



# NRA HD 16

## Temporary Safety Measures

### Inspections

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*National Roads Authority - Standards Section*  
*Training for New Developments*  
*April 2013*



# What is NRA HD 16

- Temporary Safety Measures Inspections
- In other words - Traffic Management Inspections by the Road Authority
- Deals with Safety at Road Works for primarily road users and also road workers.



# Why NRA HD 16?

- EU Road Infrastructure Safety Management Directive 2008/96/EC (S.I. No. 472/2011) requires that an inspection regime be implemented by Member States.
- This Directive applies to roads which are part of the trans-European road network (TERN).
- In Ireland Temporary Safety Measures Inspections are required on all National Roads

# Current Guidance

- Best practice on implementation of traffic management measures included in:
- Chapter 8 of the Traffic Signs Manual, and,
- Guidance For The Control And Management Of Traffic At Road Works
- (aka the Ashbourne document)

# Who does the Inspections?

Who undertakes the inspection	Temporary Safety Measures
National Roads Authority	Projects procured by the National Roads Authority
Local Authority	Projects sanctioned and/or procured by the Local Authority
Statutory undertaker/road operator (e.g. PPP)	Projects under their management.

# Role of the Road Authority (Local Authority)

- Periodic inspections of temporary safety measures at roadwork sites are carried out on all projects sanctioned and/or procured by them, to confirm that the Requirements are being implemented

# Frequency of Inspections

<b>Duration of Road Works</b>	<b>% of sites to be inspected per annum</b>	<b>Frequency of Inspection</b>
Exceeding 1 year in duration	100% of sites to be inspected	Quarterly
1 month to 1 year in duration	30% to 40% of sites to be inspected	Twice per year
Greater than 1 day, less than 1 month	10% to 20% of sites to be inspected	Single Inspection
1 day in duration	Random	Single Inspection

# Role of Local Authority and Utility Companies

- Local Authorities should advise any person or body undertaking roadworks on their roads (eg. Road Opening Licensee), that this Directive is now in place
- Utilities to inspect their own sites in accordance with the Guidelines,



# Role of the Authority (NRA)

- *Prepare Web-based database to track all roadworks on National Roads*
- *Carry out random inspections of Local Authority and statutory undertaker's Temporary Safety Measures inspection systems.* 
- *Inspect Works Procured directly by NRA*

# How to Notify the NRA?

- Web-based database
- Registered by Project Manager in Local Authority
- Notification to be done prior to commencement of construction



