

The Rail Central Rail Freight Interchange

Northampton Gateway Examination

Response to the Northampton Gateway Updated Cumulative Impact Assessment on behalf of Ashfield Management Limited and Gazeley GLP Northampton s.à.r.l.

Northampton Gateway PINS Reference Number TR050006

26 February 2019

Introduction

- 1. This is a response to the Updated Cumulative Impact Assessment (UCIA) which was provided by Northampton Gateway (NG) as Document 8.13 on the 11th January, 2019 and made available to the Rail Central (RC) team on 23rd January, 2019. A review of the NG UCIA has been carried out by the RC team.
- 2. This response is structured as follows:
 - Purpose and status of the NG UCIA;
 - Information Available;
 - Separation of Cumulative and Comparative Assessments;
 - Appropriate CIA Methodology;
 - o Technical Cumulative Issues; and
 - Summary

Purpose and Status of the NG UCIA

- 3. It is RC's understanding that the purpose of the UCIA is to ensure that the Examining Authority (ExA) have an updated assessment of the cumulation of environmental effects of the NG scheme with other projects (inter-project cumulative effects), and within the project itself on multiple receptors (intra-project cumulative effects, in the terminology used in IEMA's guide to "Shaping Quality Development" or impact interactions). However, the NG UCIA has been limited to the additional impact of the RC proposals, which was considered separately to other projects as part of the NG Environmental Statement (ES) (Document 5.2).
- 4. It is not clear why the UCIA does not provided an update to the assessment of Impact Interactions outlined in Chapter 15 of the NG Environmental Statement (ES). As part of the Examining Authority Questions (ExAQ1) the NG Applicant provided a summary of residual effects identified in the ES as part of Appendix 2 to 'Document 8.2: Applicants Response to ExA First Written Questions'. The UCIA comprises an update to the Environmental Assessment submitted as part of the DCO application. However, the residual effects in this summary matrix are not the same as those shown in Tables 15.1 and 15.2 of Chapter 15 of the NG ES (i.e. the original CIA). For example, conclusions of residual effects in relation to noise, air and transportation differ, and agricultural land and cultural heritage (built) have been omitted in the Chapter 15 tables. Therefore, although the Environmental Assessment has been updated, the intra-project cumulative assessment has not been altered to take account of these changes. This therefore indicates that the ExA will not have sight of an up-to-date cumulative assessment when they make their recommendation to the Secretary of State.
- 5. Similarly, it is not clear why a further screening exercise to identify if any other developments of relevance have come forward in the intervening period has not been provided as part of the UCIA. The four projects chosen were identified during the NG scoping exercise in 2016. It is not inconceivable that an area with significant development in recent years could have resulted in a development with potential cumulative impacts with NG.

6. These two issues raise questions as to the effectiveness and thoroughness of the UCIA undertaken by the Applicant, and whether it is "fit for purpose" - regardless of the accuracy of the submitted assessment. The methodology for the UCIA is considered further below.

Information available

- 7. Any CIA is to be based on the information available at the time of assessment. RC agrees with NG therefore that Chapter 17 of the RC ES contains the appropriate information on which to base the NG UCIA.
- 8. However, RC is currently undertaking a strategic review of the package of highway mitigation works following recent Relevant Representations for the RC application and feedback from both Northamptonshire County Council and Highways England. The programme for the resolution of any issues extends beyond ISH4. Therefore the RC team are unable to helpfully comment on the validity of some of the residual effects identified in Chapter 17 of the RC ES (Highways and Transportation) and other traffic related residual effects (such as on Air Quality and Noise and Vibration). These will be issues that RC requires to demonstrate are acceptable with NG in place during the course of the RC examination.
- 9. Although it is likely that the majority of the conclusions within Chapter 17 of the RC ES will remain valid (acknowledging that any unexpected effects would require mitigation and therefore the residual effect is likely to stay the same) such an assumption cannot be confirmed or justified at this time and it is therefore accepted that the level of uncertainty placed on the RC assessment in relation to traffic, is increased. This is in accordance with Advice Guidance Note 17 from the Planning Inspectorate which advocates the need for a CIA to identify uncertainty.

