atkins. However, Amersham Action Group (2020) claim the figures have been 'sexed up', and Henry Overman (former HS2 Ltd advisor) argues that the appraisal methodology arrived at by KPMG, predicting a £15 billion economic boom, was "essentially made up".

Consultations supposedly occurred over five months in 2011 with over thirty public events along the route, receiving 55,000 responses. The results demonstrate a majority against HS2 objectives (figure 7), yet in deciding to continue with the project, Justine Greening (MP Secretary of State for Transport) announced there were strong views both in favour, and against its continuation (STOP HS2, 2012). The DFT (2021) provides information regarding the consultation and petitioning process, with the range of questions asked limited to a few environmental concerns such as the impact of road traffic, and ancient woodland destruction, all which could be defended through the Environmental Impact Assessments (EIAs). Moreover, who this reached and how this was sent out is not clear, the responses were collected through an online form, and no detail is given regarding the outcomes.

	Question	Agree	Disagree
Q1	Do you agree that there is a strong case for enhancing the capacity and performance of Britain's inter-city rail network to support economic growth over the coming decades?	21,630	23,462
Q2	Do you agree that a national high speed rail network from London to Birmingham, Leeds and Manchester (the Y network) would provide the best value for money solution (best balance of costs and benefits) for enhancing rail capacity and performance?	16,365	31,789
Q3	Do you agree with the Government's proposals for the phased roll-out of a national high speed rail network, and for links to Heathrow Airport and the High Speed line to the Channel Tunnel?	2,770	26,197
Q4	Do you agree with the principles and specification used by HS2 Ltd to underpin its proposals for new high speed lines and the route selection process HS2 Ltd undertook?	3,136	28,455
Q5	Do you agree that the Government's proposed route including the approach proposed for mitigating its impacts is the best option for a new high speed rail line between London and the West Midlands?	2,784	28,183
Q6	Do you wish to comment on the Appraisal of Sustainability of the Government's proposed route between London and the West Midlands that has been published to inform this consultation?	722	14,170
Q7	Do you agree with the options set out to assist those whose properties lose a significant amount of value as a result of any new high speed line?	3,197	16,027

Figure 7: Consultation results (STOP HS2, 2012)

Following the controversy over HS2, The Oakervee Review (2019) was conducted to allow the Secretary of State for Transport to make an informed decision for continuing both phases 1 and 2. The report communicated the financial position, assessed alternative routes, and the impacts of cancelling the project. The report had an economic focus, largely ignoring the wider context especially given COVID-19, concentrating on capacity and time travel savings. Furthermore, Byng (2019) in his presentation to The Oakervee Review "HS2 Costs Roundtable", revealed his independent review of the costs (table 2), much higher than the budget. Explaining that many of the costs had been ignored, namely land purchase costs including permanent acquisition, disruption and disturbance. Lord Berkeley

Phase	Description	Cost/£
<b>I</b>	London to West Midlands	54,910,627,201
<b>2a</b>	West Midlands to Crewe	6,661,577,951
<b>2b West</b>	Crewe to Manchester	20,177,156,040
<b>2b East</b>	West Midlands to Leeds	24,815,331,171
	<b>Total</b>	<b>106,564,692,362</b>

Table 2: True HS2 costs (Byng, 2019)

has said that what was published was not what he read in the draft, he suspects improvements were

made without anyone's knowledge. Declaring that while working on the review it was impossible to get hold of certain details regarding the costs (Browne, 2020). Therefore, Oakervee's influence as former chairman of HS2 questions the legitimacy of the results, suggesting the purpose was to support the government's decision to go ahead with the project, rather than adequately assess its potential.

'The full business case' (DFT, 2020) starts with a convincing nationalist narrative, 'Our future economic success hinges on our ability to better connect our towns and cities, boost productivity and rebalance opportunity fairly across the country'. The report's structure, split into 3 cases - strategic, economic and commercial and management - make it seem like a plan that must be followed. This poses a desperate tone with the strategic case regarded as 'the spine of the UK's future transport network'. The economic case of the full "Y" network is deemed to have a BCR of 1.5.1 including WEIs, however the method for reaching this is not provided. The report is largely intended to be used within the PPP and for those with vested interests, therefore the convincing emphasis reflects the conflicted nature of influential stakeholders. Similarly, despite The Telegraph's conservative stance it recently published 'The HS2 rail project must be scrapped by the next prime minister, voters have said in a new poll that will put Conservative leadership candidates on notice' (Gutteridge, 2022). Comments follow: "There is no justification for continuing with HS2, and what's more it will not benefit northern communities" and "HS2 would have been OK (ish) if they had started building North to South". Demonstrating the negative attitudes of conservative supporters.

In 2022 the Integrated Rail Plan (IRP) was announced by Grant Shapps in parliament. This confirmed that the eastern leg to Leeds would be scrapped, removing Leeds from the map, and cut the Northern Powerhouse rail link that was intended to link Manchester to Leeds. Shapps' speech was intended to be powerful and persuasive, suggesting negative attitudes within parliament:

"We're about to embark on one of the biggest single acts of levelling up of any government in history".

Again, with language to create a nationalist narrative such as world class railway, and level up the country. This was met with outrage from MPs such as Jim McMahon:

"There is no amount of gloss or no amount of spin that can be put on this... he promised HS2 to Leeds, he promised Northern powerhouse rail. He promised that the north would not be forgotten, but he hasn't just forgotten us he's completely sold us out"

This ignores the Oakervee review which concluded that the full Y shaped network must go ahead to release its potential. Furthermore, Byng's (2021) commentary, states that the IRP funding is inadequate, it contains little to improve passenger connectivity in the Midlands or the North and spending deprives other parts of the country of facilities, materials, and professional support to deliver their needs.

#### **HS2 Ltd:**

Similarly to the government documents, HS2 Ltd publications follow a formal, thorough, and informative approach at the initial planning stages. Temple-ERM (2013; 2013b) outline the sustainability statements and consultation processes that should be followed, these were intended to advise HS2 Ltd on sustainability considerations and mitigation. The reports describe how the proposed scheme supports

the government's sustainable development objectives through seven themes: Growth and Regeneration, Environmental Change, Skills and Employment, Climate Change, Resilience, Resources and Waste and Integrated Transport (Temple-ERM, 2013). Yet community action groups protest that HS2 Ltd and their contractors are escaping regulation. The Chiltern Tunnel proposal was approved by the Environmental Agency without conditions and despite many difficulties revealed by ground investigations (Conboy, 2021). Meanwhile, environmental campaign groups continuously demonstrate concern over the irreplaceable habitats, ancient woodlands and meadows that will be lost due to the construction, questioning the validity of EIA's (HS2 Amersham, 2022). The Socio-Economic Appraisal (Temple-ERM, 2013b) gives contextual detail into the affected areas, themes throughout are on the potential for stimulating development within the station areas, with the highest potential in the Greater Manchester region. Nevertheless, this ignores the displacement from the compulsory purchase of homes along the route, doesn't consider communities that are bypassed, and some of the findings are now redundant due to stations being cancelled.

