

NRA Current Developments

NRA HD 28

Management of Skid Resistance



Pavement Management – What are we doing

- Managing the Network in terms of its overall Pavement performance in terms of IRI, LPV3, Rut Depth, and Cracking
- Managing the Network in terms of its Skidding Resistance in terms of its Coefficient of SCRIM

Management of Skid Resistance - Previously

- An informal approach was taken to the Management of Skid Resistance
- Categories
 - 0 to 10% Sr values < 40 **Green**
 - 10 to 20% Sr values < 40 **Yellow**
 - 20 to 50% Sr values < 40 **Blue**
 - 50 to 100% Sr values < 40 **Red**
- Funding – NP & NS Annual Resurfacing

NRA HD28/11

- Volume 7: Pavement Design and Maintenance
- First Maintenance Standard to be adopted in Ireland from UK DMRB Vol. 7
- Title: Management of Skid Resistance

Philosophy

- Provision of appropriate levels of skid resistance treated primarily as an asset management issue rather than road safety engineering
- Standard does not address identification of all locations where road safety engineering measures could help to reduce accidents

Broad Principles

- Site categories with higher risk of accident should have higher Investigatory Levels
- Low traffic roads have lower Investigatory Levels than high traffic roads
- Initially, set Investigatory Levels for the network based on site category type and traffic level
- Review ILs at least every 3 years

Currently

- The entire National Road Network is Surveyed in one direction Annually and data processed
- The entire National Road Network has been categorised and all 16,000 “event” locations have been identified and recorded
- IL levels have been assigned to each site category.

