HOUSTON SOLAR PHOTOVOLTAIC (PV) AND ENERGY STORAGE FACILITY

Transport Statement

IBH0830
Houston Solar Farm
F01
6th July 2023

rpsgroup.com

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
D01	Planning Draft	Conor O'Hara	Stephen Houlihan	Brendan Daly	November 2022
D02	Planning Draft	Conor O'Hara	Stephen Houlihan	Brendan Daly	February 2023
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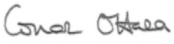
Approval for issue

Conor O'Hara		6 July 2023

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1 INTRODUCTION

1.1 Purpose & Site Context

RPS has been commissioned by Elgin Energy EsCo Ltd to prepare a Transport Statement (TS) in support of its proposed solar photo voltaic (PV) and energy storage facility development on 3no. sites within Houston, Renfrewshire as indicated in **Figure 1.1** below. A site layout is included in **Appendix A**.

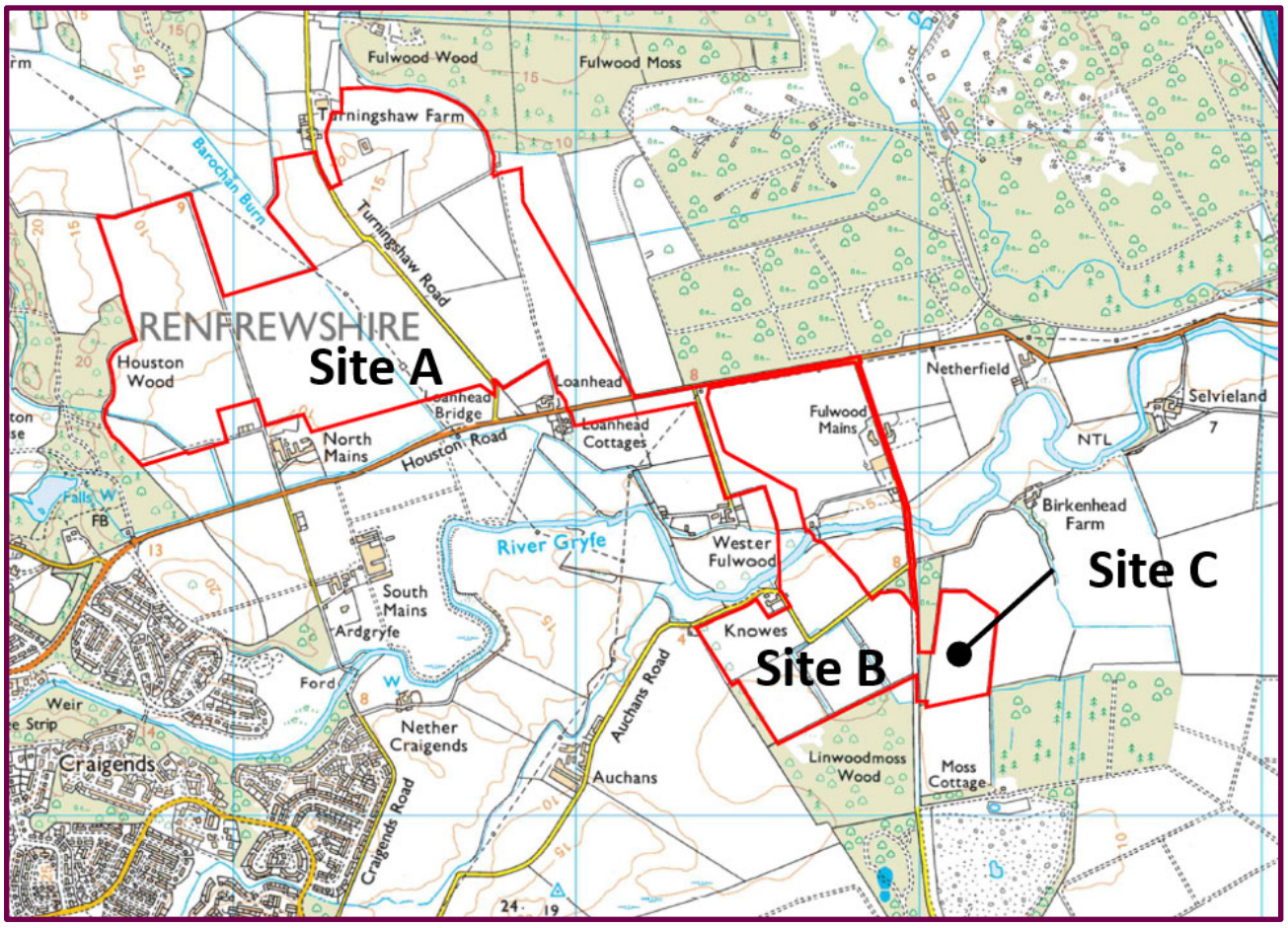

Figure 1.1 – Site Location

As indicated in **Figure 1.1** above the transport environment around the proposed Houston PV site is characterised by a rural setting. Site A of the proposed development will be accessed from both sides of Turningshaw Road, via the creation of new site access junctions leading to the site compound, from this compound the solar panels will be transferred around the wider site by tractor / trailer (or equivalent vehicle) making use of existing field accesses. Site's B and C will be accessed from Moss Road via the creation of a new site access junction leading to the site compound, from this compound the solar panels will be transferred around the wider site by tractor / trailer (or equivalent vehicle) making use of existing field accesses.

Houston Road, Turningshaw Road and Moss Road, are all minor roads. Houston Road and Turningshaw Road are subject to national speed limit and Moss Road is subject to 20mph speed limit. Turningshaw Road and Moss Road connect to Houston Road which provides connectivity to the wider local road network, which then connects to the strategic road network via the M8.

This proposal includes 2no. phases, construction and operation, the most onerous phase of vehicular movements will be associated with the construction phase (16no. weeks), with the operational phase generating ~2-3no. vehicle trip (Transit Van) every week for general maintenance.

The purpose of this TS is to quantify the demand for travel associated with the development and establish whether the local road network can accommodate this increased demand during the construction phase (16no.

weeks). Measures to minimise or mitigate the impact of these construction phase vehicular movements, if necessary, will be outlined in this report.