Separation of Cumulative and Comparative Assessments

- 10. The NG UCIA focuses to a material degree on a comparative assessment between NG and RC as well as indicating where NG assert there are shortcomings with the RC ES. In doing so the UCIA blurs comparative and cumulative assessments illegitimately. This approach is flawed in the context of CIA, with limited confidence that can be placed on conclusions reached. The issue in (inter-project) CIA is not which site is "better" or which is creating the most environmental impact but rather what is the impact of the two (or more) sites together, and whether that cumulative effect creates an acceptable environmental impact as a whole.
- In addition, as indicated above, the UCIA has only focussed on NG and RC together, and not other committed development, which could also potentially add to this overall inter-project cumulative effect.
- 12. Overall, therefore, the UCIA has not strictly undertaken a CIA, with reduced reliability that can be placed on its overall conclusions.
- 13. RC has produced a separate response to Document 5.2: Updated Comparative Analysis of Northampton Gateway and Rail Central ('Rail Central Response to Updated Comparative Analysis of Northampton Gateway and Rail Central Appendix 2.4 to Environmental Statement (Document 5.2)'). This separate response also responds to comparative issues discussed within the NG UCIA (this includes questions and criticisms raised by the NG team on the RC ES).

Appropriate CIA Methodology

14. We acknowledge the NG team's response to previous questions raised by the RC team in relation to the CIA methodology. However, there remain a number of issues which have not been fully addressed, creating uncertainty in the conclusions of the NG UCIA.

- 15. Issues expressed on the methodology are as follows:
 - Selection of appropriate projects for the assessment of inter-project impacts with committed development In response to RC's previous question on why so few committed projects had been identified, indicated (at para 1.7 of the UCIA) that the majority of RCs identified 35 cumulative projects were subsequently shown not to be relevant in terms of the likelihood of cumulative effects with the RC application, by virtue either of the distance between the RC site and the committed site, or the size and nature of the listed commitments. In practice, there were over ten other committed projects considered by RC but not by NG that were identified as contributing to the overall cumulative effects considered by the RC team, for example Cl 1¹ (Northampton J16 Strategic Employment Site) and Cl 6 (Towcester South SUE). In the RC Cumulative Effects Assessment, these projects contributed to the conclusions in relation to air quality, agricultural land, built heritage, biodiversity, noise and vibration and socio-economics. Ultimately, however, there were no significant cumulative effects identified on shared receptors as a result of these projects being part of the cumulative background.
 - NG appears to make the argument that even if more projects had been considered in their cumulative assessment, they would be unlikely to affect the conclusions reached.
 Assuming NG accepts RC's conclusions that there were no potential significant cumulative effects on shared receptors resulting from these identified projects (and that therefore the same projects would also not be affected by their own project, cumulatively) such an argument is reasonable.
 - However, this argument is poorly justified and explained in the CIA itself (or in the UCIA). This is indicative of the general point RC has raised throughout the NG examination, that a poor description of methodology and the principles used in screening projects (which could indeed then be excluded from further assessment, based on their nature, timescale or location, for example) leads to a lack of confidence in the robustness of the assessment undertaken.
 - Do the identified four projects represent an up-to-date list of projects for consideration It is understood that the identification of NG's chosen four projects dates back to the NG scoping process completed in 2016 (see below). A confirmation that the Applicant has screened subsequent committed development that could have a cumulative impact with NG is required, with a justification provided for excluding any identified projects from further assessment (if relevant). Such a confirmation would give confidence to the ExA that the cumulative "background" has not altered materially since 2016, and that the chosen four projects remain representative of the cumulative situation, or whether any other development of relevance has come forward in the intervening period. The UCIA has not provided this.
 - Whether the identified four projects have been agreed with stakeholders and any other
 projects suggested for inclusion by stakeholders were properly assessed

 NG undertook a
 scoping exercise in October 2016, and the scoping opinion was received from PINS in
 December 2016. Comments on the cumulative assessment were received from:
 - Northampton Borough Council (NBC) who mentioned that in addition to three identified projects in the scoping report (Northampton (South) SUE, Rail Central and the Smart Motorways project) account should be taken of cumulative impacts arising from the following developments:

¹ These reference numbers were used in RC's CIA.