http://nraschemes.1080/maps/Account/LogOn?ReturnUrl=%2fmaps%2f



NRA Portal ... x

nra.ie



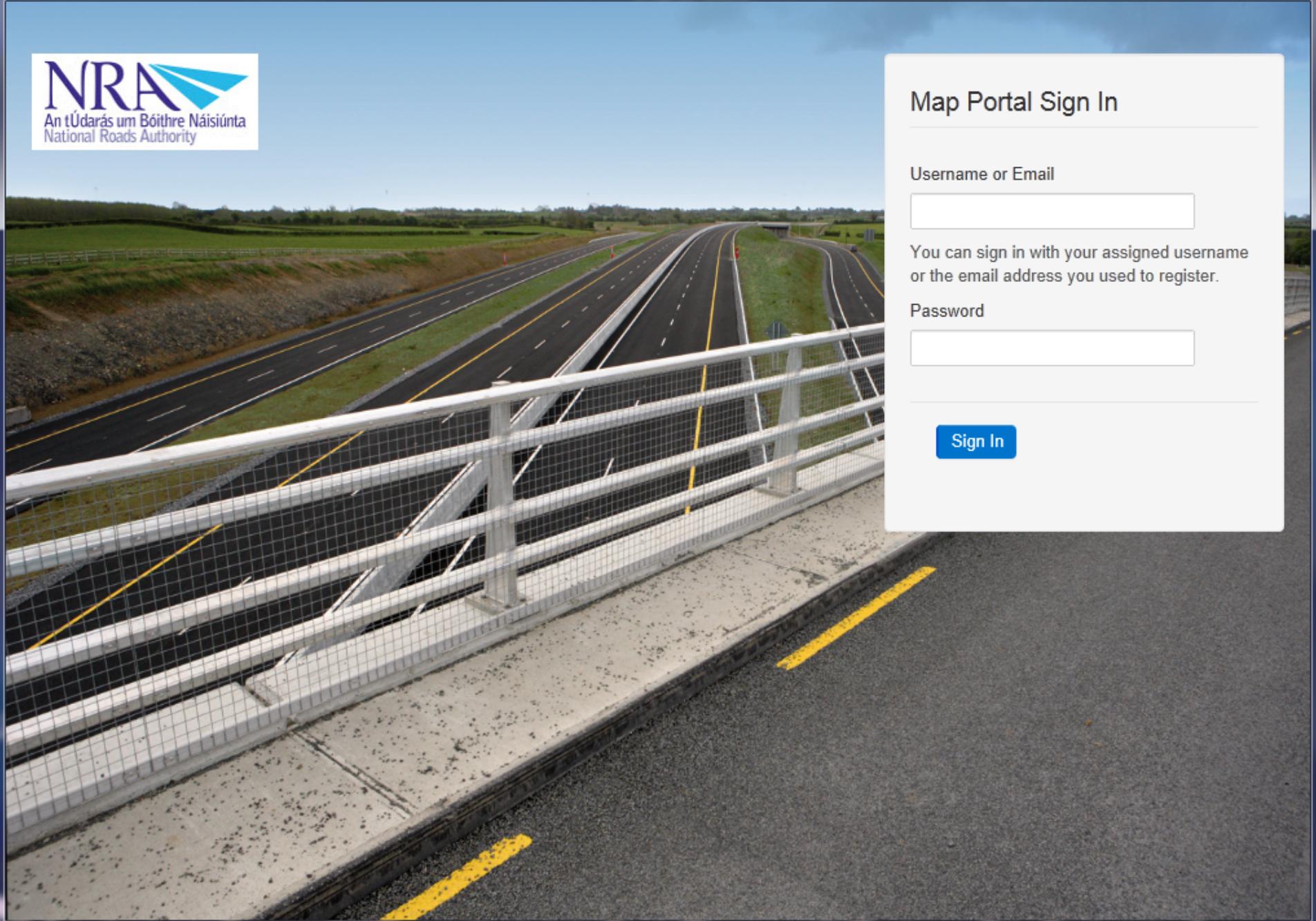
## Map Portal Sign In

Username or Email

You can sign in with your assigned username or the email address you used to register.

Password

Sign In



Map Portal Home Map Worklist Sign Out

ITM 704576.67513, 706975.2373 Naas  
INGR 304585.29499, 206977.31249  
LATLON -6.43829, 53.10309  
BASE MAPPING +716706.92435, 7002090.04413  
Droichead Nua  
Kildare (EPSC:500913)

Create New Location

Type

Linear  Point  Disabled

Select the type of feature you wish to create or choose Disabled to turn off the tool

Controls

Linear Feature: Click to identify the location of each point on the feature. Double click to complete feature creation

Description

Record Type

Not Selected

10 km  
5 mi

Ballinabrannagh  
Ardattin  
Mvshall

Naas  
Blessington  
Valleymount (Togher)  
Stratford  
Baltinaglass  
Kiltegan  
Tullow  
Ardattin  
Mvshall

Glencree  
Kippure  
War Hill  
Mullaghcleevaun  
Shramore  
Laragh (Glendalough)  
Rathdrum  
Woodenbridge  
Arklow

Pollaphuca Reservoir  
Lugnaquilla Mountain 926 m (3038 ft)

Wicklow Mountains

Bray  
Greystones  
Kilcoole  
Ashford  
Wicklow

Roads: R410, R417, R418, R430, R448, R472, R725, R751, R752, R755, R756, R761, R767, R772, R773, M11, M9, N78, N81, N91, M7, M1

704576.67513, 706975.2373

Map of your Region

Map Portal Home Map Worklist Sign Out

ITM 729294.05874, 696254.63104  
INGR 329304.71858, 196249.72389  
LATLON -6.07367, 53.00138  
BASE MAPPING -676118.32159, 6983253.88371  
( EPSG:900913 )

Create Saved Tools

### Create New Location

Type

Linear  Point  Disabled

Select the type of feature you wish to create or choose Disabled to turn off the tool.

