Deadline 8 – Summary of Position

Date: 23rd September 2021

File Ref: P21-2319

Subject: **Fordley Hall – Deadline 8 Submission**

1.0 DEADLINE 8 - SUBMISSION

1.1 Create Consulting Engineers have been appointed by the Grant family to provide a written response at Deadline 8 in line with the Planning Inspectorate timescale.

1.2 The purpose of this submission is twofold;

Update PINs on questions raises as highlighted below;

Provide an update on Issues raised by Create Consulting

D7 submissions by Create Consulting on behalf of Mr Grant and Mr and Mrs Dowley reiterates and reinforces concerns previously set out in respect of the methodology of noise assessment, the subsequent levels at which mitigation would be engaged and the consequent harms that they consider that would arise.

(i) Please provide a detailed response to the criticisms raised, and explicitly set out where the differences remain between the parties.

ExQ3: 09 September 2021
Responses due by Deadline 8: 24 September 2021
ExQ3 Question to: Question:

(ii) Do ESC concur with the approach and findings of Create Consulting?
(iii) Time is of the essence is there a potential for a SoCG which clearly sets out the areas of agreement and disagreement?
(iv) The response to previous similar concerns in REP5-119 is noted. Is there anything further that could be provided to assist the ExA in understanding the

differences between the parties and which approach might be regarded as the most appropriate.
(v) If the approach that Create Consulting recommends were to be used, is it possible to understand whether a better outcome for the residents of the affected properties might result?
(vi) Consequently, is additional mitigation justified?

- Provide a response to the Applicants comments to Ex Q2 at CA.2.16 relating to the reinstatement of Fordley Road (north and southbound) and the removal of the SLR junction onto Fordley Road.

1.3 We also noted that at ISH8 the Applicant confirmed new information would be provided at DL7 on the noise mitigation and monitoring plans, whilst a draft was supplied at DL6 by the Applicant, the detail provided was woefully lacking in detail, thus making the ISH8 position of the Applicant impossible to fully consider, this was not provided at DL7.

1.4 We understand will now be provided at DL8 and therefore additional time is required to adequately review the update from the Applicant.

1.5 The process available to PINS does not allow sufficient time to adequately interrogate any submission given the DCO Inquiry which finishes on 14th October.

1.6 Our Client firmly believes this is unacceptable behaviour from the Applicant. We therefore strongly appeal to PINS to force re-engagement on the specific areas highlighted about to allow all parties to fully explore the documents and changes to be proposed by the Applicant.

2.0 FORDLEY HALL – NOISE

2.1 At DL7, the Applicant provided comment on the work completed by Create stating the following. Creates comments are made in bold italics and then addressed in subsequent sections.

- The Noise Monitoring and Management Plan will define more detailed mitigation measures which will answer the concerns raised by CCE once the works processes have been finalised.

  Noted but this has not yet been seen.

- The Noise monitoring and Management plan will require the contractor and SZC Co. to undertake further noise calculations in advance of the works. All construction methods and mitigation will be submitted to ESC for their approval before any works will be allowed to begin.

This is not acceptable given the DCO process and we need more certainty as set out below.

- It was not clear to the Applicant if CCE were suggesting that all phases of work across a 24 month period would occur on the same day at the same shortest separation distance.

  CCE were justifying the potential worst-case scenario which is reasonable.

- CCE claim that the SOAEL for construction noise should be based on the ABC method as detailed within BS 5228 and DMRB LA111. SZC Co. have based their SOAELs for construction noise based on schemes of similar stature, such as Tilbury 2, HS2 and West midlands Interchange.

  Create believe that this approach does not consider adequately the rural context of the surroundings in this instance.

- CCE has undertaken baseline noise monitoring at the properties which resulted in far lower measurements than those taken by SZC Co. The CCE measurements were taken at the properties themselves.

  Create confirm this is a correct statement and is the most appropriate method for truly assessing the sound level at these properties.

- SZC Co. states that these do not make a material difference. CCE believe that they are important as a) it provides context to the area and b) the LOAEL is the existing ambient sound level. SZC Co. states that mitigation will be implemented through the use of Code of Construction Practice and the Noise Monitoring and Management Plan.

- SZC Co. have not considered the negative impact on the external amenity spaces of the residents as it is not required under BS 5228 or DMRB LA111.