The TS has been prepared in accordance with the **Transport Assessment Guidance** (July 2012) published by Transport Scotland.

2 POLICY AND GUIDELINES

2.1 National Policy and Guidance

Scotland's **National Planning Framework 4** (NPF4) was adopted by the Scottish Government on 13th February 2023, which sets out a new plan for Scotland to 2045. It acknowledges that Scotland must embrace and deliver radical change to tackle and adapt to climate change, restore biodiversity loss, improve health and wellbeing, build a wellbeing economy and create great places.

- Part 1 of the National Spatial Strategy reaffirms the Scottish Government's energy targets, stating;
  - *"we have set a target of net zero emissions by 2045, and must make significant progress towards this by 2030. This will require new development and infrastructure across Scotland."*
  - *"to significantly reduce greenhouse gas emissions more renewable energy generation will be needed, bringing unprecedented opportunities to strengthen local economies, build community wealth and secure long-term sustainability."*

The policy in NPF4 is supportive of renewable energy developments in appropriate locations. NPF4 also sets out that planning supports business and employment, including sustainable economic growth.

Planning Advice Note (PAN) 75 - Planning for Transport (17 August 2005) provides a framework for how linkages between planning and transport can be managed. It provides good practice guidance which planning authorities, developers and others should follow in their assessment of policy, assessment of proposals and project delivery.

The **Transport Assessment Guidance** (July 2012), published by Transport Scotland, provides information relevant to the preparation of Transport Assessments (TAs) and Transport Statements (TSs) for developments in Scotland. The guidance ensures that mechanisms are in place to specify, assess, revise, implement, monitor and review the impacts that developments will have on the wider transport system.

2.2 Local Policy and Guidelines

2.2.1 Renfrewshire Local Development Plan 2021

This plan sets out strategies, policies and proposals for Renfrewshire over the next 10 years. The Council's Communities, Housing and Planning Policy Board resolved to adopt the Plan on 7th December 2021 and the Plan was adopted on 15th December 2021 and this replaces the 2014 Plan. This Plan was subject to an appeal in relation to the adoption and the outcome of this Court of Session appeal resulted in the quashing of the Local Development Plan in respect of 2no. green belt designations and 1no. residential designation.