Controls

Feature Created: Click the Blue Button to zoom to the feature extents.

Description

Line Markings

Record Type

Planned Works

The map displays a network of roads including Milltown Lane, Tighe Avenue, Main Street, Charvey Lane, Woodside, Merrymeeing, Carrig Court, and Seaview Heights. A prominent orange line marking is drawn along a section of the M11 road. The Rathnew Industrial Estate is highlighted in light blue. Road markers for R761, R750, R752, and R772 are visible. A scale bar at the bottom left indicates 200 meters and 1000 feet. The coordinates 729294.05874, 696254.63104 are shown at the bottom right of the map area.

# Identify Planned Works Location

Map Portal Home Map Worklist Sign Out

http://nrascemes.1080/maps/Home/Map NRA Map Portal

ITM 723410.33497, 672464.02265  
INGR 323420.51501, 172456.94636  
LATLON -6.17031, 52.78906  
BASEMAPPING -686875.75132, 6944074.65665  
( EPSG:900913 )

Create Saved Tools

### Create New Location

Type

Linear  Point  Disabled

Select the type of feature you wish to create or choose Disabled to turn off the tool.

Controls

Feature Created: Click the Blue Button to zoom to the feature extents.

Description

Record Type

Not Selected

200 m  
1000 ft

723410.33497, 672464.02265

**Base Layer**

- Bing Roads
- Bing Hybrid
- Bing Aerial
- OpenStreetMap

**Overlays**

- User Features
- Your Area
- Collisions 2008
- Collisions 2009
- Collisions 2010
- Collision Analysis
- Saved Locations
- Live Works
- National Routes
- Sinuosity