  Given the rural location and the outdoor lifestyle/open space available, Create, believe consideration should be given to these existing private and relaxing amenity places.

2.2 An initial meeting has taken place between Richard Bull from EDF and Mike Brownstone from Resound Acoustics on Wednesday 22nd September. The purpose of this meeting was to examine the differences between the parties and to determine the most appropriate way forward to assist PINs decision making.

2.3 Given the time available prior to Deadline 8, it was agreed by both parties to present an initial response to PINS separately, with a proposal to submit a Statement of Common Ground for DL10.

Do ESC concur with the approach and findings of Create Consulting

2.4 No, there are differences of opinion relating the method of assessment and the background noise levels.

Time is of the essence is there a potential for a SoCG which clearly sets out the areas of agreement and disagreement?

2.5 Both parties have agreed to work towards preparing and issuing a Statement of Common Ground for DL10.

The response to previous similar concerns in REP5-119 is noted. Is there anything further that could be provided to assist the ExA in understanding the differences between the parties and which approach might be regarded as the most appropriate.

2.6 We are aware new information is to be submitted by the Applicant at DL8 with an update to the noise monitoring and mitigation requirements, it is therefore not possible to comment on this at this time.

If the approach that Create Consulting recommends were to be used, is it possible to understand whether a better outcome for the residents of the affected properties might result?

2.7 The ambient sound levels measured by the Applicant at a position close to the curtilage of Fordley Hall were found to vary between 45 and 47 dB $L_{Aeq,30}$ mins during the day. At night time, the ambient sound level reduced to 31-34 dB $L_{Aeq,2h}$.

2.8 It is important to stress that the sound levels were only monitored by the Applicant for maximum duration of 30 minutes at each of the day time measurements. The existing ambient sound levels measured by Create over a course of 10 days, were shown to have the most commonly occurring day time ambient sound level of 38 and 39 dB $L_{Aeq,1h}$. This was found to be 7-8 dB lower than those measured by the Applicant. For context, a change of about 10 dB is considered to be a doubling of perceived sound levels.

2.9 The method within DMRB LA111 requires the LOAEL to be set at the baseline $L_{Aeq,T}$ levels, which has a severe impact on the point at which mitigation could be triggered. The SOAEL should be set at the relevant threshold levels dictated by Table E.1 of BS 8233 using the ABC method.

2.10 In this instance, CCE are of the opinion that the SOAEL should be set at 65 dB $L_{Aeq,T}$.

Consequently, is additional mitigation justified?

2.11 Yes mitigation is required and justified.

2.12 The typical road traffic noise (generally referred to as the L_{A10} level) was calculated to have a logarithmic average of 44 dB $L_{A10,18h}$ and 37 dB L_{night}, from the measurements by CCE at Fordley Hall. We agree that it is unreasonable to require the Applicant to mitigate noise levels down to present ambient sound levels. We feel however that mitigation is required to provide an acceptable amenity level and we have set out what below.

2.13 It should be noted that this is not a solution to offset any financial compensation which is being addressed by others on behalf of the Grant family.

2.14 Create have carried out some preliminary calculations, using 3D noise propagation software, CadnaA to assess the positive impact that a 3 m high barrier/earth bund/combination, would have on Fordley Hall.

2.15 CadnaA uses the most relevant methodology (works to ISO 9613-2 using CRTN methodology).

2.16 The model and the proposed barrier locations are shown in Figure 2.1. to reduce noise from the link road the barrier should be located as close as possible to the road and run continuously alongside it where possible. The proposed barrier location has been shown in blue.