The Local Plan identifies, as a key priority, the importance of the continual transition to a low-carbon economy, which is important for mitigating against climate change.

2.3 Transport Assessment Guidance

The Transport Assessment Guidance, published by Transport Scotland, establishes thresholds when a Transport Assessment (TA) or Transport Statement (TS) is required, the guidance states the following;

- A Transport Assessment (TA) is required for most large developments where there is a potential for a major traffic impact on the surrounding transport network. These developments include the following;
  - Food / non-food retail with Gross Floor Area (GFA) over 1,000m^2;
  - Hotels with more than 50no. beds;
  - Residential developments with 100no. dwellings or more;
- Transport Statements tend to be a slimmed down version of a full TA when the traffic impacts are not considered to be significant on the surrounding highway network, but still need to be considered.

3 BASELINE CONDITIONS

3.1 Site Access

The site location is indicated in **Figure 1.1** above. Site A (**Figure 1.1**) is accessed via Turningshaw Road where a new access will be provided in to the site compound. The general location of the accesses is indicated in **Figure 3.1**.

Figure 3.1 – Site A - Accesses – Turningshaw Road

Site B&C (**Figure 1.1**) will be accessed via Moss Road and Auchans Road, which are narrow two way roads (similar to Turningshaw Road) is indicated in **Figure 3.2** below. Given the location of the proposed accesses along the straight section of road, visibility will be good in both directions.

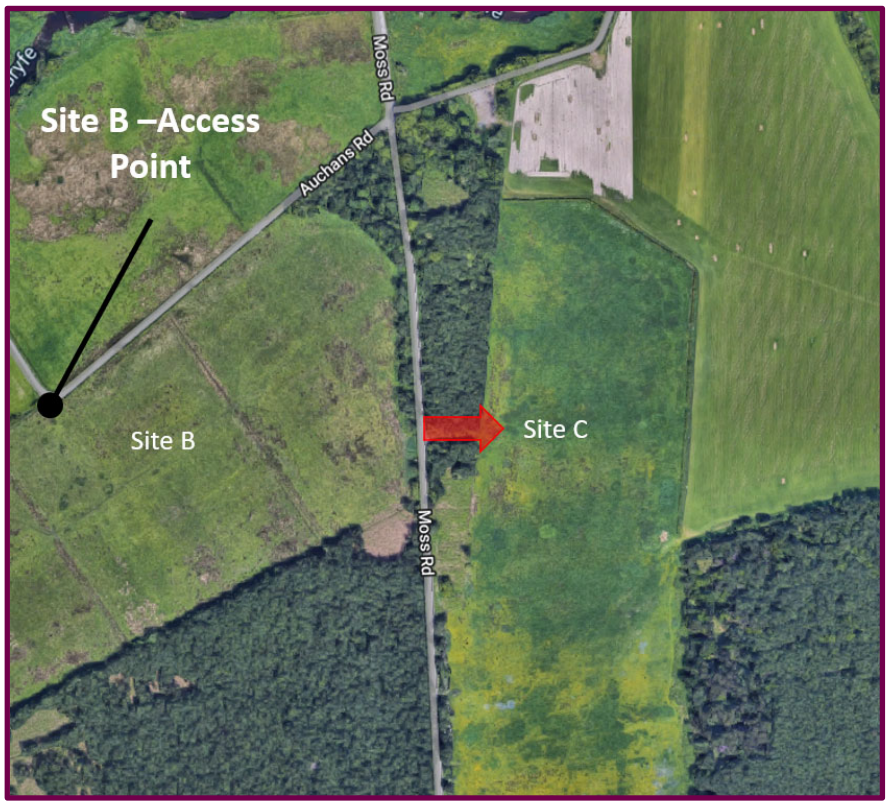

Figure 3.2 – Site B & C - Access – Auchans Road & Moss Road

3.2 Traffic Surveys

In order to determine existing traffic flows at Houston Road (the main traffic carrier to the sites) and Moss Road (typical site access road), Automatic Traffic Counts (ATCs) were undertaken by MHC Traffic Ltd. The surveys commenced at 00:00 Friday 2nd December 2022 and finished on Friday 9th December 2022 at 00:00. The survey location points are illustrated in **Figure 3.3** below.