# Choice of Map/Aerial Photograph

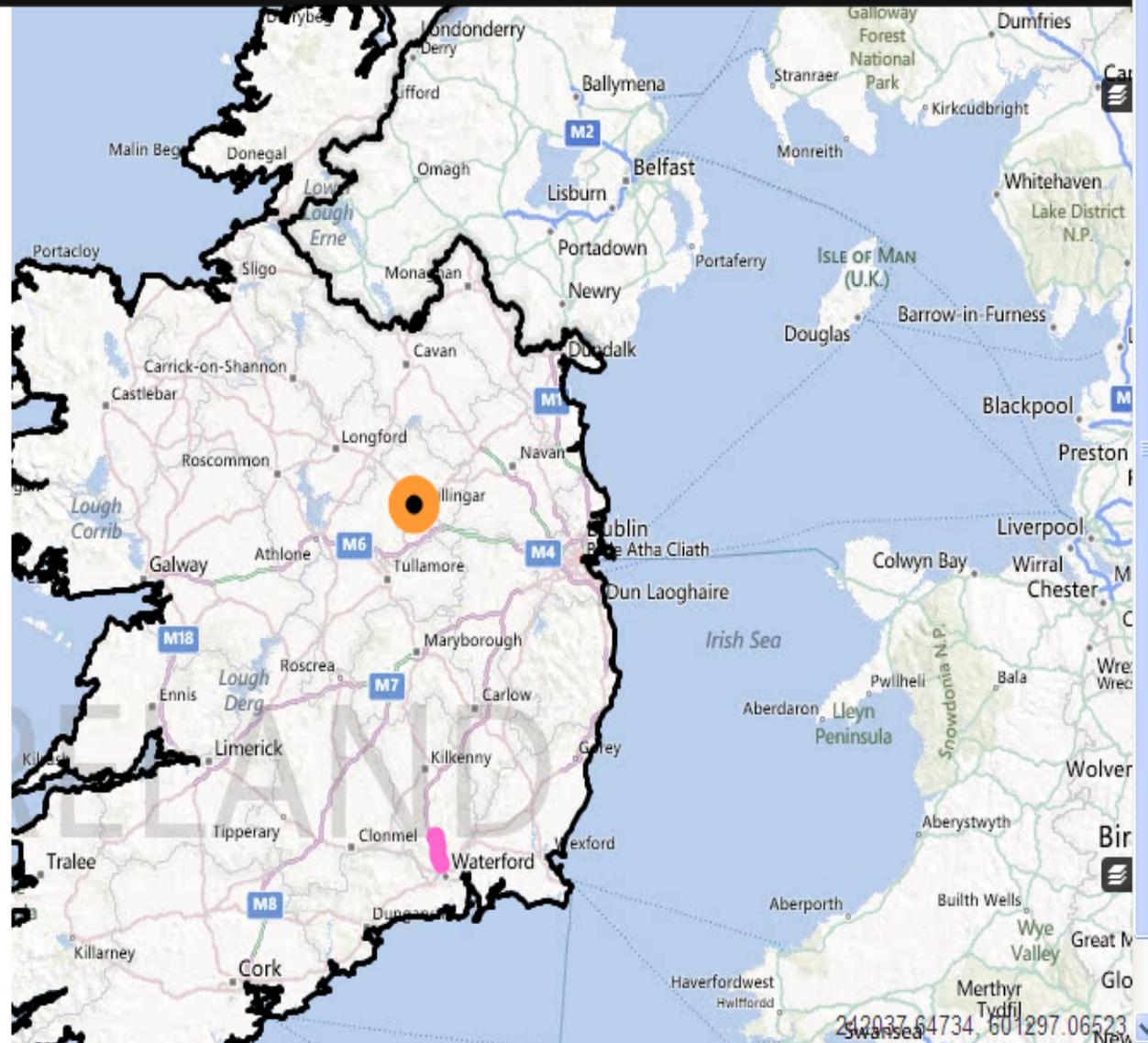
Create

Saved



### Saved Works

Name	Type
✘ Relining Section of Road	Planned Works ▶
✘ Trial Works BS	Planned Works ▶
✘ Test Adb	Planned Works ▶
✘ Test	Planned Works ▶
✘ Test 2 AdB	Planned Works ▶



242037.64734, 601297.06523

Create a New Works Record

Works Description M6 Relining of Motorway

Direction Description Enfield to Kilcock

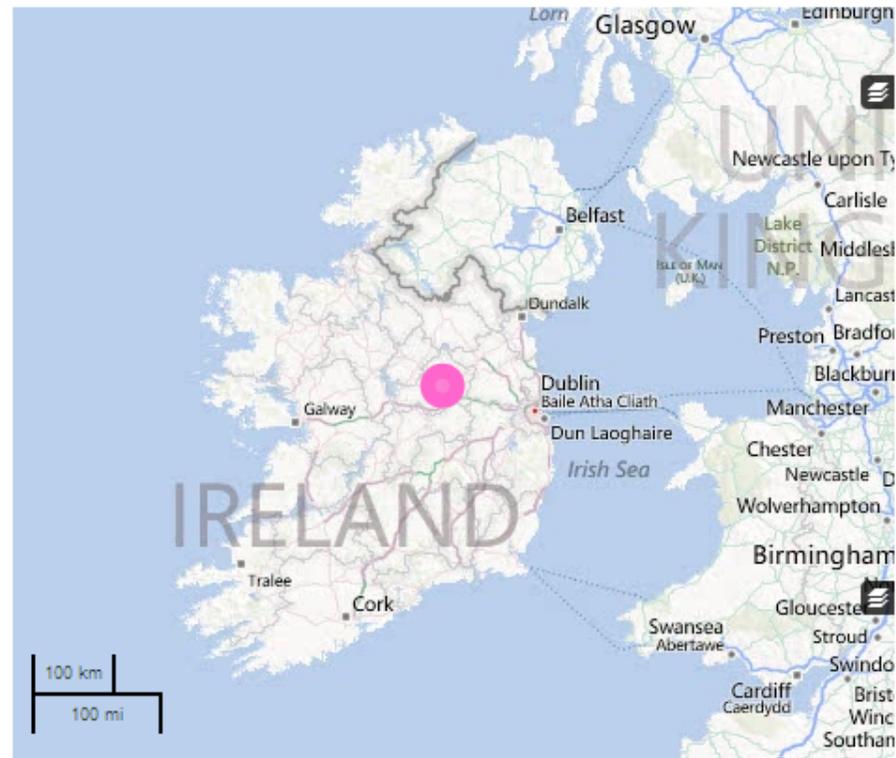
If Works will be carried out on only one side of the road, indicate the direction by naming the Next town along the route or state Both to indicate both directions.