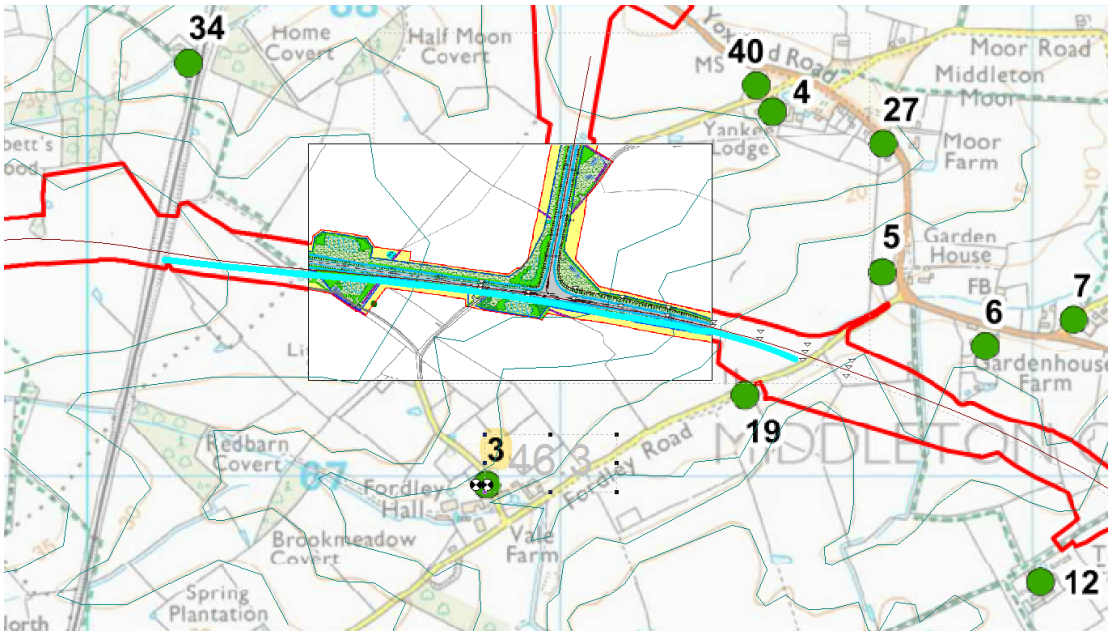


Figure 2.1 – CadnaA model and proposed barriers

2.17 Calculations have shown that a 3-metre-high barrier would provide approximately 3 dB attenuation to the first-floor windows of Fordley Hall. Using the predicted ambient noise levels from Table 4.14 of the main Noise and Vibration Chapter (Volume 6 Chapter 4 Noise and Vibration) this would reduce the ambient sound level from the SLR **without Sizewell C construction** traffic to 32 dB $L_{Aeq,16h}$.

2.18 By applying the same 3 dB attenuation, the sound levels for a typical day during the **peak construction year** (using the data from Table 4.18 of Chapter 4) would be 46 dB $L_{A10,18h}$ and 39 dB L_{night}, including the 3 dB attenuation provided by the barrier. This would increase slightly for the busiest day in the peak construction year to 47 dB $L_{A10,18h}$.

2.19 Applying the same 3 dB attenuation to the sound levels provided by the Applicant in Table 4.15 from Chapter 4 Noise and Vibration, the sound levels have been reported to be at 54 dB $L_{Aeq,T}$ (reported 57 dB minus 3 dB) for the main construction phase of the SLR.

2.20 This has been highlighted as being **Not Significant** for the working hours between Monday to Friday between 07:00 to 19:00 and **Significant** for working hours outside of these times, including Saturday afternoon and evening works.

2.21 If any of the Applicants site compounds are located close to noise sensitive receptors, we would expect additional barriers to be required to help control noise levels from these areas, in addition to the SLR barrier.

2.22 Even with this additional mitigation, when considering the context of the location, i.e. a rural setting, this predicted sound level of 54 dB $L_{Aeq,T}$ would be 15 dB above the most commonly occurring day time ambient sound level of 39 dB $L_{Aeq,1h}$. and therefore other areas of mitigation/compensation may be necessary.

3.0 FORDLEY ROAD – UNDERPASS RESPONSE AND ACTIONS

3.1 Our Client and Create continue to raise significant, legitimate concerns with respect to the SLR and it is requested that the Applicant responds accordingly.

3.2 There continues to be no engagement by the Applicant to address this matter, however we have reviewed the comment made by the Applicant at DL7 and respond as below Applicant comments are in bold / italics with our response after each point.

Create Consulting Engineers' Option A suggestion to provide the SLR crossing over Fordley Road (retained at its current level) with a minimum clearance of 5.3m to the underside of the SLR shows the Project longsection alignment lifted some 3.5m. The SLR is already on a 3.5m high embankment thereby the alignment suggested is over 7m in height at Fordley Road. An increase in embankment height of this magnitude at this location is considered a severe impact on the landscape and an unacceptable detrimental impact on the adjacent Vale Cottage properties.