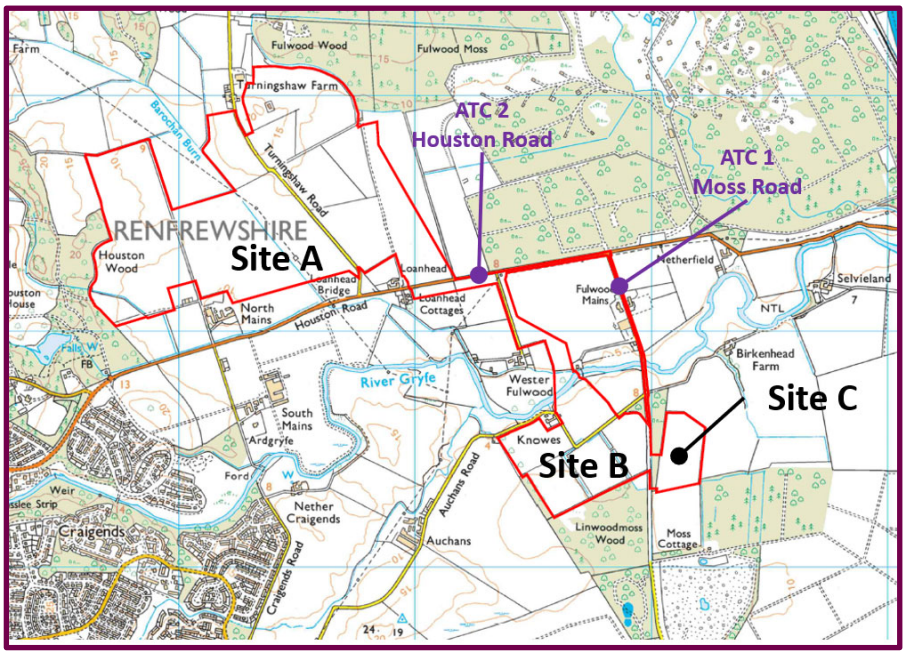

Figure 3.3 – ATC survey Locations

The total daily traffic flows for each day surveyed is indicated in **Table 1** below.

Table 1 : Total Daily Traffic Flows

Total Daily Traffic Flows						
Survey Day	Moss Road (ATC 1)			Houston Road (ATC 2)		
	NB	SB	Total	EB	WB	Total
Saturday 03 December 2022	92	88	180	2476	2462	4938
Sunday 04 December 2022	69	77	146	2046	2044	4090
Monday 05 December 2022	141	144	285	3158	3188	6346
Tuesday 06 December 2022	150	153	303	3224	3610	6834
Wednesday 07 December 2022	111	132	243	3260	3368	6628
Thursday 08 December 2022	143	146	289	3248	3326	6574
Friday 09 December 2022	133	141	274	3184	3196	6380

As illustrated in **Table 1** above Tuesday 06th December 2022 has the highest level of daily traffic flows at both survey sites. Therefore the hourly traffic data (0700 – 1900 hours) for Tuesday 06th December 2022 is presented in **Table 2** overleaf.

Table 2: Hourly Traffic Volumes - Tuesday 6th December 2022

Hourly Traffic Flow Data – Tuesday 6th December 2022						
Time Period	Moss Road			Houston Road		
	North Bound	South Bound	Total	East Bound	West Bound	Total
0700 – 0800	19	5	24	370	154	524
0800 – 0900	15	8	23	450	302	752
0900 – 1000	9	5	14	266	176	442
1000 – 1100	4	7	11	166	150	316
1100 – 1200	7	11	18	188	152	340
1200 – 1300	11	12	23	172	206	378
1300 – 1400	7	6	13	170	180	350
1400 – 1500	7	11	18	180	240	420
1500 – 1600	14	11	25	228	270	498
1600 – 1700	9	19	28	262	440	702
1700 – 1800	14	18	32	202	620	822
1800 - 1900	8	5	13	148	240	388
Total Vehicles (0700 – 1900)	**124**	**118**	**242**	**2802**	**3130**	**5932**

The number of HGV vehicles is also provided from the survey data for Tuesday 06th December 2022 and this is presented in **Table 3**.