- South of Brackmills SUE in Northampton Borough
- DIRFT in Daventry District
- Proposed Development at Mere Lane, Bittesby (at Magna Parkin Harborough District, Leicestershire)
- Peterborough City Council who requested that cumulative impacts of NG were considered alongside the strategic allocation contained within the Peterborough Core Strategy DPD (2011) for a similar proposal (policy CS8) albeit there was no DCO application or scoping opinion request at the time (or subsequently).
- South Northamptonshire Council identified several additional major developments and proposals that may be relevant in the assessment of cumulative impact of the proposed development (in addition to those identified by NBC and the Applicant):
- Northampton Junction 16 Strategic Employment Site (Policy E8 of the West Northamptonshire Joint Core Strategy (JCS))
- Towcester South SUE (Policy T3 JCS)
- Silverstone Circuit (Policy E5 JCS)
- Northampton West SUE (Policy N4 JCS)
- Northampton Upton Park SUE (Policy N9 JCS)
- Northampton Norwood Farm/Upton Lodge SUE (Policy N9A JCS)
- Weedon Depot (Policy BN6 JCS)
- East Midlands Gateway Strategic Rail Freight Interchange
- East Midlands Intermodal Park
- Appendix 1.2 of the NG ES contained "Environmental Statement Scoping Opinion Issues and Responses". This sought to fulfil the requirement in the 2017 EIA Regulations (Regulation 14 (3)) that "where a scoping opinion has been adopted, (the ES must) be based on the most recent scoping opinion adopted". In regards to cumulative issues, the matrix referred only to NBC's response. This acknowledged that the South of Brackmills SUE was added into the assessment, but that the other two projects were already included within the transport modelling and were considered too far remote from the site to have direct environmental cumulative effects beyond highways. No comment was made on Peterborough City Council or South Northamptonshire Council comments on cumulative issues, and their suggested projects were not addressed further in NGs assessment. It is not considered that the Applicant therefore "based" the ES on the scoping opinion, as no reference was made to the opinion of key stakeholders even if it was decided that there would be no potential for the suggested projects to result in a cumulative impact on shared receptors.
- Whether all identified cumulative projects have been assessed for each environmental topic The original CIA in Chapter 15 of the NG ES presents a series of separate assessments of each of the identified four projects in combination with NG, as opposed to an assessment all of the projects together. The NG UCIA does not rectify this, especially as

the focus is on a comparative assessment (as outlined above). This indicates that a robust CIA has not been carried out, as it does not consider the overall cumulative effect on each identified shared receptor (where the shared receptors are indeed identified).

Technical Cumulative Issues

Points of Agreement

- 16. Both the NG UCIA and RC ES agree that there will be no significant adverse cumulative effects to receptors associated with the following topic areas: socio-economics; ground conditions and contamination; air quality (e.g. dust and operational air quality, excluding traffic) and hydrology, drainage and flood risk. This is due to the mitigation put in place by both projects independently to ensure either beneficial or no adverse cumulative effects. As there is no fundamental disagreement in the conclusions reached on these topics, they are not discussed further.
- 17. There is also no fundamental disagreement in the conclusion reached relating to the following topic areas: agricultural land, archaeology, waste and resource efficiency and biodiversity. These assessments conclude that although RC and NG will increase the magnitude of effect on certain shared receptors (i.e. agricultural land in the region, archaeological assets underground, regional waste capacity and receptors including hedgerows, farmland including farmland birds, and commuting and foraging bats) the cumulative effect would still not be significant, due to mitigation put in place by both projects and the general scale of the receptors in the area compared to what would be lost. These topics are not addressed further.
- 18. NG's UCIA in relation to built heritage concludes that there would be a cumulative (visual) effect arising to the Conservation Area at Milton Malsor and the listed building Mortimers. Both projects independently would cause an effect to these receptors, and cumulatively these effects would still be present and different (i.e. one project would not entirely screen the other). The effect caused by RC in isolation (during construction and operation) would result in a moderate adverse level of effect that would be permanent (albeit mitigated with time as landscaping matures). This is considered to be a significant environmental effect caused by RC in isolation. NG would cause a negligible and minor effect on the same receptors, which NG considers does not result in a significant environmental effect. However, as this effect would be in addition to the RC effect; overall, the cumulative effect would be greater than RC in isolation. RC considers that this would still be a moderate (and significant) cumulative effect. Whilst the NG team have not made such a specific conclusion on significance, the NG UCIA concludes that 'the primary and most apparent impact on these assets will arise from the RC scheme' (para 5.9.3). Therefore, there is no fundamental disagreement on the conclusions of this assessment – nor of the general conclusions that these would be the only two assets where a cumulative effect of any magnitude is likely to occur.