More recent reports follow a less formal approach and have a persuasive framing which could be seen as an attempt to convince public opinion, especially given these are publicly available from the HS2 Ltd website. With similar nationalist language to the government publications, 'HS2 is more than a railway. By joining up Britain, we will build a fairer, more balanced country' (HS2 Ltd, 2019). These reports do not provide any information about the environmental damage or displacement. Additionally, HS2 Ltd released several videos detailing their green construction efforts (HS2 Ltd, 2021; HS2 Ltd, 2021b). Potentially as an attempt to justify the huge levels of destruction by demonstrating new methods of green construction to restore public faith. With specialists describing their responsibilities, such as Andrea Davidson HS2 Ltd Air Quality Lead who devised an air quality strategy to ensure low emission alternatives are used across the sites, including fully electric, hybrid, solar and hydrogen technologies.

The G1 consultation and engagement (HS2 Ltd, 2021c) has been made publicly available, however the document merely details the steps HS2 Ltd have taken; providing a general timeframe with no details over the questions asked, who took part, or the results.

**Primary research results:**



Figure 8: Stakeholder influence (Authors own)



The aim of the interviews was to further interrogate the appraisal and consultation methods used through engagement with wider stakeholder groups (figure 8), to reveal whether PPPs have too much influence over MIP planning. The results are illustrated in the figures below, the first demonstrating the opinions of different stakeholder groups that could have been integrated into an MCA approach (figure 9). The second represents the voices of residents that weren't captured in consultations (figure 10). Both diagrams represent the synergies between stakeholders and resident groups and reveal the following themes:

- Intentional undermining of the costs
- Failure to recognise more important transport investment strategies
- A political London centric project to fuel the growth economy
- Consultations and petitioning process conducted primarily for legal purposes

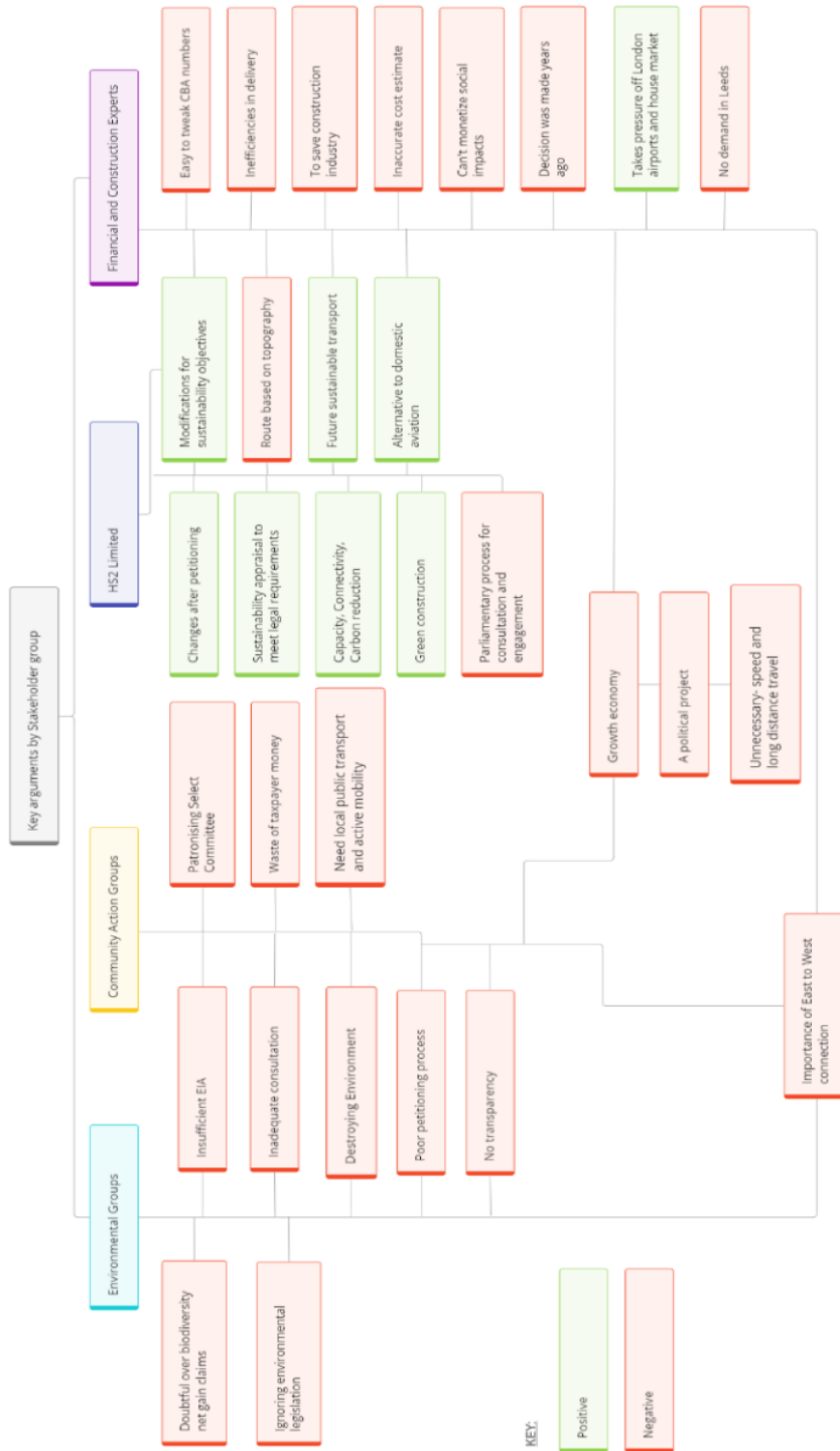


Figure 9: Wider Stakeholder opinions (Authors own)



Figure 10: Resident groups synergies (Authors own)

While the appraisal method isn't entirely comprehensible, there is a clear focus on forecasting demand, economic predictions, and CBA. Financial and construction experts were critical over the use of CBA, explaining that you can torture the numbers to tell you what you want to hear. Explaining that the original BCR given to Parliament in 2017 was low, even when massaging the costs. Residents in Birmingham, London and Manchester have all drawn attention to the ignorance of context, with reduced passengers on trains as a result of COVID-19, further reducing the BCR, especially given the key project objective to increase capacity. Furthermore, one respondent has claimed that the economic predictions have been intentionally undermined as the true cost was ignored:

"The costs of phase one were originally said to be £23.5 billion and that was given to my colleague, Lord Berkely. I said that phase one was going to cost £47.8 billion, twice that amount. Nobody would listen to it... Some of the matters relating to HS2 are actually now in the hands of the Serious Fraud Office." - Independent Cost advisor for Oakervee Review

The appraisal also failed to recognise the importance of an East to West over a North to South connection. This has been highlighted across environmental and community action groups, financial and construction experts and resident groups. With those in Manchester and Leeds explaining that the connection to London is already efficient, and that the time savings wouldn't really make a difference

as they valued travel time. Manchester residents expressed concern over the potentially higher ticket fares, as it already costs £100 for an off-peak return to London, doubting its widespread use. Nevertheless, given the 2-hour journey from Birmingham to London and their proximity, it was concluded that this connection should be improved. Still, all respondents believed that improvements to rail in the north should have been a priority, especially due to promises to level up the north:

"It takes me about two hours to get from Manchester to London Euston. If I wanted to go to Hull, which is half the distance, by public transport, it would probably take three and a half hours. So, I just think if they really wanted to create more economic activity in the North, then they would be better off putting the money into East to West connections." – Manchester resident