Table 3: Number of HGV & HGV Percentage

Number of HGV & HGV Percentage – Tuesday 6th December 2022						
Time Period	Moss Road			Houston Road		
	North Bound HGV	South Bound HGV	Total HGV	East Bound HGV	West Bound HGV	Total HGV
0700 – 0800	1	0	1	0	2	2
0800 – 0900	1	0	1	0	0	0
0900 – 1000	0	0	0	0	0	0
1000 – 1100	0	0	0	2	0	2
1100 – 1200	0	0	0	0	4	4
1200 – 1300	0	2	2	6	0	6

1300 – 1400	0	0	0	2	2	4
1400 – 1500	0	0	0	2	2	4
1500 – 1600	0	0	0	0	2	2
1600 – 1700	1	2	3	0	0	0
1700 – 1800	0	2	2	2	2	4
1800 - 1900	0	2	2	0	0	0
Total Vehicles (0700 – 1900)	**3**	**8**	**11**	**14**	**14**	**28**

Houston Road will be the main corridor used for vehicles connecting to the proposed development sites. Therefore based on the information presented in **Table 3** above, it is clear that both Houston Road and Moss Road accommodate a number of HGVs throughout the day currently and therefore is capable of accommodating a level of HGV traffic.

3.3 Road Safety

Crash Map has been interrogated to determine the number of collisions which have occurred over the most recent 5no. years of data that is currently available (2017-2021), this information is presented in **Figure 3.4** below.

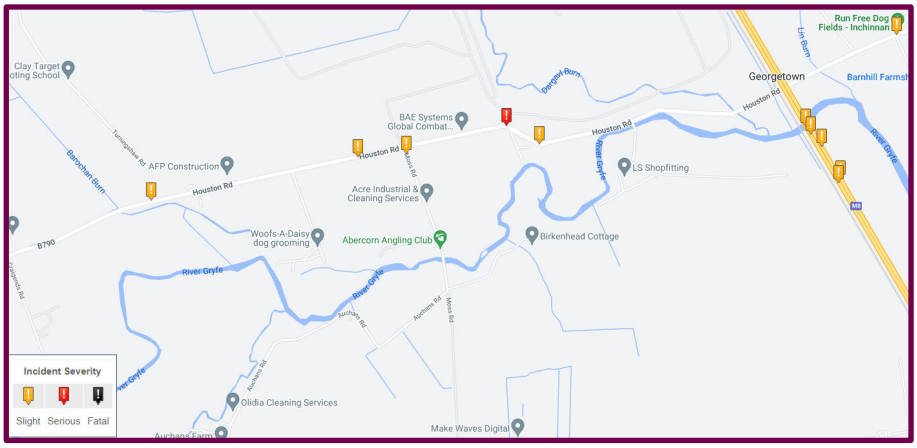

Figure 3.4 – Collision Data 2017 – 2021 (Crash Map)

As indicated in **Figure 3.4** there have been a number of slight collisions and 1no. serious collision recorded in the immediate vicinity of the proposed development site over the last 5no. years (2017 – 2021).

3.4 Pedestrian and Cycle Network

Given the rural nature of Houston Road and Moss Road, they do not benefit from any dedicated pedestrian or cycling infrastructure in the immediate vicinity of the proposed development site.

However, given the nature of the proposed development it is unlikely that there will be a high volume of walking or cycling trips to the site.

4 DEVELOPMENT PROPOSAL

As indicated above given the nature of the proposed development the onerous trip attracting time period will be associated with the construction phase. The operational phase is anticipated to have a very low traffic generation, equating to ~2-3no. vehicle trip (Transit Van) every week for general maintenance.

4.1 Construction Phase Traffic Generation

The construction phase is anticipated to occur over a 16no. week period. Elgin Energy Ltd have provided a breakdown of the number of vehicle trips to the site per construction week and RPS have converted this into two-way trips per week and then calculated the average number of trips per week (based on 5no. day working week) and per day (based on 10no. hour working day), this information is set out in **Table 4**.