Omissions from NG UCIA

19. The NG team has not addressed climate change in their UCIA. This seems an omission considering the beneficial, significant residual effects identified in the RC ES associated with a reduction in greenhouse gases associated with a modal shift of road to rail. Cumulatively, it would seem logical that both NG and RC together could increase this beneficial effect, unless NG considers that its own project will have no beneficial impact alone on climate change.

Points of Disagreement

20. Further technical cumulative issues relating to landscape and visual, noise and vibration and lighting are addressed in the separate sections below. The RC team disagrees with the conclusions reached by the NG team on the cumulative conclusions associated with these topics.

Landscape and Visual

- 21. As discussed above but of particular relevance to this topic, the NG team confuses the assessment of one project in its own right, with the assessment of cumulative effects (i.e. combined effects considering both projects in-combination). This casts doubt on the overall robustness of their assessment.
- 22. In the case where the UCIA states that RC 'would obscure' views of NG, then significant cumulative visual effects cannot be as a result of views of RC in isolation (e.g. para 2.48 and 2.49 of the UCIA). A cumulative effect cannot be created by one project in isolation. For example, at Willow Lodge along Northampton Road (Residential Receptor R2 in RCs LVIA and P11 in NGs assessment), RC would block views of NG. This is acknowledged in RCs ES (paragraph 15.469) that RC alone causes the effect and there is no cumulative effect (though NG alone also would result in a minor adverse effect).
- 23. Where there is a cumulative effect (i.e. RC and NG would both be visible), the assessment of visual effects at para 2.43 onwards indicates where RC would form the greater part of any cumulative view. The UCIA fails to report where NG would form the greater part of a cumulative view, for example at Collingtree, (where RC would effectively be entirely screened) and Courteenhall/West Lodge (para 2.47). In practice it is evident that some receptors will be closer to one project than another, so that project will form the greater part of any particular view. The decision is therefore whether the view as a whole is acceptable/to what extent it is changed. Although NG is entitled to "cherry pick" views which it considers are beneficial to its case, such an approach does not provide a rounded cumulative assessment, or indicate overall how the cumulative effects of both projects (ideally with other committed developments included) affect the visual amenity of the area as a whole.
- 24. The assessments provided in the UCIA Cumulative Landscape effects and Cumulative Visual effects tables (i.e. the level of effect assessed at a number of receptors) are different to the cumulative assessments reached by RC. For example, the effects of RC alone at Willow Lodge (a high sensitivity receptor Receptor R2 in RC and P11 in NGs assessment) at year 15 are assessed by RC as "minor adverse" (Table 15.36 of the RC ES), and by NG as "major adverse", with NG concluding a resulting cumulative effect of "major adverse". (In practice, as mentioned above, this receptor would not experience a cumulative effect rather RC alone would cause the effect so there would be no cumulative effect with NG). Although the methodology used by NG is not clearly defined, this difference could only be because the NG assessment does not duly consider the effectiveness of the embedded or adaptive mitigation proposed by RC. This is an incorrect approach to cumulative impact assessment which requires to consider the *residual* cumulative effect on the identified shared receptors (i.e. having regard for mitigation). It is also unclear why there is a failure to recognise the embedded mitigation associated with RC, when the embedded mitigation of NG is continually considered.
- 25. Similarly, Paragraph 2.52 of the UCIA states that the visual effects on the Public Right of Way (RoW NG receptor F3-F8 and RC receptors KX13, RD22, RD3, KZ14 and RD6) would arise almost entirely from RC and that "major adverse" cumulative effects would result. This is because views of RC would be the prominent view from the diverted RoW rather than views of NG. However, these views would be "exacerbated" partly because NG raises the RoW on the screening bund. Therefore cumulative views will be affected by the NG development by bringing users of the RoW onto an artificial, engineered landscape bund. The footpath route proposed by RC alone allows for the RoW to be diverted through the "softer" landscaping proposed by RC. Although significant adverse effects would still occur as a result of RC alone (due to the changes in views from the RoW), these would be from a lower level, with greater potential for screening. The cumulative assessment carried out by RC along this ROW resulted in "minor adverse" cumulative effects by Year 15, reflecting the maturing planting from both projects which would largely screen the built aspects of the developments.