"If I could get to Manchester in half an hour, you'd be more likely to go, and if you want to do that levelling up or invest in the north of England, that's the way to do it. It's not by encouraging folk to go to London even more, you know?" – Leeds resident

Adding to the belief that the project was a waste of money and London centric, with all but HS2 Ltd questioning the government's promise to level up the north. Community Action Groups and Financial and Construction experts suggested that HS2 was a political project aimed to stimulate growth, in the hope that pouring money into the construction industry would keep the economy afloat. However, a carbon manager at HS2 Ltd explained that the project aimed to improve capacity, connectivity and reach carbon reduction targets by getting more cars off the road, providing an alternative to domestic aviation. Proven through their commitment to minimising emissions from construction and maximising the benefits from operation, detailing innovative methods used resulting in approximately 40 percent less concrete than traditional methods. Nevertheless, environmental groups have expressed concerns, as the Environmental Agency weren't required to do site analysis' since the project had government support, detailing concerns especially over ancient woodland and damage to aquifers:

"It's about circumventing the laws to destroy biodiversity. It's about not taking any notice of the EcoServices and where people have raised objections in the past about the lack of sustainability. Whether it's to the water supply, the aquifers or the wildlife, people have been either brought off, sidelined, or bullied" - Senior Conservation Officer, Wildlife Trust

Environmental and community action groups insisted that the consultation process was a window dressing exercise. To some degree this was confirmed by HS2 Ltd, who explained that consultations were part of the legal process to go through an Act of Parliament, rather than to gain any wider opinions on the project. HS2 Ltd validated the poor engagement efforts, due to the lack of resources at the initial planning stage when describing the dumping of large documents in libraries as a form of public communication. Examples of adjustments to the proposal were given, such as the redesign of Euston station to create wider socio-economic opportunities for regeneration, and the extension of the Chiltern tunnel to alleviate noise pollution. Nonetheless, it was mentioned that adjustments to the design (especially tunnelling) would increase the carbon footprint, and therefore trade-offs would have to be made. HS2 Ltd respondents reiterated that those specially affected (500 metres either side of the line) were able to petition and present their case. Although, two community action group members were

extremely critical of the process, describing the select committee as patronising, suggesting that public engagement was used to silence opposition:

"In the build up to the select committee hearing, I was rung a number of times by the HS2 legal team to sort of try and persuade me not to petition. They were so rude and arrogant. A lot of people who tried to petition got the same, people got absolutely murdered, they got humiliated." – Chair of WBG HS2 Action Group

### **Discussion:**

#### **1. What are the competing discourses surrounding the planning of HS2?**

The controversy within and across stakeholder groups has precluded the formation of a consistent, dominant narrative for or against the project, this is often the case for MIPs due to their size, influence and visibility (Dimitriou, 2009). Recent government sources and HS2 Ltd publications have both demonstrated a commitment to a nationalist narrative as the project became more controversial. The CDA reveals that this narrative was used in an attempt to create a dominant IDF (Miles, 2012; Muralikrishnan, 2011), since publications became increasingly convincing rather than informative as the project became more expensive and the benefits decreased. Therefore, pushing the nationalist narrative to naturalise counternarratives and win acceptance for the project as common sense. However, this has no connection to expert debates, with several sources providing evidence of the PPP ignoring economic predictions and twisting the Oakervee review to continue the project (Amersham Action Group, 2020; Byng, 2019; Browne, 2020). Meanwhile, HS2 Ltd also attempted to create a narrative of green innovation and environmental commitment through detailing their sustainable construction efforts. This was exposed as a pretence, since interviews with environmentalists revealed that the EIA was inadequate, and the Environmental Agency weren't even obliged to carry out site analysis'.

Regardless, most respondents expressed concerns for the environment and climate emergency and didn't think that the project was worth taxpayer's money, especially given the effects of COVID-19. The forces of neoliberal governmentality have still worked to ensure the project goes ahead with initial promises of economic prosperity in the north through WEIs. Now the government is justifying its continuation by explaining that the drawbacks of cancelling the project are greater than the benefits of ending it (Oakervee, 2019). Dimitriou (2009) refers to this as the 'green light' decision, since construction has commenced, incompleteness is a huge waste of political capital, and human and financial resources, therefore the project is beyond point of return. This is reiterated in Boris' continued rhetoric "We're going to get this done" (Channel 4 News, 2020), suggesting there is no choice but to continue. The convincing nationalist narrative demonstrates an attempt to stimulate public support despite the known disadvantages. Evidently this was not successful as when Shapp's presented the IRP in parliament, it was met with outrage from across the parties, even Conservative MPs:

"We're about to embark on one of the biggest single acts of levelling up of any government in history... it will rebalance economic geography, it will level up the country, it will bring benefits a decade or more earlier." - Shapps (SkyNews, 2022)

"Boris Johnson was elected due to his promise to level the playing field, we were promised a Northern powerhouse, what we've been delivered today is a great train robbery!" – Huw Merriman (Sky News, 2022)

This questions whether the levelling up agenda is merely a narrative, allowing the government to continue prioritising London's economic position, through a continued promise for investment in the north. Suggesting that the government use their dominance to manipulate public opinion, intentionally misinforming to get political projects approved, despite our democratic system. This lack of transparency is often what gets MIPs approved, creating public distrust, and often leading to time and cost overruns due to controversy in stakeholder opinions as the project develops (OMEGA Centre, 2012; Dimitriou and Field, 2020).

## **2. What were the appraisal and consultation methods employed?**

While the secondary data demonstrates a commitment from the PPP to follow robust appraisal methodology, presenting BCRs, EIAs and Social Impact Assessments (SIAs), the CDA reveals that these tailed off as the project developed. The focus shifted to prioritising the economy with reports such as 'The Full Business Case' (DFT, 2020), despite the BCR falling and WEI's deteriorating. This may be a result of coupling GDP growth with transport demand, despite numerous studies urging the need to move away from this assumption (Dimitriou, 2010; Goulden, Ryley and Dingwall, 2014). The PPP ignored growing doubt, in the belief that investment would lead to economic growth. However, given the complexities of the current context, the predictions for increased train travel demand may no longer be relevant. This is one of the key drawbacks of forecasting, as it doesn't account for contextual changes (Flyvbjerg, Bruzelius and Rothengatter, 2003).

The primary research reveals that the economic predictions ignored several elements necessary to produce an accurate cost prediction, and EIAs weren't adequate for the scale of impact the project would have. Reviewing consultation documents, it seems as though procedures were followed to comply with legislation rather than to make any substantial changes. Speaking with residents, it doesn't appear that consultations had a wide reach, and those that were able to petition were often ignored. This corresponds with earlier research that suggests ignorance towards public participation is necessary to ensure projects go ahead (Hirschman, 1967; Sawyer, 1952). Yet more recent research suggests that consultations should be used to prevent expectation creep and improve accountability of decision making (Flyvbjerg, 2014; Flyvbjerg, Bruzelius and Rotherengatter, 2003).

### **3. How might local communities and residents be better represented in consultation processes?**

Studies have demonstrated the need for transparency between the PPP and the public to build trust (Jeffery, 2009). This should be achieved through initial scoping with local communities to distinguish the issues to be addressed and development of objectives, and consistent communication to prevent time and cost delays from lack of public support. Instead, the HS2 case asked specific questions to those directly affected at the initial planning stage, and then final consultations over moderate design features, providing limited feedback over the changes made. Limiting public involvement, creating mistrust between the public and planning authority, leading to project delays and infrastructure that poorly reflected local needs.