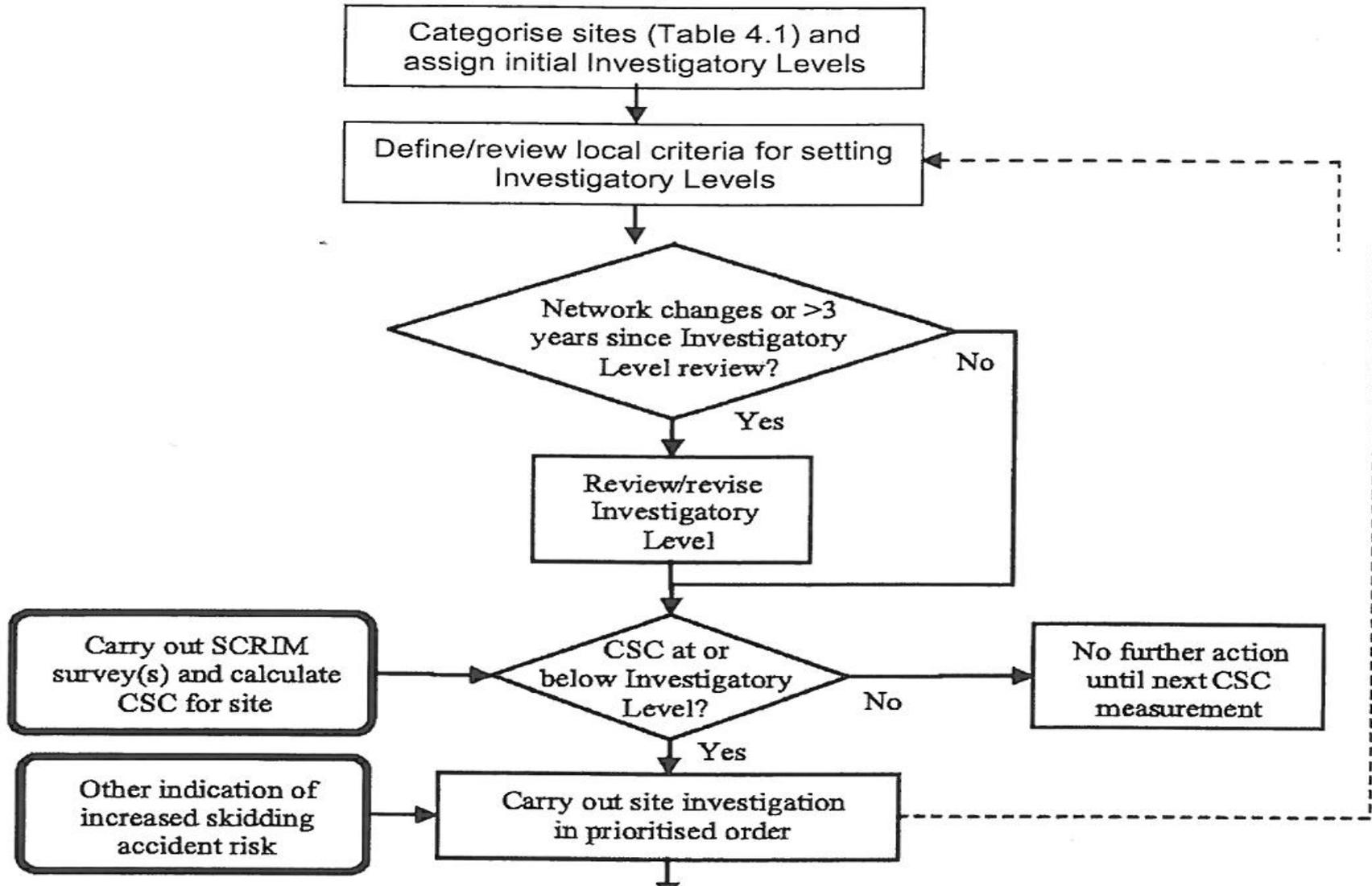
Site Categories and IL – HD28/11

Site category and definition		Investigatory Level at 50km/h							
		0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65
A	Motorway								
B	Dual carriageway non-event								
C	Single carriageway non-event								
G1	Gradient 5-10% longer than 50m								
G2	Gradient >10% longer than 50m								
K	Approaches to traffic signals. pedestrian crossings								
Q	Approaches to and across major and minor junctions,								
R	Roundabout								
S1	Bend radius <250m – dual carriageway								
S2	Bend radius <250m – single carriageway								

