DMURS applies to Roads and Streets in Urban Areas within 60 km/h limit or less.

- Does not apply to motorways

- Must be used in urban areas unless written consent is given by a sanctioning body (DTTAS, NRA, NTA) to depart from it

The Design Manual for Roads and Bridges (DMRB) will no longer apply to urban roads and streets other than in exceptional circumstances.
DMURS complements previous advice issued viz:

- *Smarter Travel* (2009).
- *Sustainable Residential Development in Urban Areas* (2009)

Less prescriptive than DMRB and allows flexibility. Solutions & Designs need a level of innovation.

- Education, Training & Experience
- It’s use requires design and judgement
- Will need a multidisciplinary approach
Emphasis on road design documents has mainly been in catering for traffic even in urban areas.

NRA DMRB used as the default standard

- Not suited for Urban Roads
- Suited for Isolated/Rural Roads
- Minimum speed 50 km/h
- Addresses roads in terms of movement as opposed to place
- Motorway versus Distributor Road versus Boulevard
The Successful Place

(Village, Town or City Neighbourhood)

Success Looks Like ....

- Visitability / Tourism / Footfall
- Convenience and Easy Access
- Walking / Cycling
- Safe, Clean Public Realm
- Local Shops, Restaurants and Produce
- Protected Heritage and National Diversity
- Local Enterprise and Skills

Success Looks Like…

- Visitors & Events
- Jobs
- Vitality

- Local Energy,
- Local Food
- Footfall
If Success Looks Like... Westport

Better balance between car & other alternatives........

Growth in....walking/cycling, visitor numbers, economic activity, community pride
Why do we do this...
The Inefficient Place...

Increases journeys, speed, car dependency & carbon

Low Density
Single Use Zoning
Disconnected Layout

Decreases public transport, cycling, walking & social interaction
Over Design
(DMRB as default standard)

Under - Provision
Measuring Performance

• Modal Split – Effective Indicator

• National Targets by 2020
  – 45% Car Commuting
  – 55% Walking, Cycling and Public Transport

• Currently (2011)
  – c72% Vehicle Commuting
  – c20% Walking, Cycling and Public Transport

• Cities mirror State

• Major Challenges
Cities with <40% Car trips not just due to better public transport - consistently twice as much walking and cycling than Dublin
Cork v EU Competitors (Journey to Work)

Smaller cities with <45% car trips: 2-3 times more walking & cycling

- Cork (0.2 million)
- Freiburg (0.22 million)
- Odense (0.19 million)
- San Sebastian (0.18 million)
- Graz (0.26 million)
- Groningen (0.18 million)
- Malmö (0.3 million)

Legend:
- Blue: Public Transport
- Yellow: Walk/Cycle
- Red: Vehicle
The Problem - Segregation

Network Segregation, Distributor & Cell

Pedestrian Segregation
The Connected Place…

Inclusive…  Connected…  Not Car Dependent

Diverse  Centred  Walkable
Efficient Use of Resources:
Value + Added Value

Climate Change:
Reduction of Carbon Emission

Social Capital:
Fairness & Cohesion
CONNECTED NETWORKS
Emphasis on Place

• Urban Roads can traverse many different types of place

• As place value increases, this requires
  
  – Greater levels of connectivity; higher levels of pedestrian movement, better integration between all modes to calm traffic and higher quality design solutions
Emphasis on Connectivity

- More connected, integrated networks
- Less restrictions on vehicular movement
- More frequent, smaller junctions
- Greater accessibility, all modes
- Lower vehicle speeds
- To be applied subject to context
Emphasis on Connectivity

SDCC Survey - Local Links

- Consistent with 85-90% support for permeability improvements within 10-minute walking catchment

- When we create conditions that enable people realise their aspirations – they will respond…
The Solution: The Traditional Street
Emphasis on Self-Regulating Streets

- 'Place' based and conventional measures, that influence driver behaviour illustrated in the Adamstown Street Design Guide (2010).

- No single measure is effective on its own. Measures are most effective when used in combination (Transport Research Laboratory 2005).
Emphasis on Self-Regulating Streets

- RSA Free Speed Survey and Street Characteristics. Strong trend whereby as the frequency and strength of both the place based and 'conventional' measures increased, operating speeds lowered significantly

Average Operating Speed (All Streets)

- Stillorgan Road (60 km/h) Ave. 71.6 km/h
- Lwr Kilmacud Rd (50 km/h) Ave. 48.7 km/h
- Brian Rd (50 km/h) Ave. 31.0 km/h
Emphasis on Self-Regulating Streets

• Significantly, where there are limited psychological and physical design measures on streets with a speed limit of 50 km/h, most drivers exceeded the speed limit by 10 km/h or more.

% of Drivers Exceeding the Speed Limit by 10 km/h or more (50 km/h streets)

- Stillorgan Road (60 km/h) 83.6%
- Lwr Kilmacud Rd (50 km/h) 37.6%
- Brian Rd (50 km/h) 1%

Frequency and Intensity of Psychological and Physical Measures
Emphasis on Self-Regulating Streets

- Significantly, where there are limited psychological and physical design measures on streets with a speed limit of 50 km/h, most drivers exceeded the speed limit by 10 km/h or more.