Research also suggests asking open-ended questions and more friendly naming conventions, framing the consultation as a discussion (Forester, 1999). With questions such as: what would you like the future of travel to look like, rather than specific questions tailored by the decision-making body, designed to ensure the project gets approved. If this had occurred, it is possible that neither the Eastern leg to Leeds nor the Western leg to Manchester would have been established as part of the network. Almost all respondents agreed that the line was not needed due to the efficiency of the current service, stating a preference for an East to West rather than South to North connection. Instead, it is likely that HS2 would have provided a faster connection to Birmingham, and the Northern Powerhouse rail for a connection between Leeds and Manchester, with various smaller scale transport initiatives in the north. This questions whether the project was a symbol of national development rather than a solution to regional economic disparity? Especially since the petitioning process was heavily criticised throughout the investigation, suggesting that the process was used to silence opposition rather than gain any insight.

The need to involve the public is not a new concept, referenced in preliminary work from Arnstein (1969), insinuating that the public are intentionally side-lined to get MIPs approved. Reducing the influence of the PPP within MIP planning could reduce their ability to use MIPs as symbols of national development, as wider stakeholder groups and local communities are likely to favour initiatives that serve local rather than global needs. Whilst this is necessary to bridge the infrastructure gap, how to redistribute power within the decision-making body has not been widely investigated. Feasibly, combining a thorough and structured appraisal method as illustrated (figure 9), with legally binding conditions could ensure that stakeholder influence is more evenly distributed.

#### 4. How can sustainability objectives be better represented in project appraisals?

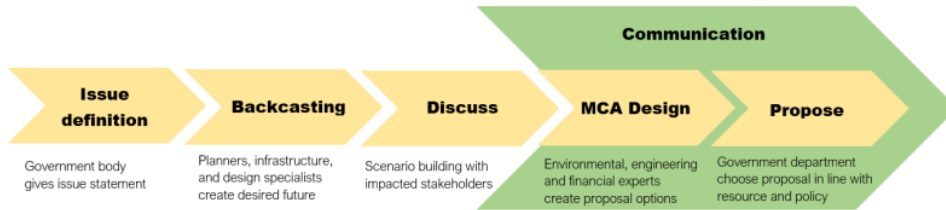


Figure 11: IBDMP: Proposed appraisal model (Authors own)

IBDMP (figure 11) illustrates the recommended appraisal methodology devised as a result of the lessons learnt throughout the HS2 case study. Using back-casting, initial and continued public engagement, and wider stakeholder analysis of objectives would have resulted in a more holistically sustainable and contextually appropriate appraisal for 'levelling up' the north. IBDMP has been developed to ensure MIPs are socially, environmentally, and financially sustainable through the MCA design (stage 4), engaging with experts. One of the key benefits of PLMCA was the ability to make PPP objectives transparent (Ward et al, 2019), due to the manipulative power of government influence. Therefore, in IBDMP their involvement is limited to the initial and final stages, entirely reducing their ability to manipulate appraisals and public opinion. The related government departments are required to define the issue, and then make the decision over a few proposals developed between planners, experts, and the public (impacted stakeholders). IBDMP accentuates the importance of continued communication between the decision makers and the public, ensuring a transparent planning process. Consultations will be named as discussions to encourage participation (Forester, 1999), and efforts will be made to reach all members of society affected by the project, including unorganised groups.

Due to the COVID-19 pandemic, back-casting to a more environmentally conscious lifestyle has become a lived reality. This has simultaneously revealed the redundancy of forecasting for increased transport demands. The 15-minute city has experienced renewed academic attention since the pandemic due to the reduced need for long distance travel (Redazione, 2021; Kuzniarz, 2021). If this had been taken into consideration when HS2 was conceived, it is likely that investment would have focused on smaller scale initiatives such as local public transport and active mobility facilities, as home working has reduced the need for increased capacity. While a global pandemic couldn't have been predicted in 2009 when the project was initially proposed, the environmental and social benefits of shorter trips to everyday services and facilities should now be taken into consideration. The 15-minute city has been credited across the world for its contribution towards healthy city goals (Plan Melbourne, 2022; O'Sullivan, 2020; World Economic Forum, 2020; C40 Cities Climate Leadership Group, 2021), and COVID-19 experiences have made a localised future more desirable (Collins et al., 2022). Therefore, back-casting from a desirable future is now more realistic and should be used to facilitate a transition towards environmentally conscious lifestyles, especially given the climate emergency.



Likewise, scenario building with community involvement could have prevented a one-size-fits all (UN HABITAT, 2022), big fix mentality approach (Dimitriou, 2009). Therefore, following a more collaborative planning practice (Maginn, 2007) would have resulted in connections that better suit current and future populations. For example, Leeds residents said they desired better intercity connections. A more appropriate solution would have been a local tram network, especially given their desire for a car free centre, and hope to promote active mobility (Get Set Leeds, 2020).

MCA yields many benefits, primarily the ability to reflect multiple viewpoints and incorporate environmental, economic and social considerations (Munda, 2008). Having looked at different stakeholder opinions (figure 9) if MAMCA was followed the project's objectives would have looked very different, with greater negatives of the current proposal. Involving different stakeholder groups at the beginning of the project could have led to a more holistic interpretation of the current issues, and better designed objectives to reach these goals, hence their involvement in stages 2 and 3 of IBDMP. For example, environmentalists expressed a concern with the destruction to the natural environment, particularly the aquifers and ancient woodland, arguing that faster long-distance travel was not worth the expense to the environment. If involved earlier in the planning, considerations over the route would have been decided quicker as the most crucial sites could have been avoided. Again, it is likely that smaller local scale initiatives would have been favoured as these are typically less environmentally destructive. Listening to cost and construction experts would have created a more transparent cost estimate, and potential to look at more financially effective routes such as the East to West connection, and electrifying existing lines rather than building new ones. This was later considered with the electrification of the East Midlands mainline. Furthermore, using PLMCA would have resulted in identifying the objectives that best reflect resource and policy scenarios (Dimitriou and Field, 2020). As a result, less resource intensive transport initiatives would have been prioritised over a MIP, especially given net zero targets, and associated environmental policies. This is integrated into IBDMP as the final stage allows the government to determine the best proposal in line with policy goals.

Consequently, following an IBDMP approach would have led to a more thorough identification of the issue, and more context appropriate objectives. Especially since almost all respondents believed the project was London centric, despite its intentions to improve conditions in the North. However, the benefits of alternative methods such as MCA and back-casting have long been referenced in the literature, yet MIP planning continuously prioritises CBA and forecasting approaches. Therefore, whether the government intentionally uses appraisals with limited scope should be further investigated, and their power as ultimate decision makers should be questioned.

### **Conclusion:**

To conclude, the HS2 case has confirmed that the theories from the literature are still relevant to the UK, with inappropriate appraisals and inadequate consultations resulting in MIPs that poorly reflect the needs of the twenty-first century, post-pandemic world and climate emergency. While the PPPs nationalist narrative failed to gain public support, the power of neoliberal governmentality resulted in manipulated reports to justify the case, superseding the controversy across stakeholder groups. Over

the duration of the project, the appraisals have demonstrated a commitment to economic goals through a CBA and forecasting approach with little regard to the context, specifically COVID-19 which has reduced the need for long distance travel. Consultations and the petitioning process can be regarded as legal requirements rather than any commitment to participatory planning. Consequently, it is likely that HS2 was promoted due to the effects of globalisation, and a government desire for a symbol of national development, rather than a solution to spatial inequality, questioning the integrity of the 'levelling up' agenda. This reinforces the necessity for distinction between need and demand to refocus on critical infrastructure (Dimitriou and Field, 2020).