Table 4: Construction Phase Trip Generation

Proposed Construction Program																
Activity	**W1**	**W2**	**W3**	**W4**	**W5**	**W6**	**W7**	**W8**	**W9**	**W10**	**W11**	**W12**	**W13**	**W14**	**W15**	**W16**
Ground Works	20no. Deliveries / Week															
Mounting System				51no. Deliveries / Week												
Panel Fitting								60no. Deliveries / Week								
Testing / Commissioning															5no. Deliveries / Week	
TRAFFIC MOVEMENTS (Total TRIPS)																
Ground Works	40	40	40	40	40	40	40	40								
Mounting System				102	102	102	102	102	102	102	102	102	102	102		
Panel Fitting								120	120	120	120	120	120	120	120	
Testing / Commissioning															10	10
Total Weekly Vehicle Trips	40	40	40	142	142	142	142	262	222	222	222	222	222	222	130	10
Total Daily Vehicle Trips*	**8.0**	**8.0**	**8.0**	**28.4**	**28.4**	**28.4**	**28.4**	**52.4**	**44.4**	**44.4**	**44.4**	**44.4**	**44.4**	**44.4**	**26.0**	**2.0**
Total hourly Vehicle Trips**	**0.8**	**0.8**	**0.8**	**2.84**	**2.84**	**2.84**	**2.84**	**5.24**	**4.44**	**4.44**	**4.44**	**4.44**	**4.44**	**4.44**	**2.6**	**0.2**

* - Weekly Trips divided by 5no. days

** - Daily Trips divided by 10no. hours

As indicated in **Table 4** above the most onerous week during the construction phase is **Week 8** when there will be an average of 5.24no. total vehicle trips to the site per hour. This equates to 1no. vehicle either arriving to or departing from the site every 11.4minutes. The trips during the other weeks of the construction phase are predicted to be less than the **Week 8** volume of trips.

Therefore an assessment has been undertaken to determine the impact of the most onerous week of the construction phase upon the traffic data for Houston Road and Moss Road as outlined in **Table 2** above. This analysis is set out in **Table 6** and **Table 5** below;

The percentage split of construction traffic is assumed as 80%/20% for Site A / Site B&C respectively. Therefore the average of 5.24no. total vehicle trips per hour (**Table 4**) will be split (for the purposes of this assessment) as 4.19no. total vehicle trips per hour to Site A and 1.05no. total vehicle trips per hour to Site B.

Table 5: Hourly Traffic Volumes (2022) at Houston Road – Impact of Week 8 Construction Traffic

Hourly Traffic Flow Data at Houston Road – Tuesday 6th December 2022					
Time Period	**East Bound**	**West Bound**	**Total**	**Week 8 Construction Phase HGV**	**% Impact (Week 8 Construction Traffic)**
0700 – 0800	370	154	524	-	-
0800 – 0900	450	302	752	4.19	0.56%
0900 – 1000	266	176	442	4.19	0.95%
1000 – 1100	166	150	316	4.19	1.33%
1100 – 1200	188	152	340	4.19	1.23%
1200 – 1300	172	206	378	4.19	1.11%
1300 – 1400	170	180	350	4.19	1.20%
1400 – 1500	180	240	420	4.19	1.00%
1500 – 1600	228	270	498	4.19	0.84%
1600 – 1700	262	440	702	4.19	0.60%
1700 – 1800	202	620	822	4.19	0.51%
1800 - 1900	148	240	388	-	-
Total Vehicles (0700 – 1900)	**2802**	**3130**	**5932**	**41.92**	**0.71%**

As indicated in **Table 5** above the impact of the proposed development (most onerous week during the construction phase) will result in an insignificant impact upon Houston Road, which is the main traffic corridor serving the proposed development sites.