3.3 Create have reviewed and revised Option A , this is provided in Appendix A.

3.4 The height above Fordley Road is reduced to demonstrate a reduced impact on the adjacent property. The vertical height required is close to the elevated topography to the east, which could be graded into the existing landscape. Option A also omits the need to cut into the

immediate existing increasing landscaping to the east. Vegetation could be erected to help screen the SLR from Oakview House (Vale Cottage) property and they will benefit from Fordley Road remaining open as would all residents of Fordley Road and Middleton Moor.

The Create Consulting Engineers' Option A plan layout shows an underpass at SLR chainage 2900 and the long section shows it at chainage 2850. This is assumed to be an error and the underpass on the long section should also be at chainage 2900 which would change the vertical alignment suggested as a result. The long section underpass position would therefore need to move eastwards to match the plan position.

3.5 Create have revised Option A.

3.6 This reduces the previous amount of fill that may be required. Note that your location of CU001A appears to be overlaid over the existing watercourse on the long section which differs to the layout plan for the watercourse diversion.

The Create Consulting Engineers' suggested vertical road profile is shown to dip either side of the underpass location which would reduce driver visibility and introduce a safety concern with vehicles being partly hidden in the dip. The Suffolk County Council highway design standards vertical curvature and site stopping distances for the dipped sections is below the requirements of a 60 mph speed limit and would therefore not likely be an acceptable safe design to the highway authority. The Create Consulting Engineers' Option A is therefore also rejected on highway design safety considerations.

3.7 In the updated Option A the vertical road profile mitigates any dipped sections to generate a vertical curvature that would be acceptable to Suffolk County Council and have an acceptable visibility, this is considered acceptable and viable.

It is expected that the Environment Agency would want to understand the implications for the culverted section of the Middleton Drain watercourse, including ensuring the underpass has sufficient width to enable a mammal passage on one or both banks and whether this needs to be formally provided in a space between the channel and Fordley Road. The underpass structure would need to retain the watercourse in place adjacent to Fordley Road and therefore the width of the underpass would need to increase. As the watercourse is shown as retained in place there is likely to be less of an impact from a flood risk perspective.

3.8 Maintaining 10-12m for the structure width would accommodate maintaining Fordley Road, the watercourse and a vegetation strip if necessary and this is not considered a reason for dismissing this option.

However, there is a flood risk in the floodplain in this area and there is a chance that the road embankment would act as a barrier across the floodplain. Whilst this is not likely to result in significant flooding it is the responsibility of the Environment Agency who would require modelling to confirm there would be no detrimental impact of retaining the existing watercourse.

3.9 The SLR should account for any increased flood risk resulting from its construction anyway. Maintaining the watercourse rather than diverting would no doubt be the Environment Agency's preferred option in line with the EA Guidance.

Therefore the out of bank flooding that was addressed by the diverted channel in the Project might still be required as a flood relief culvert as a precaution. The culvert would be some 8m longer due to the increased height of the road profile and wider embankments. It is expected that Suffolk County Council might request that the road and channel in the underpass be slightly reconfigured so that it would not flood out of bank underneath the SLR, in which case works would then be required to the watercourse in this Option A. A resulting shorter effective length of watercourse would remove the loss of watercourse offset mitigation length elsewhere provided by the Project design and therefore would not provide a benefit when compared to the Project design. The extent of underpass, embankment and culvert would not reduce the land area required compared to the provision of a t-junction and turning head in the Project submission and thereby would provide no benefit to reduce land area

3.10 This statement is totally false. The removal of impermeable surfaces by not needing the T-Junction would be more sustainable and reduce further impact on flood risk.

3.11 The EDF proposals show that attenuation basins and swales are in place to control the surface water runoff from the SLR which is therefore less likely to contribute to any flood risk to Fordley Road. The updated plans show that the watercourse can be included below the structure and remain undisturbed with a structure of width 10-12m.

For Option A, a wider underpass to span the watercourse and Fordley Road would therefore be required and as a result increase the size and thickness of structure thereby requiring the road alignment to be raised further and increase the embankment widths. A profile to eliminate the dipped sections, alter the underpass position and level, and provide sufficient longitudinal gradient for surface drainage would require the alignment to be lifted for a longer length to that suggested by the Create Consulting Engineers' Option A. This revised option would increase the Project's SLR alignment levels by approximately 4m to create an over-bridge with sufficient clearance to Fordley Road (5.3m). The SLR would already be on an embankment of up to 3.5m, so this arrangement would require a substantial increase in land area required for embankments at Fordley Road.