The discussion alludes to the preference for smaller scale initiatives, suggesting that it is the emerging and less developed economies that need MIPs, due to their transformational capabilities. Highlighting the inadequacy of PPPs to provide essential infrastructure, as private investment focuses on stable economies (Milken Institute, 2019). Subsequently, further research should be conducted on incentivising private investment in less developed countries.

Additionally, it is paramount to think more critically about the construction sector given the climate emergency. The allocation of MIPs should not be decided by inappropriate appraisal methods. Nevertheless, despite numerous alternative methods such as MCA, wider stakeholder involvement and back-casting offering a more holistic approach, they are continually undermined in practice.

The study has drawn attention to the benefits of using these methods, specifically to the HS2 case. Suggesting that a participatory MCA appraisal could have resulted in a proposal for a shorter high-speed line between Birmingham and London and improvements to rail connections in the North. The research aim has been achieved through the proposal of a new appraisal method (IBDMP), devised from the lessons learnt throughout the research, incorporating elements of accredited models. Using IBDMP in practice could contribute to building environments that are more holistically sustainable, taking inspiration from the 15-minute city concept. While IBDMP may be time and resource intensive at first, it could lead to time and cost savings in the long run as wider stakeholder engagement will reduce controversy over the project's lifetime. Nevertheless, how to ensure IBDMP is used in practice should be further explored as the benefits of similar MCA approaches have long been referenced in the literature (Dean, Hickman and Chen, 2019; Macharis, Turcksin and Lebeau, 2012; Dimitriou and Field, 2020). Future research should focus on how to redistribute the power of PPPs to wider stakeholder groups to facilitate more holistic decision-making.

#### **Reflections:**

Initially, the research intended to interview government officials to gain insight into the appraisal methods used, however unfortunately this was not possible. Similarly, it proved difficult to get a substantial number of participants from HS2 Ltd, therefore only 2 interviews were conducted with this stakeholder group. Consequently, questions over the appraisal method were limited to environmental appraisal considerations and brief details regarding consultation methods. This led to a methodological adjustment, instead using CDA of online government and HS2 sources, contrasted with counternarratives to increase the validity of the primary research findings.

The study also intended to propose the new IBDMP framework to these stakeholder groups to facilitate my suggestion for its integration into policy and practice. Whilst this limits feasibility, the wider scope of the study provided thorough reasoning for the framework, paving the way for further research suggestions into more specific studies around integration.

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**Appendices:**

Source	Framing	Foregrounding	Background	Audience	Topicalization	Common Codes/ themes
<b>DFT (2013)</b>	Informative for government	Economic benefit	Results of consultations	Specialists, advisors, HS2 Ltd, government	Economic benefit and WEIs	Connectivity, accessibility, jobs, WEIs, time travel savings, forecasting, CBA, CBRs, consultation, sustainability impact, regeneration
<b>DFT (2013b)</b>	Informative to aid government decision	strategic objectives, time-cost savings, capacity, and demand	Environmental and social concerns	government/politicians – telling them what they want to hear essentially	Strategic objectives	Capacity, connectivity, alternative options, London, West and East Midlands and South Yorkshire
<b>GOV.UK. (2013)</b>	Informative government resource to set parameters of HS2 decision	Reasons for HS2	Construction damage	General	capacity and growth	Dates for construction and completion, capacity, connectivity, regeneration and growth
<b>Oakervee , D (2019)</b>	Douglas Oakervee – British Civil Engineer – clearly for construction – past chairman of HS2 and Crossrail	financial issues and alternative rail routes	environmental impact- social impact	government - intended to share same interests and be a justification for going ahead as usual	Cost benchmarking and HS2s ability to solve rail issues and impact of cancelling the project	Cost, communities, construction, GB rail network, savings
<b>DTF (2020)</b>	Justify the government decision to go ahead with HS2	Strategic case and economic benefits	Consultation, social impacts of inaccessibility	Political, high importance stakeholders	Strategic and economic cases	Investment, transparency, business case, strategic case, economic case, financial case, commercial case, management case, Innovation, technology, level-up
<b>SkyNews (2022)</b>	Parliament debates between MPs	Journey times, capacity. Areas left out by the new plan	Public/wider opinion	General public	North and midlands, speed and capacity	World class, communities, businesses, capacity, journey times, cut out of plans, lies, deceit

<b>DFT (2021)</b>	Inform consultees on process	Environmental perspective	Result of consultation	General public- however wording isn't very clear/technical jargon used	Environmental concerns	Faster – services, Connect/connectivity, North will see more benefits more quickly, economic benefits, rebalance the economy, consultation, environmental statement, Environmental Impact Assessment, Equality Impact Assessment
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Appendix A: Government CDA Results

Source	Framing	Foregrounding	Background	Audience	Topicalization	Common codes/themes
Temple-ERM (2013)	Inform HS2 on best practice	Sustainability concerns and mitigation	Impact of consultation	HS2 Ltd, government	Sustainability	Sustainability, Consultation, Public, environment, regeneration, climate, resources, efficient, opportunities, surrounding areas
Temple-ERM (2013b)						Local development Regeneration, economic development, productivity gains,
HS2 (2019)	Convince public that HS2 is revolutionary	The design and benefits of HS2	Negative impacts.	General public, interested stakeholders	Joining up Britain for a fairer country	Britain, minimise disruption, safety, worlds most sustainable, technologies, potential, ambition, growth strategy, jobs, transform
HS2Ltd (2021)	To restore faith in the green construction of HS2	Green construction	Impact on heritage sites and ecosystems	General public, environmentalists, interested stakeholders	Green construction	Building back better, decarbonising construction
HS2 Ltd (2021b)	Demonstrating innovative technology and mitigation attempts	Green construction and innovative technologies	Pollution to the environment	Environmentalists, academics, interested stakeholders	Green construction	Decarbonising, air quality, clean transport, energy transition, adaptation, resilience, zero carbon, innovative, energy efficiency, hybrid solutions, hydrogen, risks
HS2 (2021)	Part of procedure that must be followed	Consultation procedure	Who can participate	Interested stakeholders	Engagement	Stakeholders, consultation, engagement, principles, legislation, formal, provision