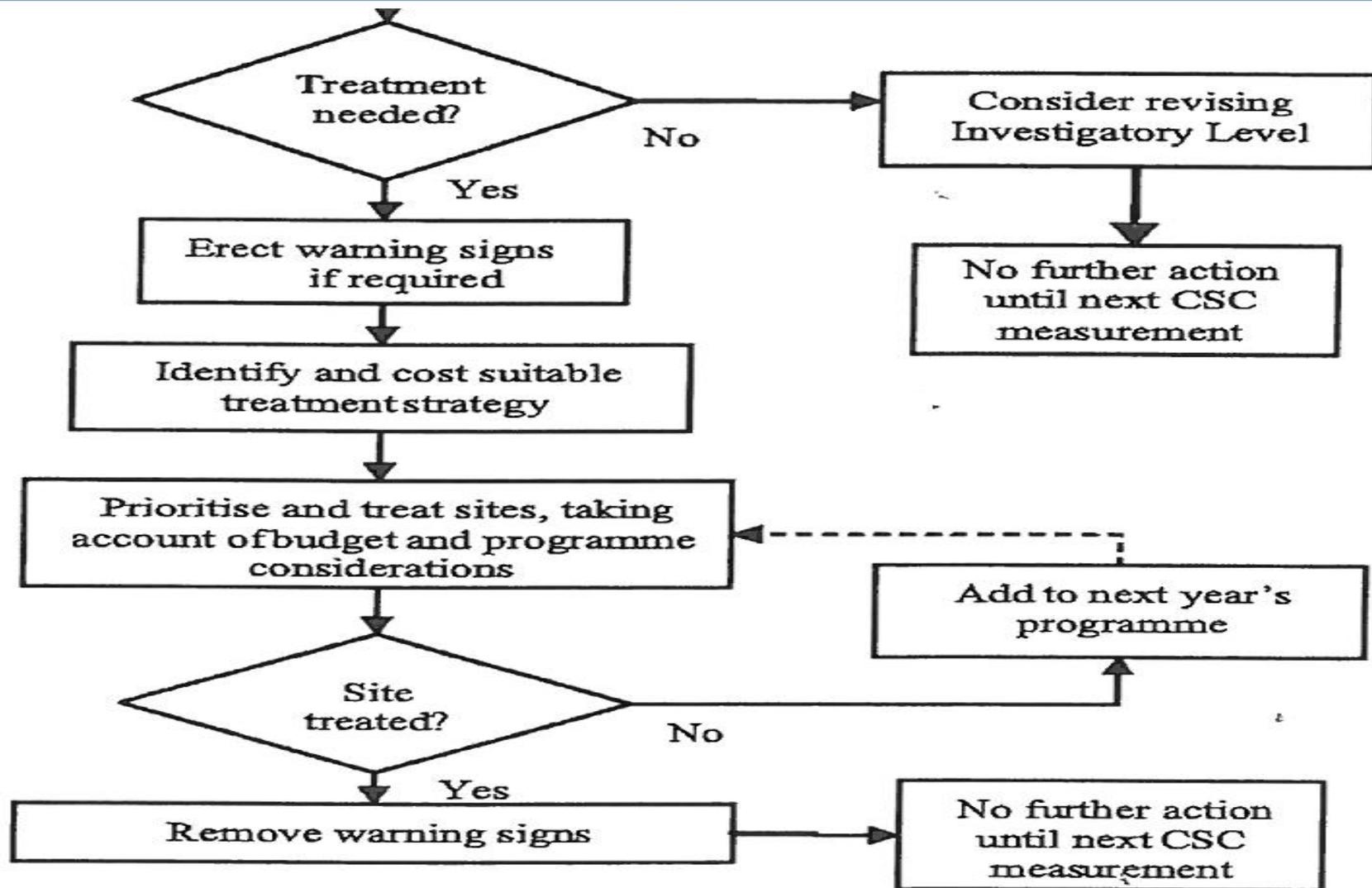


Traffic > 250 commercial vehicles / lane/ per day
 Traffic < 250 commercial vehicles/lane/ per day

Procedure



Procedure



Very Important Warning!

- Investigatory Levels are set solely to trigger Investigations at the locations identified
- They are **NOT** an indication of inadequate skid resistance
- They are **NOT** Intervention Levels, requiring immediate intervention and improvement, and there are no Intervention Levels defined under HD28/11

Investigatory Levels (IL)

- Measured value above IL, no investigation required
- Measured value below IL, investigate to determine if:
 - Surface treatment is required to reduce risk of skidding accidents in wet conditions
 - Some other form of action is required
 - Site should be kept under review

Desk Top Study

- Site Location
- Pavement Condition Data
- Collision Data

HD 28/11 Desk Top Study / Site Data			Survey Year	
Compiler		Source (HD28/11 :2.6 & 2.7)		Date
	SCRIM Survey	Collision Investigation	Other (state)	
County	Route	Site ID	Location	
Site Location and Use (HD28/11 A4.14)				
What is the Event type: <i>Provide factual information from SCRIM Survey and analysis</i>				
Note Critical Event Category (if multiple) and IL: <i>Provide factual information from SCRIM Survey and analysis</i>				
Pavement Condition Data (HD28/11 A4.15)				
Skid Resistance and Texture Depth: <i>What is the range of CSC on the site and over what length? Information to be provided from SCRIM Survey and analysis.</i>				
Other Aspects of Pavement Condition: <i>Provide data from Annual Network Survey.</i>				
Collision Data if applicable should be appended (Refer to Annex 5)				

Site Observations

- Visual Assessment
- Road Users
- Road Layout
- Markings, Signs and Visibility
- Additional Information

Site Observations	
Date:	Name: Method:
Weather	Road Conditions:
Visual Assessment (HD28/11 A4.18)	
Type and Condition of Surfacing	
Any inconsistencies with survey data	
Presence of debris or other contamination	
Local defects (potholes, fatting-up etc.)	
Any evidence of ponding.	
Road Users (HD28/11 A4.19)	
Volume and type of traffic	
Traffic speeds in relation to road layout	
Type of manoeuvres and consequences of driver error	

Recommendation

- Treatment
- Other Measures
- Additional Routine Maintenance
- No Treatment / No Further Action
- Review of Investigatory Levels