The engineering required to achieve this would result in a 480m long higher embankment to the east of Fordley Road up to 10m wider to the north and 6m wider to the south. To the west, the embankment would be higher for a length of 400m up to 10m wider to the north and 7m wider to the south before the vertical alignment could tie in to the current design height.

3.12 There would only need to be 70m increased filling directly to the east of the structure in the revised plans. A further filling of 200m long but on average 0.75m depth would be required

between CH3025 to CH3225. The revised Option A however reduces the fill required between CH3225 and CH3575 (approx. 250m) by on average 0.5m depth.

3.13 As a result, the saving of reduction of fill required presented by Option A, negates the cut material by tying into the existing landscape levels

3.14 Analysing the areas beneath the Option A proposed levels, a 22% increase in fill material is required east of Fordley Road.

3.15 To the west a filling of on average 2.3m deep between CH2900 and CH2650 (circa 250m) which would likely involve increasing widths of embankments (if at 1in3 gradient) approximately by 7m either side of the SLR. It is likely that this increased footprint could be achieved within the development boundary.

3.16 Analysing the area beneath the Option A proposed levels, the fill volume would likely be doubled to the west of Fordley Road to achieve clearance over the structure and maintain good visibility through vertical curvature.

3.17 Create have suggested a secondary alignment between CH3300 to CH4100 (shown by dashed lined) which could be explored to generate the additional fill material required to the west of Fordley Road to balance the cut and fill in the vicinity of the structure. This would promote reduced HGV moments for fill materials providing increased sustainability.

The resulting structure and required embankments would be substantial and not in-keeping with the landscape. Although this revised Option A may be deliverable within the Order limits, there would be an increased risk of a further minimal amount of agricultural land being required at the pinch points to the west to provide the access maintenance tracks to the attenuation basins. An increase in embankment height of this magnitude at this location is considered a severe impact on the landscape and an unacceptable detrimental impact on the adjacent Vale Cottage properties.

3.18 The proposed Option A alignment reduces cutting into existing topography of the surrounding landscape within 1km of Oakview House (Vale Cottage). The lowered section versus EDF's alignment between CH 3225 and CH3575 would allow the SLR to be less elevated for distant views over the current landscape and therefore provide some balance to the increase elevation to the west.

The increased size of structure and extent of embankment heights leading to the severity of the visual landscape impact on adjacent properties is therefore not considered an appropriate or suitable proportionate solution to cater for the 80 vehicles per day compared to the Project solution.

3.19 Fordley Road provides an essential link for local traffic and the local agricultural community, and it should therefore not be solely viewed as catering for 80 vehicles per day. The social impact on the local community would be severe and Option A provides a sustainable approach socially within the community.

3.20 Create continue to maintain that Option A is a viable solution for adoption.

The Create Consulting Engineers' Option B suggestion of lowering Fordley Road beneath the SLR with a proposed pumping station was considered but would create a significant localised depression in the landscape which would result in an increased risk of flooding of the road, noting that the Middleton Drain watercourse running alongside Fordley Road is the responsibility of the Environment Agency.

3.21 Option B has been revised (similarly to Option A) with the structure repositioned on the long section and provided in Appendix B.

The clearance from Fordley Road to the underside of the SLR bridge is shown at Option B at a minimum of 5.3m which would cause a significant depression. Fordley Road would also need to be lowered some 3m over a reasonable distance to meet road design standards. To create the required depression for Option B, the lowered Fordley Road would require a cutting embankment in excess of 200m in length and some 7.5m high to the east at a width of up to 22m, and a cutting embankment 3.5m deep to the west at a width of up to 11m.

3.22 The revised Option B plans demonstrate that a combination of road lowering and increasing the height of the SLR could be achieved. Fordley Road could be reduced by 1m which would mean only a 1.6m height increase to the SLR. This in turn reduces materials required to build up adjacent SLR embankments east and west of Fordley Road.

