

iRAP in the Planning Process

Enabling Positive Incremental Change

BZ1341-RHD-XX-XX-PP-X-0001

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Planning in the UK

- Any new building or infrastructure project
 - Planning Applications
 - Environmental Impact Assessment (EIA) Regulations
- Principal transport documents
 - Transport Statement or Transport Assessment
 - Transport and Movement chapter of EIA report

Aim: “Mitigate transport impacts”



Typical Approach to Road Safety in Planning



“It is noted that there have been no recorded collisions within the most recent five-year period (2015-2019) along the application site’s frontage including at the existing site accesses with Holt Road. In comparison there have been two recorded collisions (both resulting in slight injuries) at the existing Co-op location in the vicinity of its vehicular access with Holt Road.”

In summary there are a very low number of accidents recorded within the study area and as such there are no existing identifiable highway safety issues within the study area that could be potentially exacerbated by the proposed development.”

Rickman's Green Village

- Farm expansion
- Office
- Retail
- Primary school
- 600 houses

Very rural location

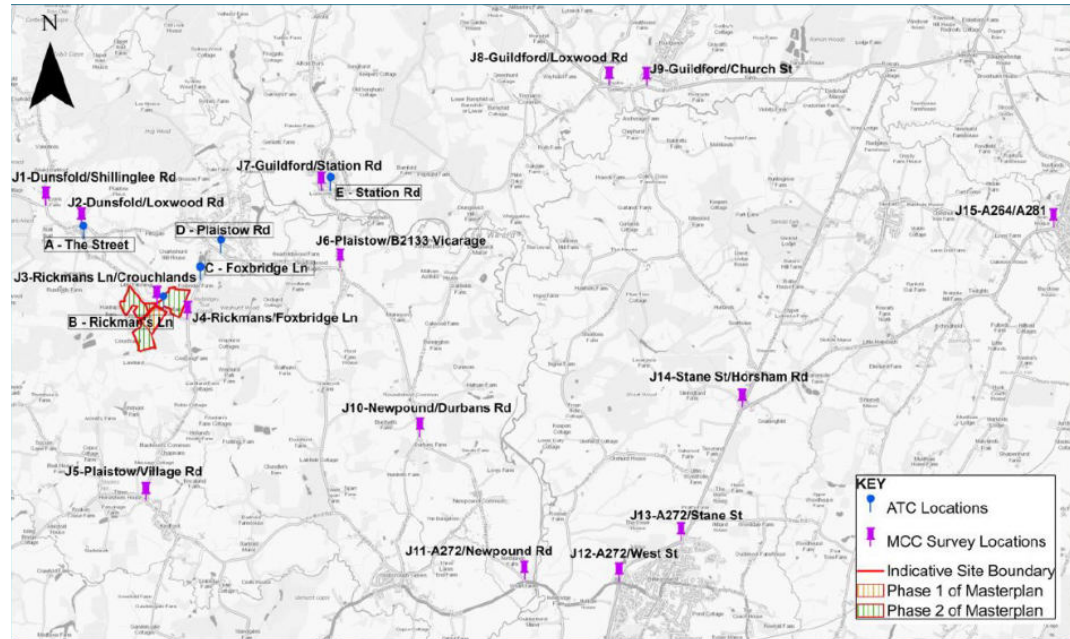
Client aimed for a highly sustainable development and was receptive to a new approach