Appendix B: HS2 CDA Results

Source	Framing	Foregrounding	Background	Audience	Topicalization	Common codes/themes
<b>Green Party (2011)</b>	Political bias - environmental and social priorities	Emphasised the cost and time overruns	Benefits of HS2	General public – green party supporters	Waste of taxpayers' money	Economic case unsound, emissions
<b>Delow (2012)</b>	STOP HS2 clearly negative angle	Overview of consultation results	What was changed as a result	Protestors	The poor process of consultations and impacts of results	Fatigue, stress, trouble, large consultation
<b>The Guardian (2013)</b>	Gwyn Topham Transport correspondent, informed opinion	KPMG have 'made up' the appraisal for HS2	The government positive voice	Middle-class, left leaning newspaper audience	Miscalculation over economic benefits	Cost Benefit Ratio, made-up, Henry Overman
<b>Amersham Action Group (2020)</b>	Amersham Action Group fighting against construction	HS2 reports have been edited to increase support for the case	What has been changed?	Amersham affected communities	Breakdown of HS2 reports that have been twisted	'Sexing up', rewriting, 'continuous improvement', costs out of control
<b>Browne (2020)</b>	Transport Network- gives a trusted independent voice for mobility and transport	Oakervee review adjusted to support government decision	Detail regarding what has been changed	General public	Lord Berkeley explaining his reasoning for thinking the report was edited	Without anyone knowing, continuous improvement, risk, better alternatives
<b>Channel 4 News (2020)</b>	Slightly more favourable to labour/left so slightly negative bias of the HS2 debate, clear in interviewers' questions	Money focus – is it worth the taxpayer's money	WEIs	Channel 4 news target audience: 16-34-year-olds maybe more environmentally concerned	Is it a waste of money?	Costs spiralling, only benefits for cities not towns, easing congestion, everybody is always against big infrastructure, loss of woodlands and wildlife, benefits for Birmingham, green transport, environmental benefit for removing domestic air travel, commitment to replacing trees

	Independent Construction Economist review of HS2 costs	Economics of costs for HS2	Benefits WEIs	Institution of civil engineers, government and people working on HS2	Breakdown of costs	Independent estimate of costs, funding envelope, completion dates
<b>Byng (2019)</b>						
<b>Byng (2021)</b>						Review of costs estimates for Integrated Rail plan
<b>Sky News (2022)</b>	Informative after IRP announced	Explaining the reasons for HS2 and the failures	Support for HS2	General public	Overview of the project thus far	Ballooning costs, carbon emissions, cutting Northern Powerhouse rail and Leeds connection
<b>Gutteridge (2022)</b>	Conservative supporters view after IRP announced (The Telegraph)	HS2 rail must be scrapped by the next Prime Minister	Benefits	The Daily Telegraph is politically conservative and has endorsed the Conservative Party at every UK general election since 1945	HS2 is a waste of money	Bring government spending down, no justification, won't help north, public ignorant to the facts

Appendix C: Counternarrative CDA Results

**Semi-structured interview questions- to act as a guide:**

**Local residents: (Q1, 2, 3)**

Are you for or against the construction of HS2?

Will you use HS2 when its operational?

Were you involved in any consultation processes? – If so do you think these were effective? What questions were asked/not asked?

Do you feel your opinions were represented in the design or appraisal of the project? – if so, why, if not why not?

If not involved in the consultation, have you heard of anyone who was?

Do you think any stakeholders were marginalised by the process?

What sort of communication was involved- in the media or not?

Do you think there is a better way of engaging with local communities? If so can you provide examples

How efficient is the local transport network?

Are there any improvements you would like to see to transport initiatives in the north?

Do you think this would have been better or not as effective than HS2?

Do you believe that the levelling up agenda is legitimate?

**Protestors/activists: (Q1, 2, 3)**

What would you say are the major issues and benefits with HS2?

Do you feel that people were consulted efficiently and were views taken on board?

What stakeholder groups do you believe were included at all in the planning and appraisal of HS2?

Did you take part in the petitioning process, if so what was your experience?

How do you feel about the levelling up agenda?

**Cost/construction experts/Environmental groups: (Q 1, 2, 3, 4)**

What are the key benefits and shortcomings of the HS2 project?

What appraisal methods do you believe were used to justify going ahead with HS2? e.g CBA, EIA, SIA, MCA?

Do you think the appraisal was thorough and effective?

Do you believe any groups did not get to voice their opinions?

What stakeholders do you think were involved in the planning/appraisal?

What suggestions/improvements would you like to see within appraisal methods and consultation practices?

Do you think these improvements would work or do you believe that PPPs are too powerful in manipulating public opinion?

What extra measures should be put into place to ensure that appraisal methods are inclusionary?  
Regulation/enforcement?

Do you think there are better ways of appraising MTPs? If so, what are these?

Do you think participatory appraisal methods would work – if so why/why not

What combination of appraisal methods do you think would be effective?

**HS2 Ltd: (Q 1, 2, 3, 4)**

What were the priorities/key benefits for HS2?

What was the process for planning/appraisal for HS2?

What appraisal method/methods were used in the planning of HS2?

What stakeholders were involved in the planning/appraisal?

How were people consulted? How much did consultations influence the project?

Do you believe any groups did not get to voice their opinions?

Who were the desired users of HS2?

Who would not benefit from HS2?

To what extent do you believe that HS2 would contribute towards the levelling up agenda?

Appendix D: Semi-structured Interview questions



## Supervisor sign-off for Ethical Clearance Forms and Risk Assessment Forms

*(For supervisor completion only BEFORE submission via Moodle)*

Are you satisfied with the **ethical clearance form** (yes/no)?

Please provide any additional comments about the form that may help the student.  
*(If the form is missing, the proposal must be given a mark of 0, and the student will have 48hours to resubmit the complete proposal. If the form is unsatisfactory, the student must amend their ethical questionnaire to your satisfaction before they can proceed with their research)*

Yes

Are you satisfied with the **risk assessment form** (yes/no)?

Please provide any additional comments about the form that may help the student.  
*(If the form is missing, the proposal must be given a mark of 0, and the student will have 48hours to resubmit the complete proposal. If the form is unsatisfactory, the student must amend their ethical questionnaire to your satisfaction before they can proceed with their research)*

Yes



**Note: this is a copy of the proforma that each student MUST complete and submit directly on Moodle. Please reproduce your submission here for the purpose of your supervisor signing off on its review and approval.**

### Ethical Clearance Pro Forma

It is important for you to include all relevant information about your research in this form, so that your supervisor can give you the best advice on how to proceed with your research.

You are advised to read though the relevant sections of [UCL's Research Integrity guidance](#) to learn more about your ethical obligations.

#### Submission Details

**1. Name of programme of study:**

MSc Sustainable Urbanism

**2. Please indicate the type of research work you are doing (Delete that which do not apply):**

- Dissertation in Planning (MSc)

**3. Please provide the current working title of your research:**

Appraisal methods for Mega Infrastructure Projects (MIPs) are not adequate in creating equitable outcomes, their inappropriate use is intentional as it allows influential stakeholders to present symbols of national development. – An investigation using High Speed Rail 2 (HS2)

**4. Please indicate your supervisor's name:**

De Vos, Jonas

**Research Details**

**5. Please indicate here which data collection methods you expect to use. (Tick all that apply/or delete those which do not apply.)**

- Interviews
- Focus Groups
- Secondary data analysis

**6. Please indicate where your research will take place (delete that which does not apply):**

- UK only

**7. Does your project involve the recruitment of participants?**

'Participants' means human participants and their data (including sensor/locational data and observational notes/images.)

Yes

**Appropriate Safeguard, Data Storage and Security**

**8. Will your research involve the collection and/or use of personal data?**

Personal data is data which relates to a living individual who can be identified from that data or from the data and other information that is either currently held, or will be held by the data controller (you, as the researcher).

This includes:

- Any expression of opinion about the individual and any intentions of the data controller or any other person toward the individual.