The watercourse would require diverting. The extent of embankment cutting to lower Fordley Road and divert the watercourse would not reduce the land area required compared to the provision of a T-junction and turning head in the Project submission and thereby provides no benefit to reduce land area. The impact of lowering Fordley Road and the surrounding landscape to this extent would increase the required agricultural land area to the north of the SLR Crossing for the reprofiling of Fordley Road and to provide a sufficient grade for the PROW diversion and maintenance access to the attenuation basins to the east.

3.23 Since the lowering is only by 1m, the previous Option B suggested 200m length can be halved. The watercourse would need to be diverted similarly to the detail for the current EDF proposals and a drainage network would need to be installed for the 100m section of Fordley Road to be lowered. With the removal of the T-Junction, the cost balance between the road lowering and associated drainage would likely financially balance that of the T junction construction being removed.

To the south of the Project boundary, the additional land, although minimal to reprofile Fordley Road and create the associated cutting embankments, would severely impact the Vale Cottage residential properties. The extent of embankment cutting, road lowering, and to the severity of the impact on adjacent properties is therefore not considered an appropriate or suitable proportionate solution compared to the Project solution.

3.24 The increase profile is likely to be circa 1.6m and therefore not detrimental when the SLR is already cutting across the landscape. The increase of 1.6m balances the need for Fordley Road to remain fully accessible. Vegetation could be incorporated to screen the SLR.

The surface water mapping, as reported in the FRA [REP2-027] and [REP5-045], shows there is clearly a surface water flood risk / flow route along Fordley Road. Within the FRA it is noted that Fordley Road itself appears to act at least partially as the fluvial flow route in the existing baseline scenario. Fordley Road partially acts as a flow route during extreme storm events – it is hard to apportion the difference between surface water and fluvial flows. However, regardless of this, modifications would be needed to ensure water predominantly flows along the diverted channel and would not follow the path of least resistance under the underpass where it would pond. Even if fluvial flows remain in bank there would still be rainfall / surface water that would flow into this location and become trapped. It is expected that the Environment Agency is unlikely to support the diversion of the watercourse suggested in Option B.

3.25 This remains an issue for the SLR anyway with the introduction of the watercourse diversion. Create's Option B utilises the SLR watercourse diversion detail as well as providing surface water control within the proposed road lowering.

Option B indicates flood water would need to be pumped back out of the underpass. However, the sketch shows this being taken to the upstream side of the SLR and discharges upstream to flow through the culverted section of the diverted channel downstream. In addition, it is expected that Suffolk County Council Lead Local Flood Authority may ask that this is restricted and discharged at a greenfield rate, leading to the need to attenuate and store the water temporarily. Therefore, to create a depression and pump the fluvial flows suggested by the Create Consulting Engineers in Option B is considered to be unacceptable and would likely be strongly opposed by the Environment Agency. In addition, as the pumping drainage approach is less sustainable it would be unlikely to receive support from Suffolk County Council as Lead Local Flood Authority.

3.26 The drainage proposal demonstrates an option to remove surface runoff from within the structure and road lowering, it would likely need to be pumped but is not insurmountable.

In consideration of the impact to the adjacent properties, risk of flooding, sustainability considerations, extent of embankment cuttings, and unlikely support from the authorities it is therefore not considered an appropriate solution or suitable proportionate solution to cater for the 80 vehicles per day.

3.27 Option B reduces additional materials and gives a secondary option to generate more fill material after CH3300 and up to CH4100 to balance the cut and fill. The option demonstrates that surface water runoff could be managed subject to further analysis and utilities the current watercourse measures suggested by EDF.

3.28 In summary, none of the comments made by the Applicant would preclude the implementation of Fordley Road being retained both south and northbound; it would provide

a genuine ‘status-quo’ solution, acceptable to both local community and agri-businesses whilst removing the risk of ‘rat-running’ almost guaranteed by the Applicant’s current design proposal

3.29 This link (underpass?) will provide a vital route for residents along Fordley Road and must be considered in this context as well as neighbouring Parishes which would otherwise be severed.