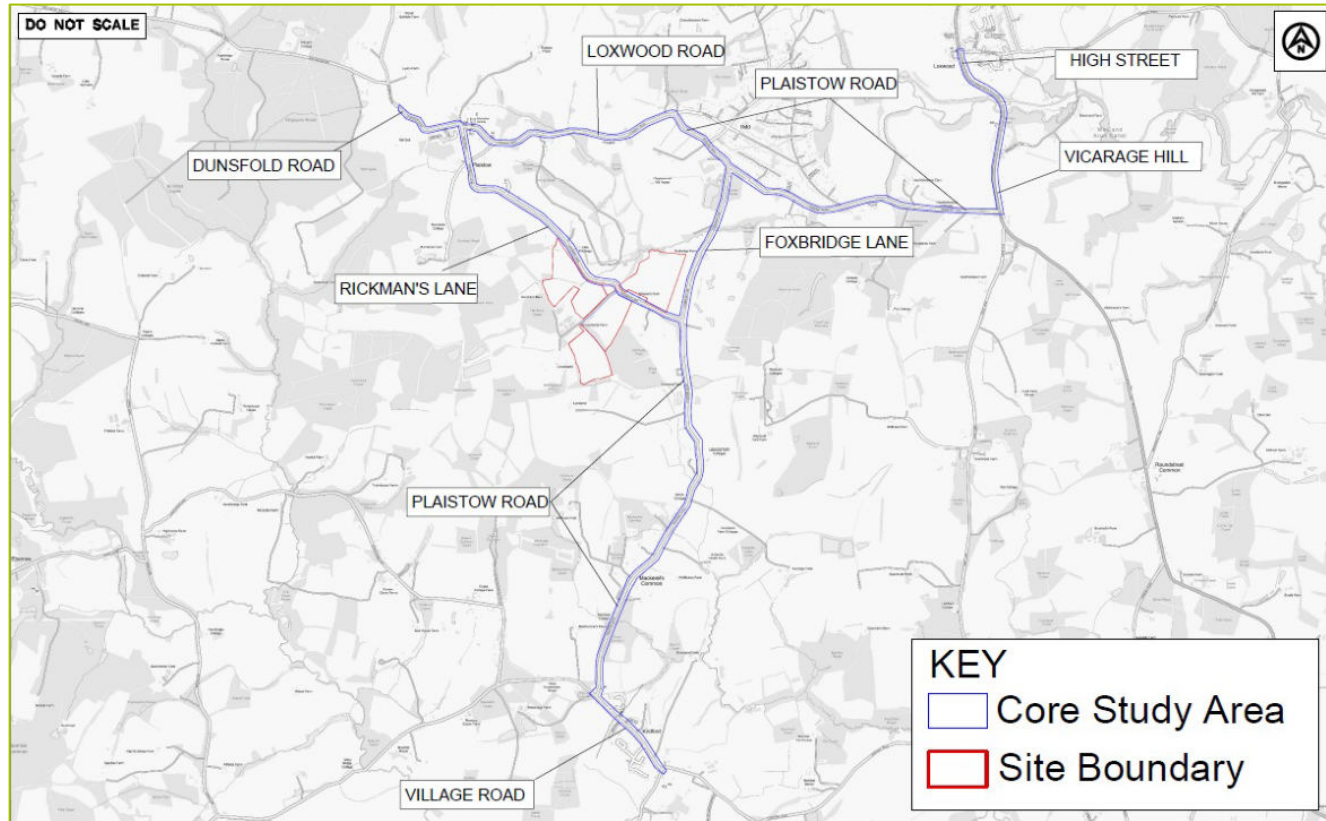
Rickman's Green Village

Proposed approach to:

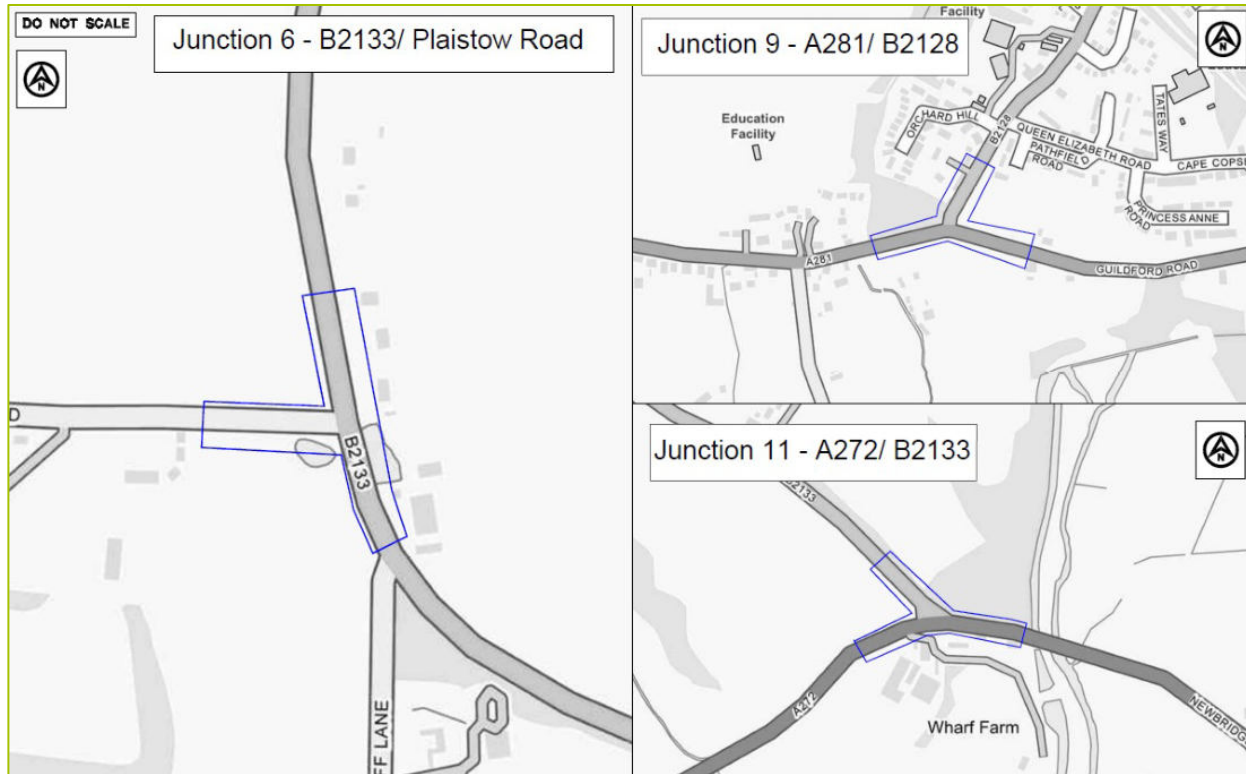
- “Decide & Provide” to estimate traffic levels
- Consider the operational assessment of the development on every junction with 30 new trips
- Give road safety overt consideration using Safe System principles and an evidence-led approach



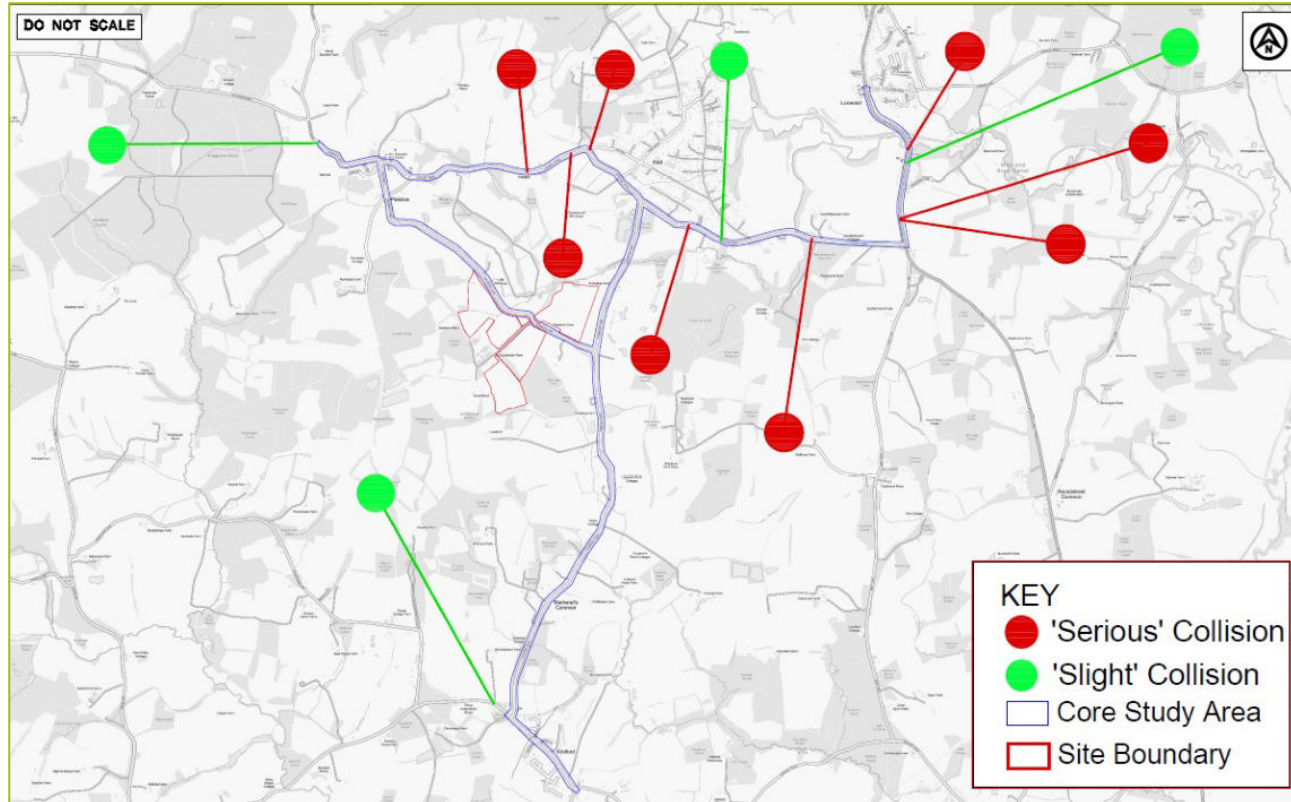
Road Safety Methodology – Core Study Area