26. The NG UCIA also fails to recognise the fact that the cumulative effect will be to create a larger site, with inevitably a greater number of receptors affected. The cumulative contribution of NG or RC would vary dependent on the receptor; with NG contributing greater to some effects and RC contributing greater to others.

Noise and Vibration

- 27. The NG UCIA substantially underestimates the noise sources and levels generated by the NG SRFI site. This is addressed in the separate document addressing comparative impacts. However, it will evidently affect the cumulative conclusions reached, as there could be an assumption that overall a cumulative effect is acceptable at a given receptor (NSR), when it is not. Therefore NGs cumulative assessment of construction and operational noise arising from both SRFIs cannot be relied on. As with other topics, there is also a misunderstanding as to the nature of the CIA it is not to identify which project is causing a perceived issue but rather whether the overall cumulative effect at the identified NSR is acceptable.
- 28. The cumulative assessment of railway noise and vibration does not make clear how NG have carried out the assessment, or why certain assumptions regarding routes and timings of trains have been made. As a result, it is not possible to conclude whether the cumulative effect of both schemes will be a significant one at identified receptors. There could be an argument instead that had different assumptions been made on train timing should both NG and RC be operational at the same time, that a significant cumulative effect would not occur. For example, cumulatively, overall the number of freight trains accessing each site may increase at a slower rate cumulatively.
- 29. However, it is clear that NG have misunderstood the rail movement forecasts provided in their application. Para 2.130 suggests that cumulative effects of average rail noise would increase to above the threshold of significance as a result of the RC scheme in 2043. Similarly in 2033 and 2043, the NG team indicate an increase in railway noise induced awakenings, identified at 5 receptors (previously just 3 receptors with NG only) though no calculations are presented by NG to justify this statement.
- 30. However, the 2033 and 2043 rail movement forecasts include all potential allocated movements as specified by Network Rail, and these would occur whether taken up by RC or NG or both or indeed any other development. Therefore there is no reason to imply that RC would cause the "exceedance" even if this were the purpose of the assessment. There can be no cumulative increase in rail noise assumed over the long term as this is limited by Network Rail's forecast horizon. Therefore given the argument above in relation to Network Rail's forecast horizon, any further cumulative increases over the long term seem unlikely.
- 31. Overall, the NG CIA on noise and vibration fails to justify whether there would be a significant adverse cumulative impact arising from developments in cumulation with NG.

Lighting

32. Cumulative effects of lighting rely on there being a significant adverse cumulative impact of residual lighting on shared receptors. The assessment carried out in the RC ES (Chapter 19) concluded that the RC project alone would result in a negligible residual effect. This assessment was carried out based on baseline measurements of light, and used an objective and recognised assessment methodology (Lighting Impact Assessment (Institute of Lighting Professionals ILP Guidance Notes for the Reduction of Obtrusive Light (2011)). It is therefore uncertain why the NG UCIA addressed this topic, and identified potentially significant cumulative impacts.

- 33. Although the methodology in the NG cumulative lighting assessment is poorly described, and the matrices used for determining impact magnitude and receptor sensitivity does not follow standard guidance (as indicated below), it appears that NG have not taken account of the mitigation proposed in the RC assessment; the RC Operational Parameter Plan lighting approach meets all international recognisable codes and standards metrics to ensure negligible residual effects would occur. In addition, NG also have not correctly addressed the three elements of light pollution namely light trespass/ encroachment, glare and sky glow, focussing instead only on sky glow (which occurs only under certain specific, atmospheric conditions such as mist and cloud cover, and is relevant only for loss of star-view, which is less important when atmospheric conditions include mist and cloud cover).
- 34. An example of the errors in the NG assessment include the definitions used in the UCIA at Table 1 (p51 construction) and Table 2 (p54 operation). In the RC ES assessment at Table 19.6 residential receptors over 100m away are assessed as receiving a 'Negligible' Magnitude of Effect (as a result of the distance mitigating the effect of lighting even poorly aimed lighting) and residential receptors are deemed to have "low" sensitivity, as they are tolerant of change in artificial light conditions without detriment to character. This is in accordance with the aforementioned 2011 ILP guidance. NG however, have increased the perceived magnitude and receptor sensitivity of the Rail Central assessment at Table 1 and 2, so have unsurprisingly identified a higher pre-mitigation cumulative impact from both developments. These assumptions are unqualified and therefore just conjecture.