Recommendation (HD28/11 A4.8 to 13)	Referenced from 2.6 CSC	Referenced from 2.7 Collision Data	Other (State)
Treatment (A4.9)			
Other Measures (A4.10 & 5.2)			
Additional Routine Maintenance (A4.11)			
No Treatment / No Further Action (A4.12)			
Review of Investigatory Levels (A4.13)			
Stable skid resistance collision patterns?			
Potential High Risk Site / constrained mitigation? (ref 4.8)			
Recommendation			
Print Name:	Signature:	Date	
Approval			

After Site Investigation

- **Targeted** use of signs
- Warning signs only erected **if** a treatment to improve skid resistance is recommended
- Warning signs removed as soon as no longer required



Summary

- Management of Skid Resistance of National Road network from Asset Management viewpoint
- Standardised Equipment
- Investigatory Levels based on Site Categories
- Targeted Site Investigations
- Prioritised treatments based on accident saving and cost-effectiveness



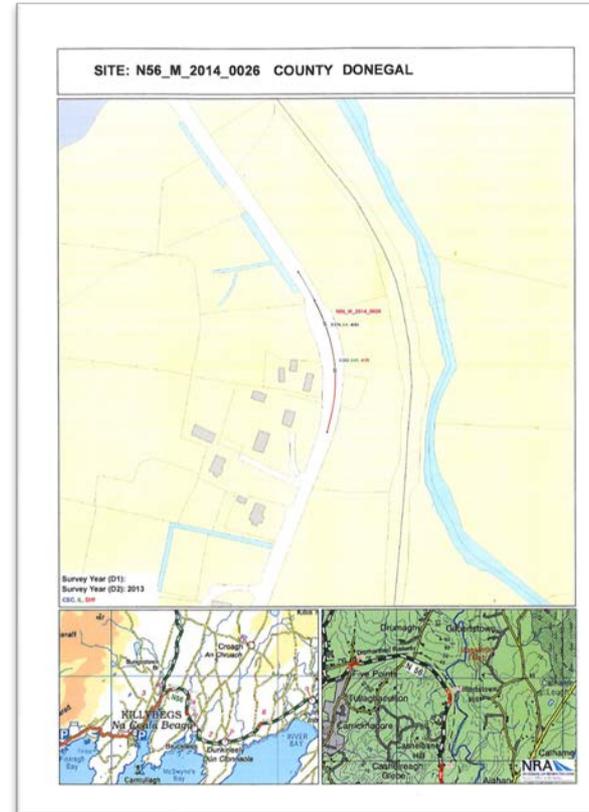
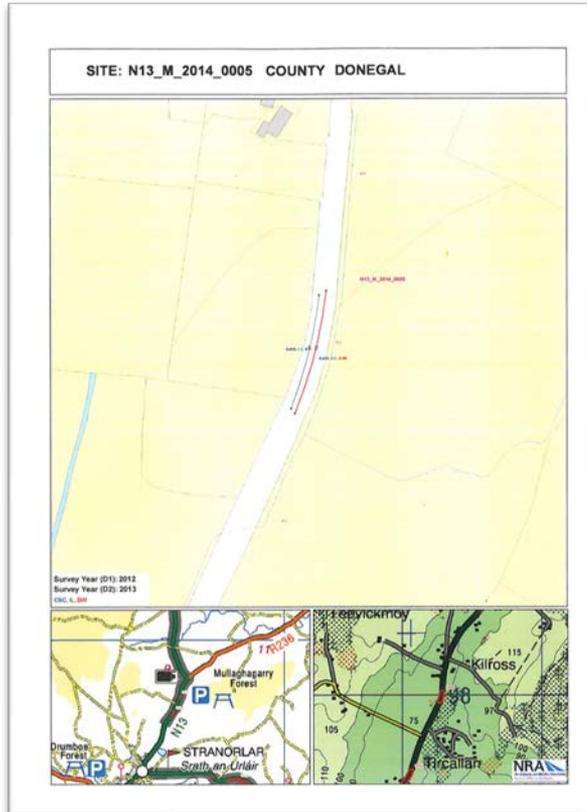