Table 6: Hourly Traffic Volumes (2022) at Moss Road – Impact of Week 8 Construction Traffic

Hourly Traffic Flow Data at Moss Road– Tuesday 6th December 2022					
Time Period	**North Bound**	**South Bound**	**Total**	**Week 8 Construction Phase HGV**	**% Impact (Week 8 Construction Traffic)**
0700 – 0800	19	5	24	-	-
0800 – 0900	15	8	23	1.05	4.56%
0900 – 1000	9	5	14	1.05	7.49%
1000 – 1100	4	7	11	1.05	9.53%
1100 – 1200	7	11	18	1.05	5.82%
1200 – 1300	11	12	23	1.05	4.56%
1300 – 1400	7	6	13	1.05	8.06%
1400 – 1500	7	11	18	1.05	5.82%
1500 – 1600	14	11	25	1.05	4.19%

1600 – 1700	9	19	28	1.05	3.74%
1700 – 1800	14	18	32	1.05	3.28%
1800 - 1900	8	5	13	-	-
Total Vehicles (0700 – 1900)	**124**	**118**	**242**	**10.5**	**4.33%**

As indicated in **Table 6** above the impact of the proposed development (most onerous week during the construction phase) will result in an insignificant impact upon Moss Road (which is starting from a very low base level of traffic).

From **Table 6** and **Table 5** above it is clear that the proposed development (most onerous week during the construction phase) will result in an insignificant impact upon the surrounding network.

It should also be noted that the construction phase will only be a temporary impact upon the surrounding road network and the volumes of traffic described above are entirely within the range of normal fluctuations in daily traffic that would be expected upon the road network.

4.2 Operational Phase Traffic Generations

Once operational the development will be unmanned and will generate limited vehicle movements associated with the routine maintenance and inspection of the site.

The traffic movements associated with the operational phase of the development are anticipated to have an insignificant impact upon the surrounding highway network and are typically undertaken via a 4x4 or transit van. This is likely to be ~2-3no. vehicle trip (Transit Van) every week for general maintenance. .

5 TRAFFIC MANAGEMENT MEASURES

The primary means of controlling construction vehicular traffic will be through an approved Construction Traffic Management Plan (CTMP), which will inter alia present the minor routes that should be avoided during construction activities. This CTMP will form part of the contractor agreements, offering a means of enforcement by the Site Manager. Typical components of measures that may be included within the CTMP are set out below.

5.1 Temporary Construction Measures

Within the site itself, a construction compound area will provide an area for loading and unloading of vehicles and will provide a turning area to allow vehicles to exit the site in forward gear. All delivery drivers and construction workers will be advised of the construction route prior to making their delivery or commencing work.

It is also proposed that temporary signage will be located in the vicinity of the site access during the construction period to warn drivers of the site entrance, as indicated in **Figure 5.1**.

Figure 5.1 – Temporary Signage in Vicinity of Site Access

There may also be a requirement to identify temporary advance signage on the A726 Barnsford Road, however, if required this will be set out in the final CTMP agreed with the highway authority.

The Applicant will appoint a Site Manager for the project and the details will be provided to Renfrewshire Council once confirmed. The Site Manager for the project will undertake the transport co-ordination role for the proposed development site and their main responsibilities will include:

- Managing implementation of the CTMP;
- Vehicle scheduling;
- Checking for scheduled road works that could disrupt arrivals;
- Checking for scheduled refuse collections to avoid conflict with HGV deliveries within built up areas;
- Handling any complaints; and
- Acting as a point of contact for employees, contractors and the general public.

The Site Manager will ensure that there is adequate liaison between the following key stakeholders throughout the construction period:

- The Contractor;
- The Applicant;
- Site neighbours;
- Other local stakeholders such as emergency services or local transport providers; and
- Renfrewshire Council.

Regular review meetings and telecommunication will be held between the Site Manager and Renfrewshire Council if requested / required. It is envisaged that update meetings / telecommunication will be held on an ad-hoc basis as required. Furthermore, the Site Manager will provide any monitoring data, delivery schedules, complaints or breaches of agreements to Renfrewshire Council if requested.

Given the rural nature of the road network, there does not seem to be a need for a specific restriction in vehicle arrivals times to be implemented.

Mud and debris on the road are regarded as one of the main environmental nuisances and safety problems arising from construction sites. The contractor will ensure that the area around the site including the public highway is regularly and adequately swept to prevent any accumulation of dust and dirt.

While the CTMP is a standalone document it is expected to be read in conjunction with an overarching Traffic Management and Monitoring Plan which is being proposed as a means of co-ordinating deliveries of a number of developments. There will be a regular monitoring of Traffic Management and Monitoring Plan to ensure any issues are picked up and cascaded down to individual CTMPs.