- Sensor, location or visual data which may reveal information that enables the identification of a face, address etc. (some post codes cover only one property).
- Combinations of data which may reveal identifiable data, such as names, email/postal addresses, date of birth, ethnicity, descriptions of health diagnosis or conditions, computer IP address (of relating to a device with a single user).

No (Please delete as applicable)

**9. Is your research using or collecting:**

- special category data as defined by the General Data Protection Regulation\*, and/or
- data which might be considered sensitive in some countries, cultures or contexts?

\*Examples of special category data are data:

- which reveals racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership;
- concerning health (the physical or mental health of a person, including the provision of health care services);
- concerning sex life or sexual orientation;
- genetic or biometric data processed to uniquely identify a natural person.

No (Please delete as applicable)

**10. Do you confirm that all personal data will be stored and processed in compliance with the General Data Protection Regulation (GDPR 2018)? (Choose one only, delete that which does not apply)**

- I will not be working with any personal data

**11. I confirm that:**

- The information in this form is accurate to the best of my knowledge.
- I will continue to reflect on and update these ethical considerations in consultation with my supervisor.

Yes

# RISK ASSESSMENT FORM



## FIELD / LOCATION WORK

DEPARTMENT/SECTION: BARTLETT SCHOOL OF PLANNING

LOCATION(S): **WHERE WILL YOUR WORK BE BASED? (LONDON, ENGLAND)**

PERSONS COVERED BY THE RISK ASSESSMENT: **SOPHIE BUTTERWORTH**

**BRIEF DESCRIPTION OF FIELDWORK (including geographic location): I WILL BE CARRYING OUT MY RESEARCH IN LONDON AS THE CASE STUDY HS2 IS LOCATED HERE AND ALL PARTICIPANTS WILL BE BASED IN THE UK. INTERVIEWS AND FOCUS GROUPS WILL FOR THE MOST PART BE CONDUCTED VIA MICROSOFT TEAMS TO INCREASE THE NUMBER OF WILLING PARTICIPANTS AND WILL ALLOW ME TO INTERVIEW THOSE OUTSIDE OF LONDON IN LEEDS, BIRMINGHAM, MANCHESTER.**

### COVID-19 RELATED GENERIC RISK ASSESSMENT STATEMENT:

Coronavirus disease (COVID-19) is an infectious disease caused by coronavirus SARS-CoV-2. The virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. Droplets fall on people in the vicinity and can be directly inhaled or picked up on the hands and transferred when someone touches their face. This risk assessment documents key risks associated fieldwork during a pandemic, but it is not exhaustive and will not be able to cover all known risks, globally. This assessment outlines principles adopted by UCL at an institutional level and it is necessarily general. Please use the open text box 'Other' to indicate any contingent risk factors and control measures you might encounter during the course of your dissertation research and writing.

Please refer to the Dissertation in Planning Guidance Document (available on Moodle) to help you complete this form.

### **Hazard 1: Risk of Covid -19 infection during research related travel and research related interactions with others (when face-to-face is possible and/or unavoidable)**

**Risk Level - Medium /Moderate**

**Existing Advisable Control Measures:** Do not travel if you are unwell, particularly if you have COVID-19 symptoms. Self-isolate in line with NHS (or country-specific) guidance.

Avoid travelling and face-to-face interactions; if you need to travel and meet with others:

- If possible, avoid using public transport and cycle or walk instead.
- If you need to use public transport travel in off-peak times and follow transport provider's and governmental guidelines.
- Maintain (2 metre) social distancing where possible and where 2 metre social distancing is not achievable, wear face covering.
- Wear face covering at all times in enclosed or indoor spaces.
- Use hand sanitiser prior to and after journey.
- Avoid consuming food or drinks, if possible, during journey.
- Avoid, if possible, interchanges when travelling - choose direct route.
- Face away from other persons. If you have to face a person ensure

that the duration is as short as possible.

- Do not share any items i.e. stationary, tablets, laptops etc. If items need to be shared use disinfectant wipes to disinfect items prior to and after sharing.
- If meeting in a group for research purposes ensure you are following current country specific guidance on face-to-face meetings (i.e rule of 6 etc.)
- If and when possible meet outside and when not possible meet in venues with good ventilation (e.g. open a window)
- If you feel unwell during or after a meeting with others, inform others you have interacted with, self-isolate and get tested for Covid-19
- Avoid high noise areas as this mean the need to shout which increases risk of aerosol transmission of the virus.
- Follow one way circulation systems, if in place. Make sure to check before you visit a building.
- Always read and follow the visitors policy for the organisation you will be visiting.
- Flush toilets with toilet lid closed.
- 'Other' Control Measures you will take (specify):

**NOTE: The hazards and existing control measures above pertain to Covid-19 infection risks only. More generalised health and safety risk may exist due to remote field work activities and these are outlined in your Dissertation in Planning Guidance document. Please consider these as possible 'risk' factors in completing the remainder of this standard form. For more information also see: [Guidance Framework for Fieldwork in Taught and MRes Programmes, 2021-22](#)**

Consider, in turn, each hazard (white on black). If **NO** hazard exists select **NO** and move to next hazard section.

If a hazard does exist select **YES** and assess the risks that could arise from that hazard in the risk assessment box.

**Where risks are identified that are not adequately controlled they must be brought to the attention of your Departmental Management who should put temporary control measures in place or stop the work. Detail such risks in the final section.**

#### **ENVIRONMENT**

**The environment always represents a safety hazard. Use space below to identify and assess any risks associated with this hazard**

*e.g. location, climate, terrain, neighbourhood, in outside organizations, pollution, animals.*

Examples of risk: Weather/climate in the UK does not present a risk.

#### **CONTROL MEASURES**

**Indicate which procedures are in place to control the identified risk**

- work abroad incorporates Foreign Office advice
- only accredited centres are used for rural field work
- participants will wear appropriate clothing and footwear for the specified environment
- refuge is available

work in outside organisations is subject to their having satisfactory H&S procedures in place  
OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**EMERGENCIES**

Where emergencies may arise use space below to identify and assess any risks

*e.g. fire, accidents*

Examples of risk: loss of property/work

**CONTROL MEASURES**

Indicate which procedures are in place to control the identified risk

participants have registered with LOCATE at <http://www.fco.gov.uk/en/travel-and-living-abroad/>

contact numbers for emergency services are known to all participants

participants have means of contacting emergency services

a plan for rescue has been formulated, all parties understand the procedure

the plan for rescue /emergency has a reciprocal element

OTHER CONTROL MEASURES: please specify any other control measures you have implemented: backing up work on OneDrive

FIELDWORK 1

May 2010

**EQUIPMENT**

Is equipment used?

NO

If 'No' move to next hazard  
If 'Yes' use space below to identify and assess any risks

*e.g. clothing, outboard motors.*

Examples of risk: inappropriate, failure, insufficient training to use or repair, injury. Is the risk high / medium / low ?

**CONTROL MEASURES**

Indicate which procedures are in place to control the identified risk

the departmental written Arrangement for equipment is followed

participants have been provided with any necessary equipment appropriate for the work

all equipment has been inspected, before issue, by a competent person

all users have been advised of correct use

special equipment is only issued to persons trained in its use by a competent person

OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**LONE WORKING**Is lone working  
a possibility? YESIf 'No' move to next hazard  
If 'Yes' use space below to identify and assess  
any  
risks*e.g. alone or in isolation  
lone interviews.*

difficult to summon help. Low risk as will mostly be at home.