% of Drivers Exceeding the Speed Limit by 10km/h or more (50 km/h streets)

Frequency and Intensity of Psychological and Physical Measures

**HARD AND FAST FACTS**

- pedestrians hit by a car...
  - at 30 km/h – 1 in 10 will die
  - at 50 km/h – 5 in 10 will die
  - at 60 km/h – 9 in 10 will die

Frequency and Intensity of Psychological and Physical Measures
Emphasis on Self-Regulating Streets

- Research highlights the need to re-evaluate much of what has been accepted as convention.

- DMURS highlights issues with conventional design approaches that seek to minimise risk and delay for motor vehicles.

- This approach is counterproductive in urban areas as drivers are more inclined to drive at inappropriate speeds and behave more aggressively.

- Further implications for sustainability and quality of life. If streets are not perceived to be safe, people will retreat to the safety of their cars.
Emphasis on Details

- The quality of materials should be selected based on the hierarchy of the street

- Higher quality materials, used where it benefits the largest number of people

- When materials and finishes are appropriately matched to a streets hierarchy it enables people to immediately understand a streets relative importance
• A very effective and beneficial means of reducing cost and improving the street environment is to minimise repetitive signs and lines.

• They detract from the appearance of the street, clutter up pavements, and are an unnecessary cost.

• Sign sizes matched to the relevant speed

• Enable pedestrian to walk along desire lines rather than provide guard rails

• Fear that parking and driving rules and regulations become unenforceable
Changes to Geometrical Standards

- Stopping Sight Distance key parameter
- SSD’s revised based on:
  - reduced reaction times
  - increased deceleration rates
  - based on research for ‘Manual for Streets’

<table>
<thead>
<tr>
<th>Design Speed</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMRB</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>50</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>DMURS</td>
<td>7</td>
<td>14</td>
<td>23</td>
<td>33</td>
<td>45</td>
<td>59</td>
</tr>
</tbody>
</table>

Stopping Sight Distances (m)

- Implications for Forward Visibility and Junction Visibility envelopes
Changes to Geometrical Standards

• DMURS promotes tighter corner radii
  – Reduces speed and increases visibility of vehicles
  – Reduces crossing distance
  – Improves safety for pedestrians and cyclists
Emphasis on Multi-Disciplinary Approach

Range of Inputs Required

**Required**
- Engineering
- Town Planning
- Urban Design*

**Desirable**
- Architecture
- Landscape Architecture

**As required**
- Heritage Specialist
- Conservation Specialist
- Environmental Specialist

*May also include an architect, engineer or town planner with urban design skills.

![Diagram showing the relationship between Streetscape and Traffic management with detailed skills on the vertical axis and general awareness on the horizontal axis. The diagram includes points for Urban designer, Senior officer, Traffic engineer, and Politician.]
Emphasis on Multi-Disciplinary Approach

Analysis and Vision → Design/Refine

Consultation → Construction and Monitoring
## Emphasis on Multi-Disciplinary Approach

<table>
<thead>
<tr>
<th>Review</th>
<th>Identify</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Plans</td>
<td>- Future context of project</td>
</tr>
<tr>
<td>- Spatial character</td>
<td>- Functions of street network</td>
</tr>
<tr>
<td>- Movement patterns</td>
<td>- Clear set of objectives</td>
</tr>
<tr>
<td>- Topography/landscape</td>
<td>- Balancing place &amp; movement, character &amp; connectivity</td>
</tr>
<tr>
<td>- Built-form</td>
<td></td>
</tr>
<tr>
<td>- Heritage</td>
<td></td>
</tr>
<tr>
<td>- Traffic survey</td>
<td></td>
</tr>
</tbody>
</table>
Hierarchy of Plans

**County Development Plan:**
- Integrate land-use, compact settlement & transport strategies to promote modal shift & reduce car-dependency

**Local Area Plan:**
- Link land-use to indicative street network identifying walking/cycling, public transport & vehicle routes to ensure connectivity & offer alternatives to total reliance on cars

**Master Plan (Planning Application Stage):**
- Expand strategies into detail of street type, parking & the public realm to integrate movement patterns into a coherent urban design & place-making
Hierarchy of Plans

**Movement Framework:**
- Use traffic management strategy to model the movement of various traffic modes within a network.
- Ensure street/road plans take into account the inter-relationship between movement & place

**Public Realm Strategy:**
- Develop detailed design outcomes including material palettes & construction specifications.
- Encourage sensitive response to heritage environments & specific traditions
Quality Audits

Quality audit is a check that all the potential Social, Economical & Environmental opportunities within the project are realised & integrated into a coherent design of Place:

- An audit of visual quality
- A review of how the street is/may be used by the community
- An access audit
- A walking audit
- A cycle audit
- A non-motorised user audit
- A community street audit (in existing streets) and
- A place check audit
- A road safety audit, including a risk assessment
Conclusions

• DMURS replaces the NRA DMRB for use of Urban Roads and Streets.

• DMURS seeks to address the issues associated with more conventional/traffic orientated design.

• DMURS compliments existing government polices that promote more attractive, walkable/Cyclable, connected and therefore sustainable communities.
Conclusions

- Key outcomes.
  - Permeable/legible urban environment
  - Focus on pedestrian movement
  - Enhanced place value
  - Better managed vehicle speeds
  - Multi-Disciplinary design process