

# Junction Roadside Development Study

## National Road Network

### 2010, 2011 & 2012

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## Introduction

- Roadside Development Study for the years 2010, 2011 and 2012

## Scope

- Collisions on Rural Two Lane National Primary and National Secondary Roads only.

## Objective

- Identify collisions relating to turning movements which were as a result of a direct access to a roadside development, either private or public.

**Collision:** is a rare, random, multi-factor event preceded by a situation in which one or more road users have failed to cope with their environment.

**Turning Movement:** is a movement involving one of the following, as recorded in the Garda PC16 Road Traffic Accident Reports:

- Head on Right Turn,
- Angle Both Straight,
- Angle Right Turn,
- Rear End Straight,
- Rear End Right Turn,
- Rear End Left Turn and Other

**Roadside Development:** is a property either public or private with a direct access onto the road network.

One of the Key Principles contained in *Spatial Planning and National Roads* is as follows;

*"... planning authorities, the NRA, road authorities and the Road Safety Authority must guard against a proliferation of roadside developments accessing national roads to which speed limits greater than 50-60 kmh apply as part of the overall effort to reduce road fatalities and injuries."*

In accordance with this Key Principle, the current Development Plan Policy on Access to National Roads as outlined in *Spatial Planning and National Roads* states;

***Land adjoining Roads to which speed limits greater than 60kmh:***

*Avoid the creation of any additional access point from new development or the generation of increased traffic from existing accesses to national roads*

***Transitional Zones:***

*Provide for a limited level of direct access to facilitate orderly urban development, which will be subject to a road safety audit carried out in accordance with the NRA's requirements and a proliferation of such entrances, which would lead to a diminution in the role of such zones, must be avoided*

***Lands adjoining National Roads within 50 kmh speed limits:***

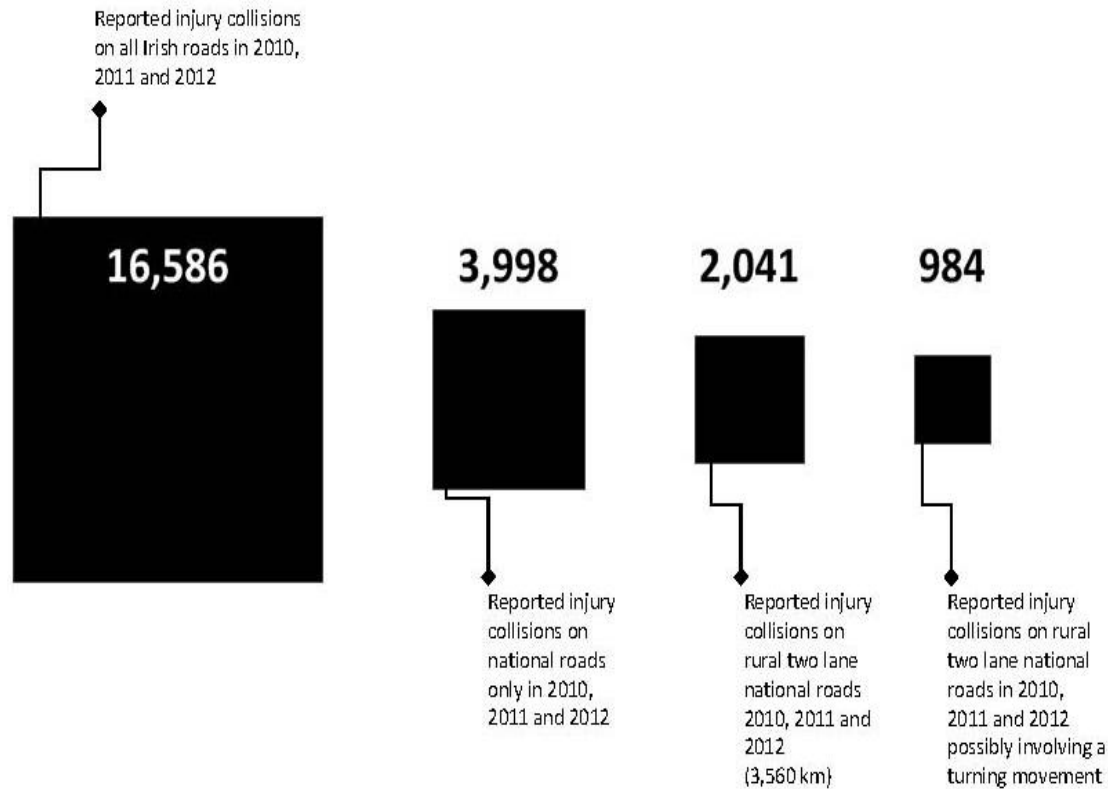
*Access to national roads will be considered by planning authorities in accordance with normal road safety, traffic management and urban design criteria for built up areas*