Applicant Westmeath County Council

Start Date 08-04-2013

Finish Date 23-04-2013

Enter the Date the Works are Scheduled to be Completed. If not known, Enter an Estimated Date. The Finish Date can be



ITM
INGR
LATLON
BASE MAPPING

and will auto-populate the contact details below.

Contractor Contact Contractor 10

Name, Email and Phone Number of Contractor's Nominated contact.

Contractor Email swhelan@dataworks.ie

Contractor Phone 051878555

PSCS Contact Name p|

- PSDP Contact Name PSCS 1
- PSCS 10
- PSCS 11
- PSCS 12
- PSCS 13
- PSCS 14
- PSCS 15
- PSCS 16

HSA AF1 Submitted?  Been Submitted Authority

- Static
- Mobile
- Lane Closure
- Diversion

# Worklist

Works in Progress							
#	Route	Description	Feature	Contractor	Start/Finish		
191	Placeholder While Testing	M9 test AdB	LineString	Contractor 11	28/03/2013 - 17/04/2013	Update	View
212	Placeholder While Testing	M6 Relining of Motorway	Point	Contractor 10	08/04/2013 - 23/04/2013	Update	View

# Worklist

- Map
- Worklist
- All Works

## Works in Progress

Works Currently In Progress

#	Route	Description	Feature	Contractor	Start/Finish	
191	Placeholder While Testing	M9 test AdB	LineString	Contractor 11	28/03/2013 - 17/04/2013	<a href="#">View</a>
212	Placeholder While Testing	M6 Relining of Motorway	Point	Contractor 10	08/04/2013 - 23/04/2013	<a href="#">View</a>
198	Placeholder While Testing	TestbyFirefox	LineString	Contractor 10	25/03/2013 - 05/04/2013	<a href="#">View</a>