Off Site Junctions – Identified Capacity Issues



Retrospective Crash Analysis



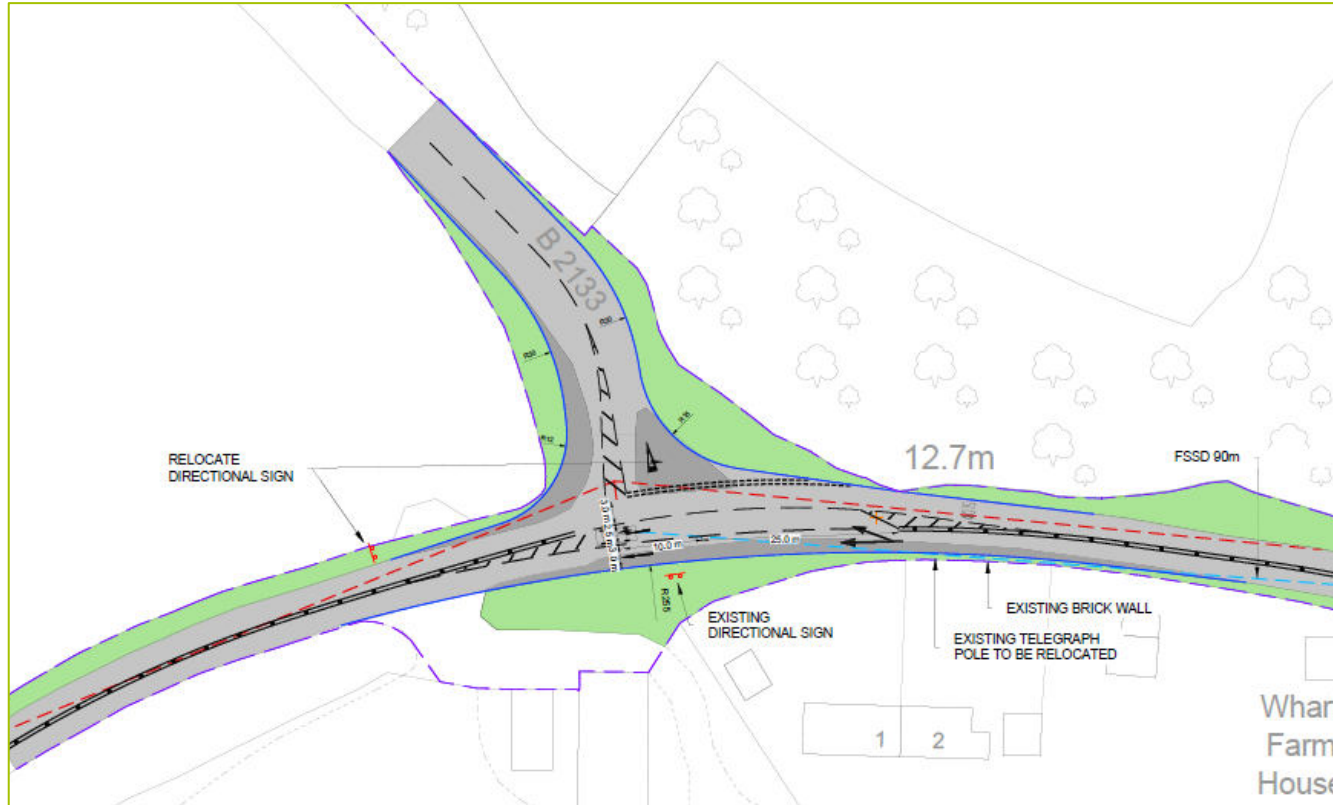
SR4D – Baseline Assessment



Quantitative Assessment – SR4D Baseline

	Vehicle Occupants		Motorcyclists		Pedestrians		Bicyclists	
	Star Rating	'Total' Score	Star Rating	'Total' Score	Star Rating	'Total' Score	Star Rating	'Total' Score
Junction 6 – B2133 Vicarage Hill/ Plaistow Road								
Section 1	2	18.208	1	22.628	1	106.302	1	106.233
Section 2	1	126.302	1	156.779	1	284.597	1	240.068
Section 3	1	26.507	1	29.467	4	0.421	1	84.314
Junction 9 – A281 Guildford Road/ B2128 Church Street								
Section 1	4	4.510	3	5.138	3	37.947	3	26.900
Section 2	2	31.163	1	41.016	1	172.265	1	115.294
Section 3	2	7.072	2	8.556	4	0.180	2	26.332
Junction 11 – A272 Newbridge Road/ B2133 Newpound								
Section 1	1	109.314	1	164.572	-		1	385.919
Section 2	1	300.586	1	443.600	1	1000.775	1	1021.043
Section 3	1	161.284	1	196.665	-	-	1	252.3447

Set Out and Test Proposed Improvements



SR4D – Assess with the Development and Mitigation

	Vehicle Occupants		Motorcyclists		Pedestrians		Bicyclists	
	Star Rating	'Total' Score	Star Rating	'Total' Score	Star Rating	'Total' Score	Star Rating	'Total' Score
Junction 6 – B2133 Vicarage Hill/ Plaistow Road								
Section 1	2	18.208	1	22.628	1	106.301	1	106.233
Section 2	1	126.302	1	156.779	1	284.597	1	240.068
Section 3	1	26.507	1	29.467	4	0.421	1	84.314
Junction 9 – A281 Guildford Road/ B2128 Church Street								
Section 1	4	4.207	4	4.675	3	30.654	3	21.727
Section 2	2	20.069	2	26.398	1	112.164	2	75.332
Section 3	2	5.924	2	7.245	4	0.156	2	21.944
Junction 11 – A272 Newbridge Road/ B2133 Newpound								
