



IPAG

Irish Pavement Asset Group

Pavement Asset Management
Guidance
Section 7:
Reinstatements

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Document Information

Title	Pavement Asset Management Guidance, Section 7: Reinstatements
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Description	This section recommends that records should be kept of road reinstatements. It refers specifically to those records required to assist with pavement management. It includes reference to other systems used to store data for the purposes of roadworks control.

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7 Reinstatements

This section recommends that records should be kept of road reinstatements. It refers specifically to those records required to assist with pavement management. It includes reference to other systems used to store data for the purposes of roadworks control.

7.1 The Effect of Reinstatements on Pavements

Roads are routinely subject to excavation of trenches and other openings to accommodate utility apparatus. Poorly executed reinstatement can contribute significantly to the deterioration of the road. Understanding the extent to which reinstatement is affecting pavement condition is therefore an important element of pavement asset management. Maintaining appropriate records of reinstatement can assist with programming of work, identifying long-term funding needs and targeting better management of the reinstatements themselves.

Guidance already exists in relation to the management of reinstatements in the form of the *Guidelines for the Opening, Backfilling and Reinstatement of Trenches in Public Roads* (the 'purple book'). In addition, individual road authorities have also documented their requirements in documents such as: *Directions for the Management and Control of Roadworks in Cork City* (February 2010) and *Directions for the Control & Management of Roadworks in Dublin City* (June 2010). These documents set out how the process of managing reinstatement of trench openings on public roads is undertaken.

The *MapRoad Roadworks Licencing* (MRL) system is being developed by the Local Government Management Agency for the purpose of managing the road-opening license application process. It handles the stages from license application through to the end of the defects liability period. The system is a centrally hosted on-line system and will be accessible to all stakeholders.

This guidance recommends:

1. The information about each opening that should be recorded by the road authority and by the organisation undertaking the reinstatement.
2. How this data, together with other pavement management data, enables reporting of the effect of utility activities upon the condition of the network.

7.2 Reporting the Effect of Utility Openings

Internationally, the effect of utility openings upon the condition of the pavement asset is not routinely assessed or reported. It is, however, widely accepted that the opening-up does have an adverse effect upon the life of pavements and some studies have been launched into determining the effect. An absence of robust geographically-referenced (geo-referenced) data on openings and condition constrains the ability to undertake this analysis routinely.

The opening and excavation of roads to accommodate utility operators' equipment is an ongoing activity and therefore is important the impact of these work are analysed and reported regularly.

The development of a detailed methodology may include the following:

1. Collecting data on those roads that have been opened-up, categorised by the size of the opening. It is possible that this calculation should have a minimum size defined that is not considered likely to have an adverse effect upon condition.
2. Comparison of the condition of these roads in comparison to similar roads in the locality that have not been opened.
3. A suitable timeframe will need to be defined over which this analysis should be undertaken. It should be sufficiently long enough for the damage to the road's structure that may have been caused by the utility works, etc. to become evident.

7.3 Inspections

It is recommended that road authorities carry out inspections of reinstatements at the following times:

Table 7.1

Inspection	Purpose
Before the works	Pre-inspection and photographs.
During the works	To check that the opening is being reinstated with materials that meet the specification, that appropriate compaction is being applied when backfilling and the good construction practices are being followed.
Upon completion	To confirm that the reinstatement has been completed to an appropriate standard.
At end of defects liability period	To confirm that the reinstatement is to an acceptable standard for it to be taken in charge and for the council to take over maintenance of it.

Utility operators may hold records of their own inspections. These may be available via the road authority's licensing system.

7.4 Records

Utility operators and their contractors should carry out their own inspections and should record the same data. This data should be made available to the road authority upon request, in an agreed electronic format.