http://www.nrtraffic.ie/



NRA Portal Lo... NRA Traffic x



# NRA Traffic

Last Updated: Today 11:54

HOME > TRAFFIC MAP > GREATER DUBLIN

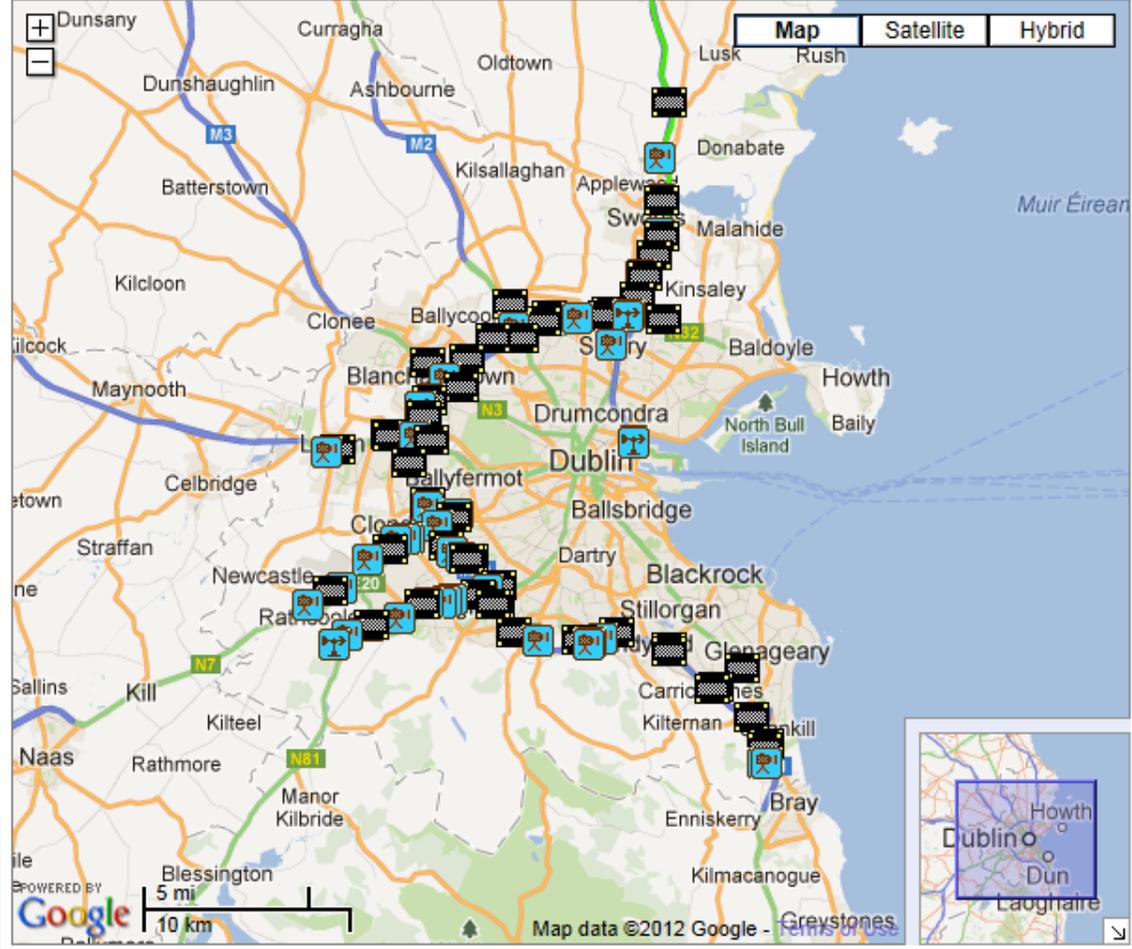
- TRAFFIC MAP
- TRAFFIC CAMS
- ROAD WEATHER
- TRAVEL TIMES
- MESSAGE SIGNS
- EMAIL SMS ALERTS
- TRAFFIC INFO LINKS
- ABOUT PROJECT

**Travel Times (Minutes):**

<b>29</b>	M50(N) J17 (M11) - J3 M1/N32/DPT
<b>35</b>	M50(S) J3 (M1/N32) - J17 (M11)
<b>6</b>	M1(N) J1 (M50) - J4 Donabate
<b>12</b>	M1(S) J5 Balbriggan South - J1 (M50)

- Status Legend:**
- CCTV Camera
  - Message Sign
  - Weather Station
  - Incident
  - Roadworks
  - Queue
  - Bad Weather

Map Region: Greater Dublin



- Map Layers:**
- Current Events
  - Road Congestion
  - Message Signs
  - Planned Events
  - Traffic Cameras
  - Weather Stations



# Example of Inspection form used by NRA



## TEMPORARY SAFETY MEASURES (TSM) INSPECTION SYSTEM REPORT

ROADWORKS LOCATION COORDINATES:		ROUTE NUMBER:	ROAD AUTHORITY:
START: Location Plan Attached	END:	100	Roosession Co. Co.
ROADWORKS START DATE:		COMPLETION OF ROADWORKS:	
12/19/2012		12/11/12 (Refer to Roosession Co. Co. website)	
CONTRACTOR (if applicable):	TSM DESIGNER:	ROADWORKS TYPE (Construction / Non-Construction):	
NR	NR	Emergency Works	
PSOP:	PSOP:	ROADWORKS SAFETY OFFICER / COORDINATOR:	
NR	NR	NR	
Contact Details:	Contact Details:	Contact Details:	
NR	NR	NR	

ROADWORKS DESCRIPTION:  
 TM installed on the M6 local to Junction 13 for emergency works. Speed limit 120 Kph on M6 approach, reducing to 100Kph local to Junction 13 (NG). Level 6 Road (Table 6.1.1 Chapter 6).  
 No discussion held with any parties in relation to installed TM. This report relates to site observations only.