Summary

- 35. The UCIA provided by NG does not comprise a robust CIA. Key issues with the assessment are:
 - Generally the NG UCIA focusses on a comparative assessment between NG and RC as well as indicating where there are perceived shortcomings with the RC ES. This approach is flawed in the context of CIA, with limited confidence that can be placed on conclusions reached. A CIA requires to identify the overall impact arising on a particular receptor whether that cumulative effect creates an acceptable environmental impact as a whole, and not compare the relative effects caused by each project.
 - There is a general misunderstanding as to the purpose of CIA not to identify which project is causing a perceived issue but rather whether the overall cumulative effects at the identified shared receptors are acceptable.
 - The UCIA is limited to the additional impact of the RC proposals and does not review the other three "committed" projects assessed in the original CIA.
 - No screening has been reported to identify if any other developments of relevance have come forward in the intervening period from the original identification of projects undertaken in 2016.
 - The argument for failing to consider a wider scope of projects is poorly made, and no attempt has been made to justify why only four projects are considered to have the potential to result in cumulative effects with NG -or what criteria were used to screen/ sift these projects.
 - There is no justification for failing to consider other projects raised by stakeholders at the scoping stage in 2016 and therefore the ES has not been "based on" the scoping opinion as required within the 2017 EIA Regulations

- It is not clear if the assessment in the UCIA includes cumulative effects on shared receptors arising from all the cumulative projects or just, as it appears, RC.
- The UCIA does not provide an update to the assessment of Impact Interactions (intraproject cumulative effects) outlined in Chapter 15 of the NG, when the reporting of residual effects has altered since the original DCO submission. The intra-project assessment should therefore have been reviewed to take into account these changes to ensure the ExA has sight of an up-to-date cumulative assessment when they make their recommendation to the Secretary of State.
- 36. Notwithstanding these issues, both the NG UCIA and RC ES agree that there will be no significant adverse cumulative effects to receptors associated with socio-economics; ground conditions and contamination; air quality (e.g. dust and operational air quality, excluding traffic) and hydrology, drainage and flood risk, due to the mitigation put in place by both projects (and indeed, any other committed projects) independently to ensure either beneficial or no adverse cumulative effects. Similarly, there is no fundamental disagreement in the conclusions reached relating to the cumulative assessments on agricultural land, archaeology, waste and resource efficiency and biodiversity which conclude that although both RC and NG will increase the magnitude of effect on certain shared receptors, the cumulative effect would not be significant, due to mitigation put in place. Both cumulative assessments of built heritage conclude that there would be a moderate (and significant) cumulative effect on the Conservation Area at Milton Malsor and the listed building Mortimers.
- 37. There are however differences in the assessments relating to landscape and visual, noise and vibration and lighting.
- 38. NG's updated LVIA cumulative assessment shows a fundamental misunderstanding of the nature of a cumulative assessment, in that one project alone cannot create a cumulative effect of any significance. If one site is entirely obscured by another, the impact is generated by the obscuring site. CIA is also not a tool to identify which project creates the greatest impact. The assessment should rather address whether a view/ landscape as a whole is acceptable/to what extent it is changed. RC considers that the assessment made by NG is incorrect in that it does not assess residual effects and duly consider the effectiveness of the mitigation proposed by RC. Overall, the NG UCIA also fails to recognise the fact that the cumulative effect will be to create a larger site, with inevitably a greater number of receptors affected. The cumulative contribution of NG or RC would vary dependent on the receptor; with NG contributing greater to some effects and RC contributing greater to others.
- 39. The NG UCIA substantially underestimates the noise sources and levels generated by the NG SRFI site which will affect the cumulative assessment of the projects, as well as comparatively place NG in a "better light". Therefore NGs cumulative assessment of construction and operational noise arising from both SRFIs cannot be relied on. The methodology fails to describe what assumptions have been made, and therefore whether different conclusions could be reached with different assumptions
- 40. The lighting assessment uses an inappropriate cumulative methodology, and does not follow recognised guidance. It also fails to consider residual effects, which in practice would be negligible assuming RCs stated mitigation, so there would be limited potential for a significant cumulative impact to arise. The assumptions made in this CIA are therefore unqualified and just conjecture.