The following methodology was employed to carry out this study:

1. Review data provided by the NRA which included;
  - Collision data
  - Garda Siochana Road Traffic Accident Reports (PC16 records)
  - Google KMZ files locations of identified collisions
2. Identify the collisions caused due to turning movements to a roadside development
3. Formulate statistical information
4. Provide a summary of factual findings

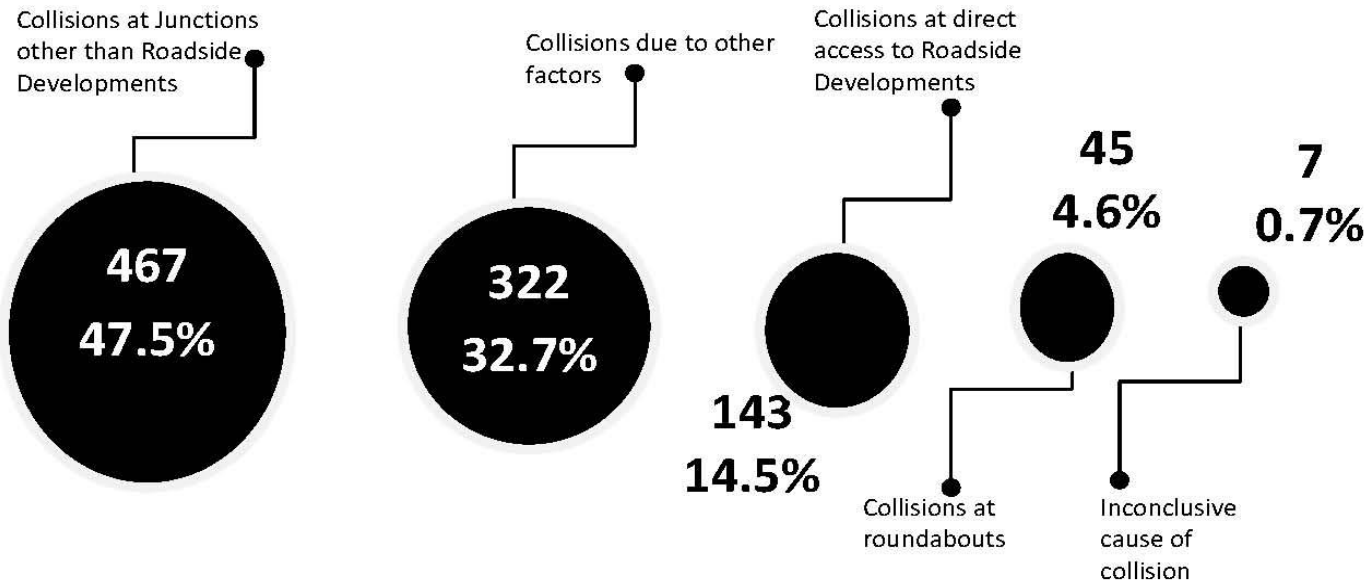
We reviewed the collision data and categorised and analysed the data as follows:

- Distribution by Category of Collisions
- Frequency of Collisions involving turning movements
- Speed Limits at Collision Sites
- Frequency of Collisions due to direct access to Roadside Developments
- NRA HD15 Collision Rate, of Collisions
- AADT Category of Collisions
- Building Density Category of Collisions

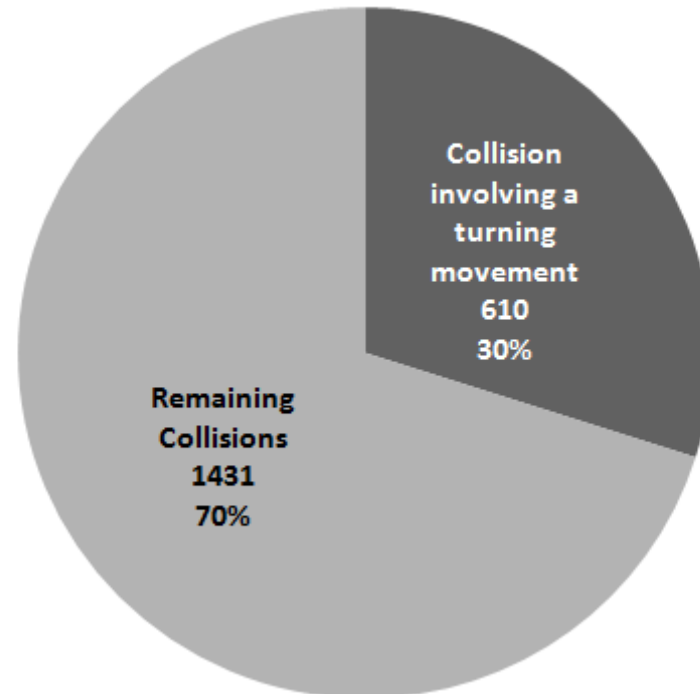


## Breakdown of Collisions on Irish Roads for 2010, 2011 & 2012

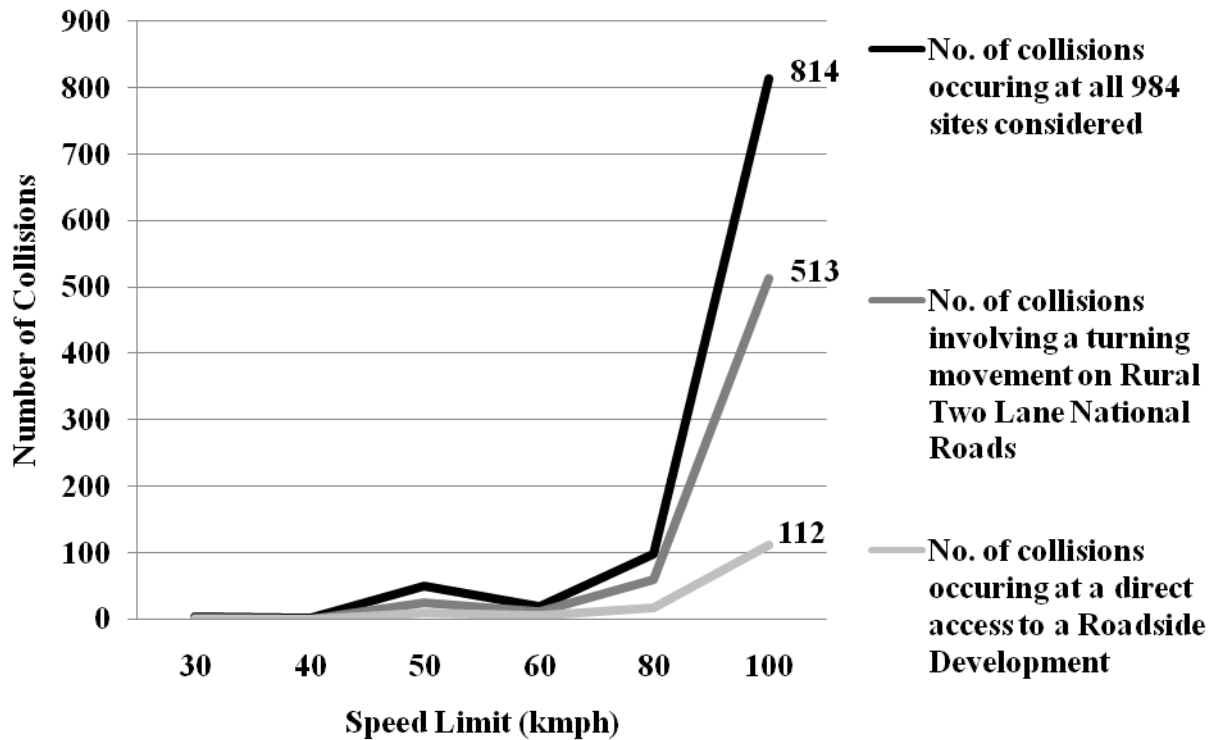




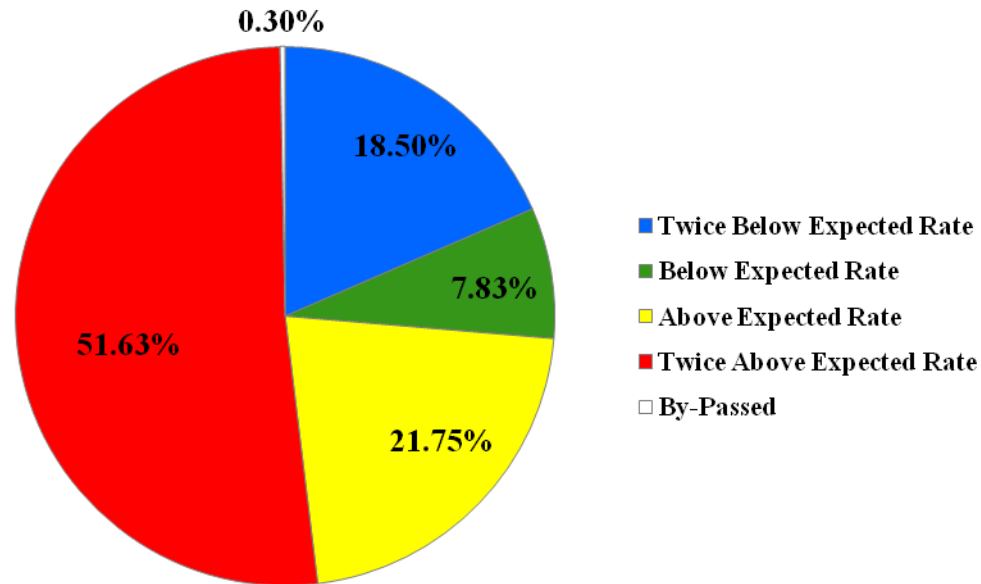
Distribution by Category of Collisions on Rural Two Lane National Roads for 2010-2012 *(All 984 collisions studied possibly involving a turning movement)*