4.0 CONCLUSIONS AND APPROACH GOING FORWARD

4.1 Our Client and Create continue to raise significant, legitimate concerns with respect to design concept of the SLR.

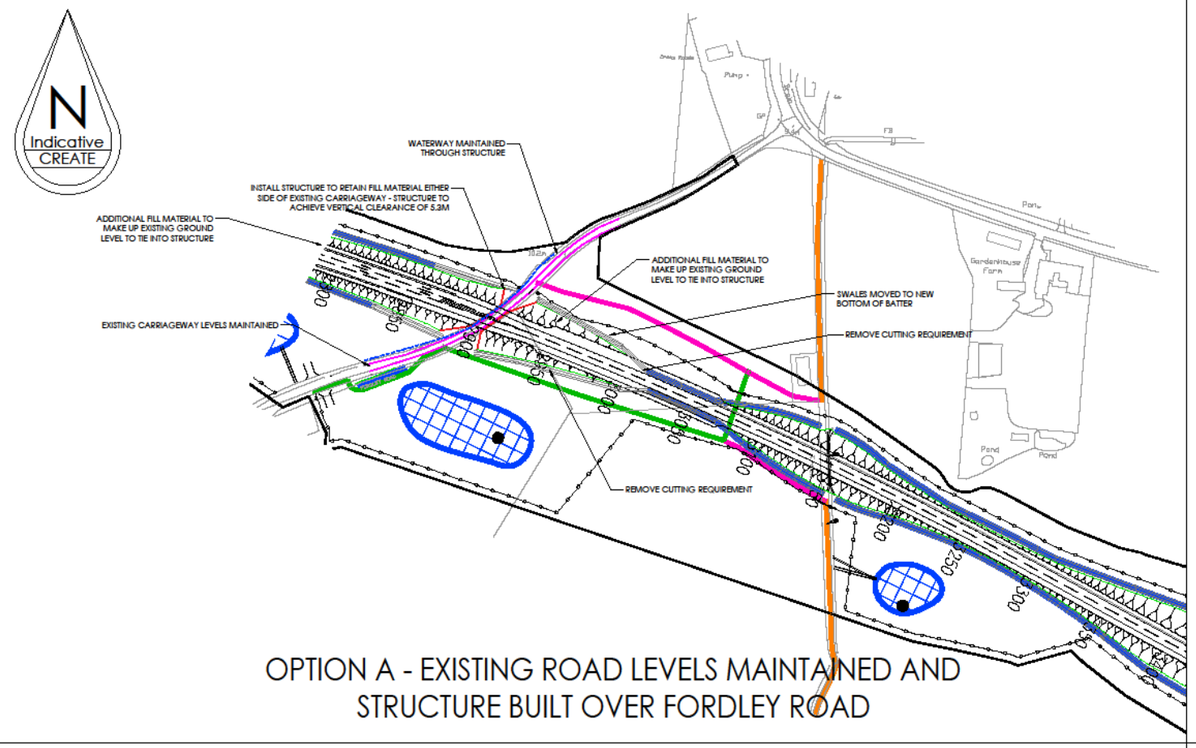
4.2 We are encouraged that the Applicant is now engaging on noise, it is unfortunate this engagement is so very late in the process.

4.3 We have had no engagement from the Applicant on the SLR/ Fordley Road junction which is considered essential.

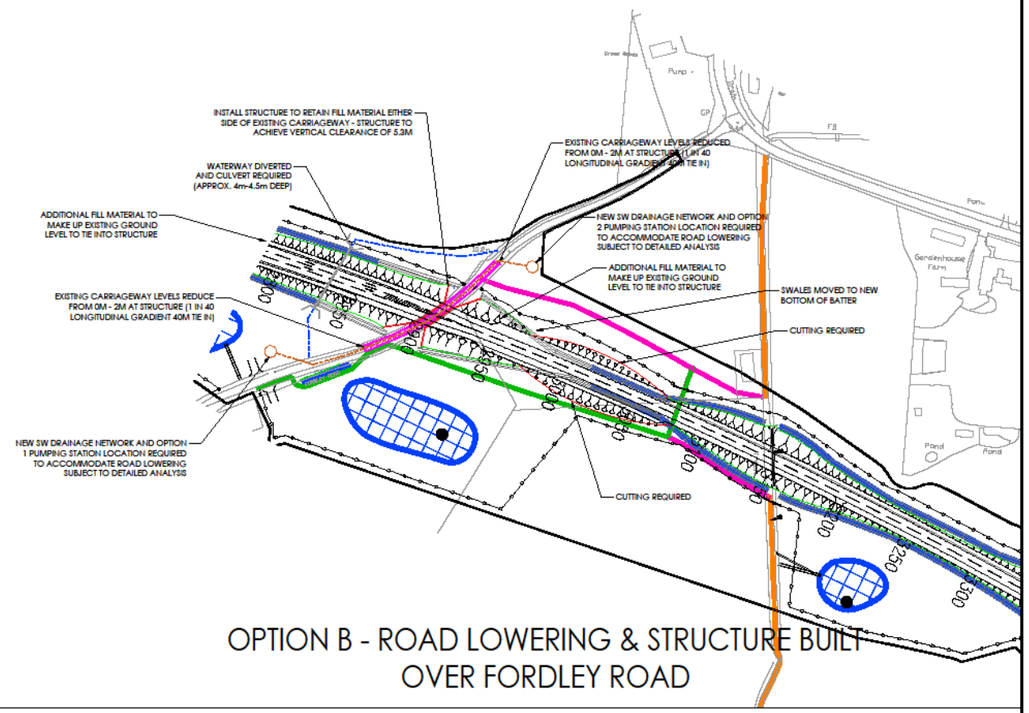
4.4 We therefore seek clarity from PINS on how such important issues can be adequately considered in the limited time now available.