**CONTROL MEASURES**

Indicate which procedures are in place to control the identified risk

<input checked="" type="checkbox"/>	the departmental written Arrangement for lone/out of hours working for field work is followed
<input type="checkbox"/>	lone or isolated working is not allowed
<input type="checkbox"/>	location, route and expected time of return of lone workers is logged daily before work commences
<input type="checkbox"/>	all workers have the means of raising an alarm in the event of an emergency, e.g. phone, flare, whistle
<input type="checkbox"/>	all workers are fully familiar with emergency procedures
<input type="checkbox"/>	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**ILL HEALTH**

*e.g. accident, illness, personal attack, special personal considerations or vulnerabilities.*

**The possibility of ill health always represents a safety hazard. Use space below to identify and assess any risks associated with this Hazard.**

Risk: Getting ill, cold/COVID. Low risk.

**CONTROL MEASURES**

**Indicate which procedures are in place to control the identified risk**

- all participants have had the necessary inoculations/ carry appropriate prophylactics
- participants have been advised of the physical demands of the research and are deemed to be physically suited
- participants have been adequate advice on harmful plants, animals and substances they may encounter
- participants who require medication should carry sufficient medication for their needs
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**TRANSPORT**

**Will transport be required**

<b>NO</b>	<b>X</b>
<b>YES</b>	

**Move to next hazard**

**Use space below to identify and assess any risks**

*e.g. hired vehicles*

Examples of risk: accidents arising from lack of maintenance, suitability or training

Is the risk high / medium / low?

**CONTROL MEASURES**

**Indicate which procedures are in place to control the identified risk**

- only public transport will be used
- the vehicle will be hired from a reputable supplier
- transport must be properly maintained in compliance with relevant national regulations
- drivers comply with UCL Policy on Drivers [http://www.ucl.ac.uk/hr/docs/college\\_drivers.php](http://www.ucl.ac.uk/hr/docs/college_drivers.php)
- drivers have been trained and hold the appropriate licence
- there will be more than one driver to prevent driver/operator fatigue, and there will be adequate rest periods
- sufficient spare parts carried to meet foreseeable emergencies
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**DEALING WITH THE PUBLIC**

**Will people be dealing with public**

**YES**

**If 'No' move to next hazard**

**If 'Yes' use space below to identify and assess any risks**



*e.g. interviews, observing*

Examples of risk: causing offence, being misinterpreted. Medium risk

**CONTROL MEASURES**

Indicate which procedures are in place to control the identified risk

- all participants are trained in interviewing techniques
- advice and support from local groups has been sought
- participants do not wear clothes that might cause offence or attract unwanted attention
- interviews are conducted at neutral locations or where neither party could be at risk
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**FIELDWORK**

**3**

May 2010

**WORKING ON OR**

**Will people work on**

**NO**

**If 'No' move to next hazard**

**NEAR WATER**

**or near water?**

**If 'Yes' use space below to identify and assess any risks**

*e.g. rivers, marshland, sea.*

Examples of risk: drowning, malaria, hepatitis A, parasites. Is the risk high / medium / low?

**CONTROL MEASURES**

Indicate which procedures are in place to control the identified risk

- lone working on or near water will not be allowed
- coastguard information is understood; all work takes place outside those times when tides could prove a threat
- all participants are competent swimmers
- participants always wear adequate protective equipment, e.g. buoyancy aids, wellingtons
- boat is operated by a competent person
- all boats are equipped with an alternative means of propulsion e.g. oars
- participants have received any appropriate inoculations
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**MANUAL HANDLING (MH)**

Do MH activities take place?

NO

If 'No' move to next hazard  
If 'Yes' use space below to identify and assess any risks

*e.g. lifting, carrying, moving large or heavy equipment, physical unsuitability for the task.*

Examples of risk: strain, cuts, broken bones. Is the risk high / medium / low?

**CONTROL MEASURES**

Indicate which procedures are in place to control the identified risk

- the departmental written Arrangement for MH is followed
- the supervisor has attended a MH risk assessment course
- all tasks are within reasonable limits, persons physically unsuited to the MH task are prohibited from such activities
- all persons performing MH tasks are adequately trained
- equipment components will be assembled on site
- any MH task outside the competence of staff will be done by contractors
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**SUBSTANCES**

Will participants work with

 NO

If 'No' move to next hazard  
 If 'Yes' use space below to identify and assess any risks

substances

*e.g. plants, chemical, biohazard, waste*

Examples of risk: ill health - poisoning, infection, illness, burns, cuts. Is the risk high / medium / low?

**CONTROL MEASURES**

Indicate which procedures are in place to control the identified risk

the departmental written Arrangements for dealing with hazardous substances and waste are followed  
 all participants are given information, training and protective equipment for hazardous substances they may encounter

participants who have allergies have advised the leader of this and carry sufficient medication for their needs

waste is disposed of in a responsible manner

suitable containers are provided for hazardous waste

OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

**OTHER HAZARDS**

Have you identified any other hazards?

 NO

If 'No' move to next section  
 If 'Yes' use space below to identify and assess any risks

*i.e. any other hazards must be noted and assessed here.*

Hazard:

Risk: is the risk

**CONTROL MEASURES**

Give details of control measures in place to control the identified risks

Have you identified any risks that are not adequately controlled?

<input type="checkbox"/> NO	<input checked="" type="checkbox"/> X
<input type="checkbox"/> YES	<input type="checkbox"/>

Move to Declaration  
 Use space below to identify the risk and what action was taken

**DECLARATION**

The work will be reassessed whenever there is a significant change and at least annually. Those participating in the work have read the assessment.

Select the appropriate statement:

I the undersigned have assessed the activity and associated risks and declare that there is no significant residual risk

I the undersigned have assessed the activity and associated risks and declare that the risk will be controlled by the method(s) listed above

NAME OF SUPERVISOR

**De Vos, Jonas**

**FIELDWORK 5**

May 2010

FINAL GRADE

GENERAL COMMENTS

**/100**

**Instructor**

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PAGE 1

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PAGE 2

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PAGE 3

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PAGE 4

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PAGE 5

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PAGE 6

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PAGE 7

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PAGE 8

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PAGE 9

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PAGE 10

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PAGE 11

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PAGE 12

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PAGE 13

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PAGE 14

---

PAGE 15

---

PAGE 16

---

PAGE 17

---

PAGE 18

---

PAGE 19

---

PAGE 20

---

PAGE 21

---

PAGE 22

---

PAGE 23

---

PAGE 24

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PAGE 25

---

PAGE 26

---

PAGE 27

---

PAGE 28

---

PAGE 29

---

PAGE 30

---

PAGE 31

---

PAGE 32

---

PAGE 33

---

PAGE 34

---

PAGE 35

---

PAGE 36

---

PAGE 37

---

PAGE 38

---

PAGE 39

---

PAGE 40

---

PAGE 41

---

PAGE 42

---

PAGE 43

---

PAGE 44

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PAGE 45

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PAGE 46

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PAGE 47

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PAGE 48

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PAGE 49

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PAGE 50

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PAGE 51

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PAGE 52

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PAGE 53

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PAGE 54

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PAGE 55

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PAGE 56

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PAGE 57

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PAGE 58

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PAGE 59

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