Status:	Colour Code:	Details:
Acceptable	G	Safe systems in place and operated appropriately
Improvement Required	Y	Systems or operation of systems requiring improvement
Unacceptable	R	Conditions requiring immediate corrective/improvement action.
Not Reviewed	NR	Item not reviewed during inspection.

TSM	Temporary Safety Measures (TSM) for Roadworks	NR	R	Y	G	Average
TSM 1	Evidence assessed that adequately trained staff are present to design and implement the TSM?	x				
TSM 2	Does the Design conform to the Traffic Signs Manual (DST) and does the TSMs installed conform to the design layout and parameters?	x				
TSM 3	Have all hazards been assessed in the TSM?	x				
TSM 4	Has allowance been made for the delivery and removal of materials, and have these been adequately signed?				x	
TSM 5	Have Cardiac been informed of any traffic lights or stop/go system in use?	x				
TSM 6	Have Cardiac been informed of speed limits being introduced for the duration of the works?	x				
TSM 7	Are all traffic management equipment in good condition & for purpose (as fully understood by the general road user) and in accordance with the Traffic Signs Manual (i.e. size/height, colour, reflectivity)?		x			
TSM 8	Are sign sightlines in accordance with the requirements of the TSM and are sightlines adequate for all other signs (i.e. free from bends, hill dips in the road, parked vehicles, hedges etc)?				x	
TSM 9	Will the site be safe during hours of darkness and adverse weather conditions?			x		
TSM 10	Is the carriageway/footway being kept clear of mud and surplus equipment?				x	
TSM 11	Are materials/plant correctly and safely stored?	x				
TSM 12	Is there safe access/egress to adjacent private premises and local roads/junctions?	x				
TSM 13	Does signing and guarding meet the changing site conditions?	x				
TSM 14	Are traffic control arrangements working at their optimum level to reduce traffic delays?				x	
TSM 15	Are all misloading permanent signs & road markings covered? Have all signs been positioned correctly to eliminate a potential hazard to the general public?				x	
TSM 16	Have the needs of pedestrians and other vulnerable road users (disabled pedestrians, blind, cyclists, horses etc) been addressed in the layout? If existing public routes have been blocked, has suitable alternatives been provided?				x	
TSM 17	Is the Work Area clearly defined to the road user?				x	



**Summary of Inspection:**  
 Approach from Galley:  
 Photo TSM 1 - 1200mm 'Roadworks Ahead' signage with supplementary plate.  
 Photo TSM 2 - 1200mm 'Offside Lane Closed' signage with supplementary plate. TM ahead transfers fast lane to slow lane (fast lane and hard shoulder closed) and then slow lane to fast lane (hard shoulder and slow lane closed) prior to Junction 13.  
 Photo TSM 3 - 1200mm 'Offside Lane Closed' signage with supplementary plate.  
 Photo TSM 4 - 1200mm 'Offside Lane Closed' signage with supplementary plate. Plate colour not in accordance with PoSI (refer to Table 6.2.2 of Chapter 6).  
 Photo TSM 5 - 1200mm 'Offside Lane Closed' signage with supplementary plate.  
 Photo TSM 6 - End of Hard Shoulder supplementary plate. Note 100m distance plate on verge.  
 Photo TSM 7 - Advance warning of hard shoulder closure and commencement of fast lane taper. No lamps to taper. This location is unit. Does not comply with the recommendations of Table 6.3.5, paragraph 6.2.5.6 and paragraph 6.2.5.3 of Chapter 6.  
 Photo TSM 8 - Hard shoulder taper. Cones in taper appear to be approx. 3m o/c. Table 6.3.5 of Chapter 6 recommends 1.5m o/c.