Note By: Stuart Clarke - Engineer
Jody Blackwood – Technical Director
Paul Zanna - Technical Director

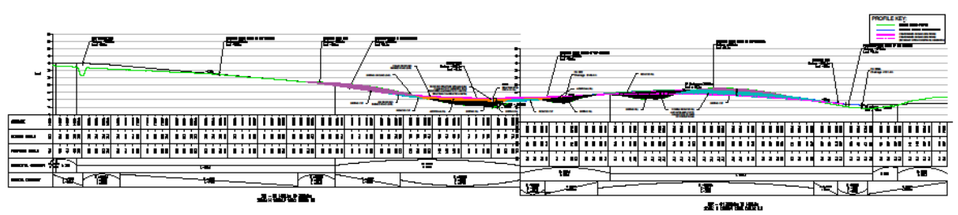
APPENDIX A



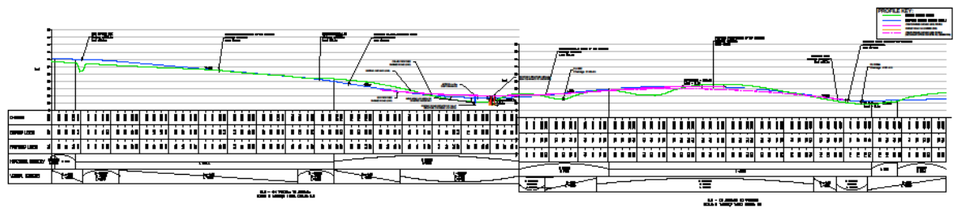
OPTION A - EXISTING ROAD LEVELS MAINTAINED AND STRUCTURE BUILT OVER FORDLEY ROAD



OPTION B - ROAD LOWERING & STRUCTURE BUILT OVER FORDLEY ROAD



OPTION A - INDICATIVE LONG SECTION



OPTION B - INDICATIVE LONG SECTION

REV	DATE	AMENDMENT DETAILS	DRAWN	APPROVED
A	24.09.21	PROPOSALS UPDATED TO REVISED STRUCTURE LOCATION	SC	PZ

NOTES:

1. OVERLAY OF EDF DRAWING LAYOUT OBTAINED FROM SIZEWELL C PROJECT 2.10 SIZEWELL LINK ROAD PLANS PART 1 OF 3 PLANS FOR APPROVAL.
2. CONCEPTS OUTLINED ON THIS PLAN ARE INDICATIVE ONLY AND SUBJECT TO FURTHER INVESTIGATION.
3. THIS PLAN IS FOR INFORMATION ONLY.
4. ALL DIMENSIONS SHOWN ARE APPROXIMATE IN METERS.

PROJECT: SIZEWELL C LINK ROAD	DATE: 19.05.21	DRAWING STATUS: INFORMATION	
	SCALE(S): 1:2000 @ A1	DESIGNED: SC	DRAWN: SC
DRAWING TITLE: FORDLEY ROAD OPTIONS		CHECKED: PZ	APPROVED: PZ
	JOB No: P20-2187		
CLIENT: DAVID GRANT (MIDDLETON)	DRAWING No: 03_001	REVISION: A	

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DO NOT SCALE ORIGINAL SHEET SIZE - A1 Landscape