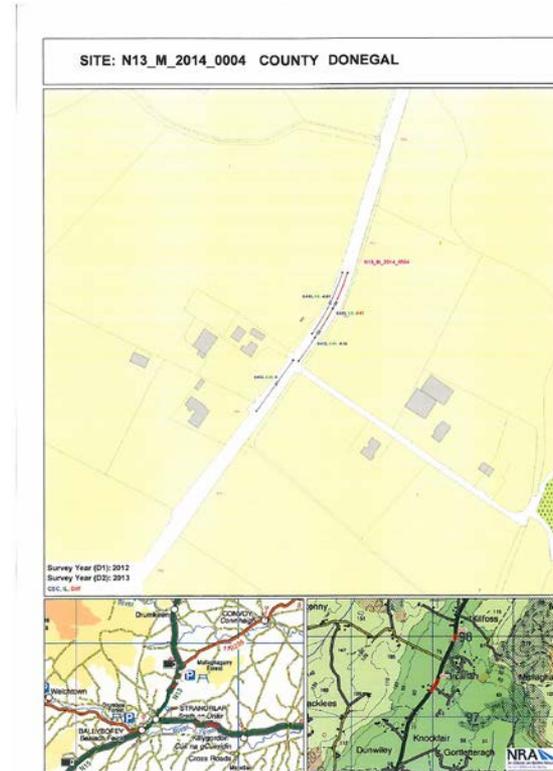
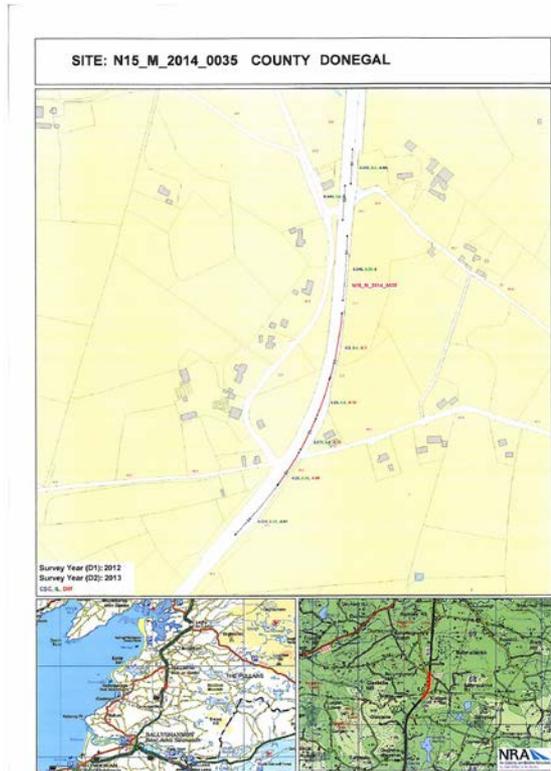




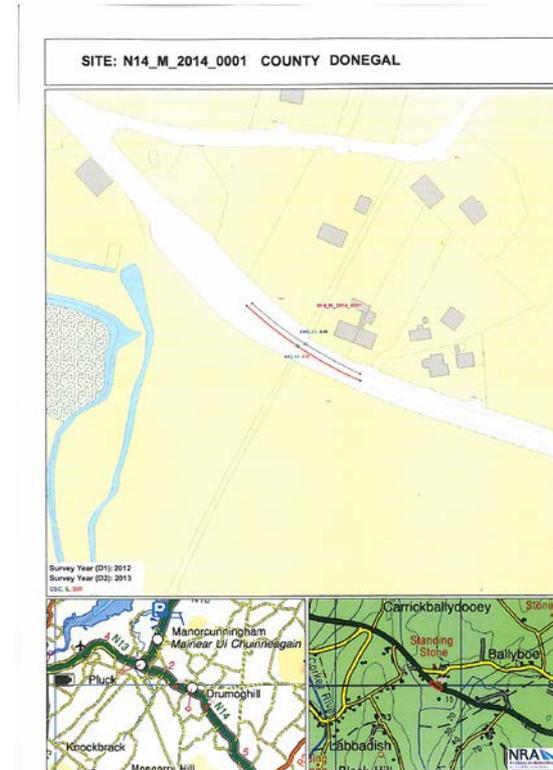
Some Examples



Some Examples



Some Examples



The End

Thank You