Section 1	1	109.314	1	164.572	-		1	385.919
Section 2	1	271.947	1	410.955	1	896.291	1	883.283
Section 3	1	33.482	1	36.912	-	-	1	88.623

Core Study Area - Baseline



Core Study Area - Forecast



Core Study Area – SRS Baseline



Core Study Area - Forecast



Transport Assessment



Retrospective crash analysis – identify trends and the means by which the development could address them ***appropriately and proportionately to the scale of proposed development***



Identify a study area based on where the development could foreseeably affect with respect to walking, cycling, public transport and horse-riding use



Consider more distant locations where highways improvements are needed as mitigation



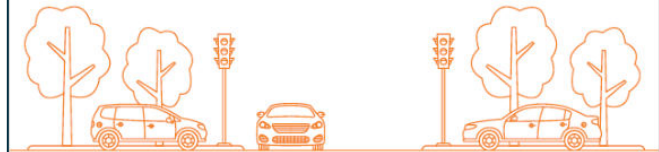
Identify changes objectively. Improvements and worsening of road safety impacts could be considered in terms of ***proportionality***.

Environmental Impact Assessment

- Identify the study area using historic crash data.
- Undertake evidence-led, objective modelling techniques to establish a baseline for road safety. This analysis can be carried out using tools such as the iRAP Star Ratings protocols or similar
- Assess the effects of additional development traffic and any changes to the road for all users across the whole width of the highway corridor.
- **The final impact assessment should calculate changes in levels of the roads' intrinsic safety and the estimated annual reduction in FSIs.** The final impact assessment should be based on the proportionate changes in fatal and serious injuries and the proportionate change in roadside hazards

Institute of Environmental Management
and Assessment (IEMA) Guidelines:

Environmental Assessment of Traffic and Movement



July 2023

EIA Approach

Significance

		Annual FSI Reduction						Annual FSI Increase					
		>150%	150% – 100%	99% - 80%	79% - 20%	10% - 19%	10% - 10%-	10% - 19%	79% - 20%	99% - 80%	150 – 100%	>150%	
Roadside Hazards (% Change in Average)	> 100%	Very High	Very High	High	Medium	Medium	Low	Medium	Medium	High	Very High	Very High	
	65 – 100%	Very High	High	Medium	Medium	Low	Low	Low	Medium	Medium	High	Very High	
	15% – 64%	High	Medium	Medium	Low	Negligible			Low	Medium	Medium	High	
	< 15%	Medium	Medium	Low	Low	Negligible			Low	Low	Medium	Medium	

Sensitivity

Sensitivity	Definition
Very High to High	High concentrations of sensitive receptors (e.g. hospitals, schools, areas with high tourist footfall etc.) and limited separation provided by the highway environment.
Medium	A low concentration of sensitive receptors (e.g. residential dwellings, pedestrian desire lines, etc.) and limited separation from traffic provided by the highway environment.
Low	Few sensitive receptors and / or highway environment can accommodate changes in volumes of traffic.
Very Low	Links that fall below EATaM Rule 1 and 2 screening thresholds.

* High and Very High sensitivity links are considered to be 'specifically sensitive areas' for the purpose of EATaM Rule 2

Magnitude

		Rate of Change on Road Safety Risk			
		Very High	High	Medium	Low
Link Sensitivity	High	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Minor
	Low	Moderate	Minor	Minor	Negligible

	Vehicle Occupants		Motorcyclists		Pedestrians		Bicyclists	
	% Change	'Total' Score	% Change	'Total' Score	% Change	'Total' Score	% Change	'Total' Score
Junction 11 – A272 Newbridge Road/ B2133 Newpound								
Section 1	0%	0	0%	0	NA	0	0%	0
Section 2	10%	-28.6387	7%	-32.6453	10%	-104.484	13%	-137.76
Section 3	79%	-127.802	81%	-159.752	NA	-	65%	-163.721
Average Change	30%		30%		5%		26%	
Combined Roadside Hazard Score				23%				

FSI Outcomes

Modelled Link/ Junction Section	Scenario	Vehicle Users	Motorcyclists	Pedestrians	Bicyclists	Total	% Change
Junction 11 A272	Baseline	0.1	0.1	0.1	0.1	0.5	25%
	With Development	0.1	0.1	0.1	0.1	0.4	
Junction 11 B2113	Baseline	0.1	0.1	0.0	0.1	0.3	
	With Development	0.1	0.1	0.0	0.1	0.2	

EIA Approach

Significance

		Annual FSI Reduction						Annual FSI Increase					
		>150%	150% – 100%	99% - 80%	79% - 20%	10% - 19%	10% - 10%-	10% - 19%	79% - 20%	99% - 80%	150 – 100%	>150%	
Roadside Hazards (% Change in Average)	> 100%	Very High	Very High	High	Medium	Medium	Low	Medium	Medium	High	Very High	Very High	
	65 – 100%	Very High	High	Medium	Medium	Low	Low	Low	Medium	Medium	High	Very High	
	15% – 64%	High	Medium	Medium	Low	Negligible			Low	Medium	Medium	High	
	< 15%	Medium	Medium	Low	Low	Negligible			Low	Low	Medium	Medium	

Magnitude of Road Safety Impact

Link/ Junction	Link Description	Sensitivity	Magnitude of Road Safety Impact
1 and 2	Rickman's Lane	Medium	Minor Beneficial
3	Plaistow Road Kirdford	Low	Negligible
4	Foxbridge Lane	Low	Minor Beneficial
7	Plaistow Road Ifold	Medium	Negligible
8	Vicarage Hill	Low	Negligible
Junction 6	-	Low	Negligible
Junction 9	-	Medium	Minor Beneficial
Junction 11	-	Low	Negligible

Thoughts and Next Steps

- IEMA guidance is an opportunity for major step change in road safety considerations
- Methodology is labour intensive and requires finessing
- Major development which might be considering impacts on every link in a >200km network, needs to have a way of narrowing down the field of interest
- More work is needed to establish methodological approaches for smaller developments
- Overall, more capacity building is needed in the transport planning sector for this to gain traction.

Contact



For a copy of the Guidance on Environmental Assessment of Traffic and Movement or advice on implementation, please email

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