The following data should be recorded for each opening either by the road authority or the utility operator / their contractors:

Table 7.2: Sample Road Opening Record	
Council name:	e.g. <i>Dublin City Council</i>
Application Number:	e.g. <i>ABC1234</i>
Location Description:	
e.g. <i>Usher's Island, between Watling Street and Bridgefoot Street</i>	
Geo-referenced Co-ordinates	
e.g. start co-ordinates	e.g. finish co-ordinates
Map Attached:	
e.g. <i>✓ (schematic digital layout required showing full extent of the opening, i.e. all road segments opened)</i>	
Purpose of Opening:	
e.g. <i>replacement of gas main, water main, power cable, telecommunications cable</i>	
Applicant:	
e.g. <i>Gas Networks Ireland, ESB Networks, Eircom</i>	
Date Application Approved	e.g. <i>12th December 2012</i>
Roadway:	
Road number	e.g. <i>R148</i>
Road name	e.g. <i>Usher's Island</i>
Road segment(s)	e.g. <i>U123, U124 and U125</i>
Surface material	e.g. <i>hot rolled asphalt</i>
Length of roadway	e.g. <i>152m</i>
Width of roadway	e.g. <i>3.5m</i>
Special treatments	e.g. <i>geo-grids, anti-skid treatments</i>
Photograph	e.g. <i>sufficient to record condition before and after reinstatement</i>
Footway: (if affected):	
Surface material	e.g. <i>concrete, bituminous, modular slabs / blocks</i>
Footway length	e.g. <i>120m</i>
Footway width	e.g. <i>1.8m</i>
Photograph	e.g. <i>sufficient to record condition before and after reinstatement</i>
Details of Pipe / Service:	
Type	e.g. <i>450mm diameter uPVC gas main</i>
Number of pipes / cables	e.g. <i>2 no. 150 diameter pipes</i>
Width of trench	e.g. <i>900mm</i>
Depth of trench	e.g. <i>1.5m</i>
Depth of cover	e.g. <i>1.3m</i>
Temporary reinstatement material	e.g. <i>dense macadam</i>
Permanent restoration material	e.g. <i>rolled asphalt</i>
Chamber covers type	e.g. <i>MH cover</i>
Chamber locations	e.g. <i>co-ordinates</i>
Backfill material	e.g. <i>Clause 805</i>
Details of Inspections	
Before Construction	

Table 7.2: Sample Road Opening Record	
Date	e.g. 4 th January 2013
Inspector (name, organisation)	e.g. Joe Bloggs, council / Inspectors Ltd.
Comments	e.g. surface material, general condition in vicinity of proposed works
During Construction	
Date	e.g. 12 th January 2013
Inspector (name, organisation)	e.g. Joe Bloggs, council / Inspectors Ltd.
Acceptable	e.g. yes or no
Comments	e.g. issues notified to contractor if not acceptable
Completion of Temporary Restoration	
Contractors Name	e.g. Tarmacadam Ltd.
Date	e.g. 12 th February 2013
Inspector (name, organisation)	e.g. Joe Bloggs, council / Inspectors Ltd.
Acceptable	e.g. yes or no
Comments	e.g. issues notified to contractor if not acceptable
Completion of Permanent Restoration	
Contractors Name	e.g. Tarmacadam Ltd.
Date	e.g. 12 th April 2013
Inspector (name, organisation)	e.g. Joe Bloggs, council / Inspectors Ltd.
Acceptable	e.g. yes or no
Comments	e.g. issues notified to contractor if not acceptable
End of Defects liability period	
Date	e.g. 12 th April 2015
Inspector (name, organisation)	e.g. Joe Bloggs, council / Inspectors Ltd.
Acceptable	e.g. yes or no
Comments	e.g. issues notified to contractor if not acceptable

Recommendation: Road authorities should record the result of reinstatement inspections and store to data in a format that can be exported for comparison with pavement condition data.

7.5 Long-term Damages

It is anticipated that the collection of the data recommended above will, over time, enable road authorities to evaluate the cost of long-term damages. Having a record of the timing and extent of openings, combined with road condition recorded from condition surveys, should allow the condition and rates of deterioration of roads that have been disturbed by trenches and other openings, to be rationally compared with the condition of similar roads that have not been opened.

The cost of long-term damages may be able to be calculated by estimating the works required to counteract the foreshortening of the life of the pavement. Therefore resurfacing and / or strengthening works being required earlier than if the opening had not occurred. In some instances, it may also be appropriate to include in the calculation the cost of remedial works to the reinstatement, i.e. just the repair of the trench.