TSM	Temporary Safety Measures (TSM) for Roadworks	N/R	R	O	G	Average
TSM.1	Evidence available that sufficiently trained staff are present to design and implement the TSM?	x				
TSM.2	Does the Design conform to the Traffic Signs Manual (DoT) and does the TSM's installed conform to the design layout and parameters?	x				
TSM.3	Have all hazards been assessed in the TSM?	x				
TSM.4	Has allowance been made for the delivery and removal of materials, and have these been adequately signed?				x	
TSM.5	Have Gardai been informed of any traffic lights or stop/go system in use?	x				
TSM.6	Have Gardai been informed of speed limits being introduced for the duration of the works?	x				
TSM.7	Are all traffic management equipment in good condition/fit for purpose (easily understood by the general road user) and in accordance with the Traffic Signs Manual (i.e. size/height, colour, reflectivity)?		x			
TSM.8	Are sign sightlines in accordance with the requirements of the TSM and are sightlines adequate for all other signs (i.e. free from bends, hill/ dips in the road, parked vehicles, hedges etc)?				x	
TSM.9	Will the site be safe during hours of darkness and adverse weather conditions?			x		
TSM.10	Is the carriageway/footway being kept clear of mud and surplus equipment?				x	
TSM.11	Are materials/plant correctly and safely stored?	x				
TSM.12	Is there safe access/egress to adjacent private premises and local roads/junctions?	x				
TSM.13	Does signing and guarding meet the changing site conditions?	x				
TSM.14	Are traffic control arrangements working at their optimum level to reduce traffic delays?				x	
TSM.15	Are all misleading permanent signs & road markings covered? Have all signs been positioned correctly to eliminate a potential hazard to the general public?				x	
TSM.16	Have the needs of pedestrians and other vulnerable road users (disabled pedestrians, blind, cyclists, horses etc) been addressed in the layout? If existing public routes have been blocked, has suitable alternatives been provided?				x	
TSM.17	Is the Work Area clearly defined to the road user?				x	

Photo TSM.1



Photo TSM.2



Photo TSM.3



Photo TSM.4



Photo TSM.5



Photo TSM.6



#### Summary of Inspection:

##### Approach from Galway :

Photo TSM 1 - 1200mm 'Roadworks Ahead' signage with supplementary plate.

Photo TSM 2 - 1200mm 'Offside Lane Closed' signage with supplementary plate. TM ahead transfers fast lane to slow lane (fast lane and hard shoulder closed) and then slow lane to fast lane (hard shoulder and slow lane closed) prior to Junction 13.

Photo TSM 3 - 1200mm 'Offside Lane Closed' signage with supplementary plate.

Photo TSM 4 - 1200mm 'Offside Lane Closed' signage with supplementary plate. Plate colour not in accordance with P001 (refer to Table 8.2.2 of Chapter 8)

Photo TSM 5 - 1200mm 'Offside Lane Closed' signage with supplementary plate.

Photo TSM 6 - 'End of Hard Shoulder' supplementary plate. Note 100m distance plate on verge.

Photo TSM 7 - Advance warning of hard shoulder closure and commencement of fast lane taper. No lamps to taper. This location is unlit. Does not comply with the recommendations of Table 8.3.5 , paragraph 8.2.5.6 and paragraph 8.2.8.3 of Chapter 8.

Photo TSM 8 - Hard shoulder taper. Cones in taper appear to be approx. 3m c/c. Table 8.3.5 of Chapter 8 recommends 1.5m c/c.



➤ **GOOD** and **BAD**  
Practices

# Bad Practice



- No Reflective markings or signage on truck
- Insufficient cones
- No Safe Zone
- No pre-warning

# Good Practice



- Good Reflective markings on vehicle
- Cones well defined and delineated
- Safe Zone

# Good Practice



- Clear layout

- Reflectors on cones

# Bad Practices



- Conflicting signage
- No Alternative Route indicated
- Sign on non-reflective board

# Bad Practices

Insufficient  
Definition



# Bad Practices



- Old lining not removed

# Bad Practices



- Inadequate signage
- No delineation
- Road markings on new section visible to motorist

# Good Practice



How it should  
be done!!

# Bad Practices



- 100km/h sign not covered in middle of roadwork's
- Advertisement within confines of roadworks

# Good Practice



Fenced parking area created for operatives. Side road left clear from parked vehicles. Common hazard removed.



# Temporary Safety Measures Inspections

**THANK YOU**

**ANY QUESTIONS??**

*National Roads Authority - Standards Section  
Training for New Developments  
April 2013*

ARUP

**NRA**  
An tÚdarás um Bóithre Náisiúnta  
National Roads Authority