Also, as part of the overall monitoring, an agreement on wear and tear on road infrastructure caused directly by construction traffic would be established prior to construction commencing. The agreement will set out the area of review, scope and response requirement of any dilapidations that can be proven to be linked to construction activities.

The palette of measures which are outlined are based on experience of similar projects and existing knowledge. It is recognised that the contents of the CTMP and measures contained therein will be formed through engagement with the Council in advance of construction.

5.2 Operational Measures

Post construction the only trips to the site will be associated with maintenance and at this stage this is anticipated to be ~2-3no. vehicle trip (Transit Van) every week for general maintenance and therefore will not require any special control measures.

6 CONCLUSIONS

RPS has been commissioned by Elgin Energy EsCo Ltd to prepare a Transport Statement (TS) in support of its proposed solar farm and energy storage facility on a site off Houston Road / Moss Road, Renfrewshire.

This Transport Statement has been prepared in accordance with the Transport Assessment Guidance (2012) document published by Transport Scotland and has also taken account of other relevant national, regional and local policies.

The assessment has considered the traffic generation associated with the most onerous week of the 16no. week construction phase and concluded that the construction phase will not have a significant impact upon the surrounding highway network.

The assessment has considered the traffic generation associated with the operational phase of the development and concluded that the operational phase will have an insignificant impact upon the surrounding highway, the operational phase is anticipated to generate ~2-3no. vehicle trip (Transit Van) every week for general maintenance and this will be via a 4x4 or transit van.

Therefore on the basis of the information presented above this proposal should be recommended for planning approval.

Appendix A Site Layout

N

Substation

Primary Substation

Battery and Storage Area

Turningdykes Farm

Loanhead

Loanhead Cottages

Rowland

North Mains

North Mains Farm Cottages

Fulwood Mains (Restaurant)

Fulwood Mains Cottages

Fulwood Bridge

Wester Fulwood

Wester Fulwood Cottages

Wester Fulwood Barn

The Old Barn

Shed

Pumping Station

Elderslie Burn

Fulwood Burn

Notes

1. Verifying Dimensions: The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services: Any information concerning the location of existing services (above and below ground) indicated on this drawing is intended for general guidance only. All services should be checked on site prior to any work commencing.
3. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
4. © Crown copyright and database rights 2022 Ordnance Survey 0100031673.

LEGEND

- SITE BOUNDARY
- 2 x 12 = 24 MODULE PANEL (12m)
- 2 x 24 = 48 MODULE PANEL (24m)
- 3.5m ACCESS TRACK
- INVERTER CONTAINER
- SECURITY FENCE
- 5m -10m BUFFER FROM VEGETATION, WATER BODY OR TREE CANOPY
- 30m SERIALIZATION ZONE FROM OVERHEAD LINES
- CCTV

NOTE:
This plan is for planning purposes only and is intended to give a general indication of the proposed solar layout subject to final design. It should not be used for construction purposes. It does not include any Landscaping, please see separate Landscaping Masterplan for this.

Rev	Description	By	CB	Date
H	Revised red line boundary	GG	RC	03/04/2023
G	Revised red line and layout	GG	RC	16/03/2023
F	Revised Red line	GG	RC	20/01/2023
E	Small substation added to northern block	GG	RC	06/01/2023
D	Access amendments and fence changes	GG	RC	05/01/2023
C	Red line, layout amendments due to ecology	GG	RC	05/12/2022
B	Boundary amendments	GG	RC	04/10/2022
A	Boundary amendments	GG	RC	01/09/2022

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Project HOUSTON SOLAR FARM

Title SITE LAYOUT PLAN

Status	Drawn By	PM/Checked by
Planning	Gareth Gardener	Ronan Clarke

Site Ref	Scale @ A0	Original Date Created
1101	1:2500	27/06/22

Drawing Number	Rev
1101-ELDERSLIE-002	H

SCALE BARS (Metres)

0 25 50 100 200

C:\Users\Gareth\Elgin Energy\Projects - 1101 - Elderslie Estate\9.0 Drawings\1101-ELDERSLIE-002RevH_230403-(Elderslie Site Layout Plan).dwg