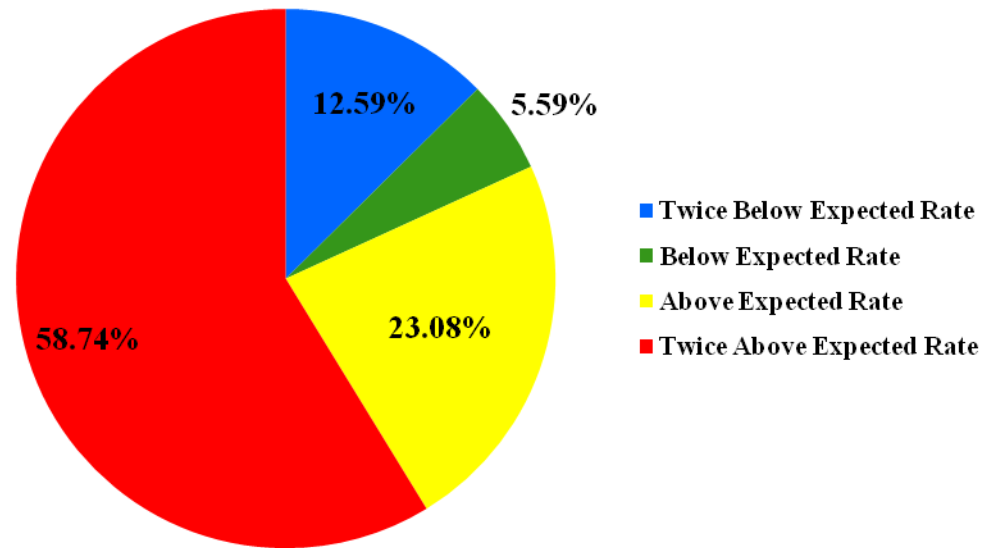
Frequency of Collisions which involve a turning movement on Rural Two Lane National Roads for 2010, 2011 & 2012 *(All 2,041 collisions)*



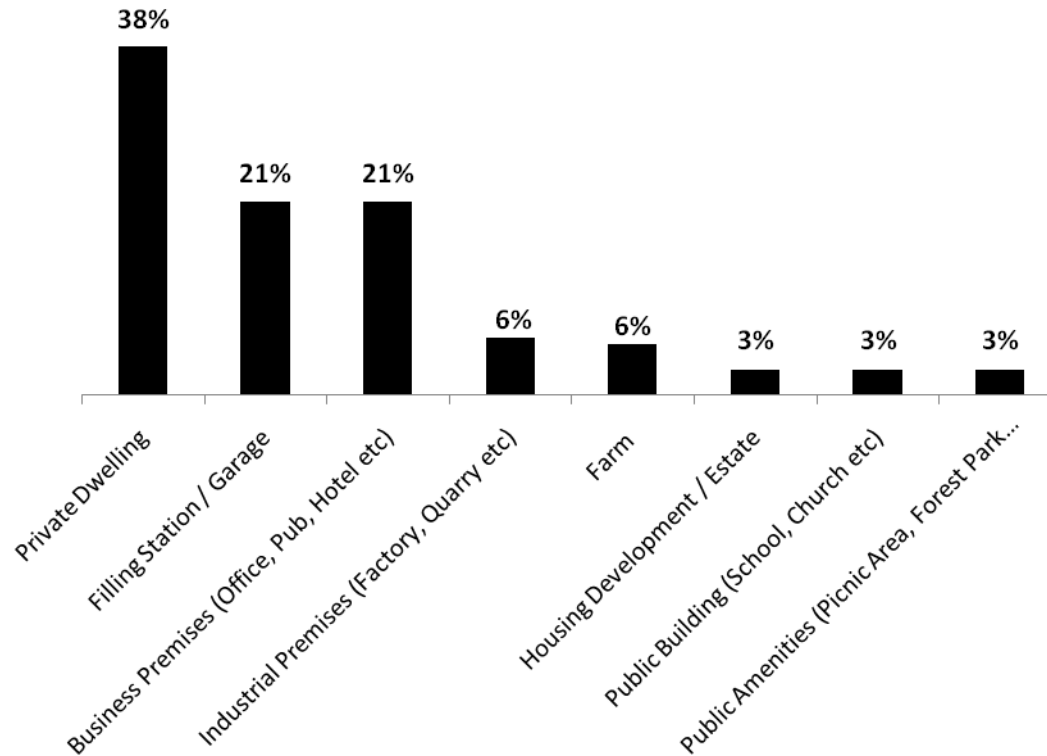
Speed Limits at collision locations involving a turning movement on Rural Two Lane National Roads, for 2010, 2011 & 2012 *(All 984 Collisions studied)*



HD15 Collision Rates at Collision sites on Rural Two Lane National Roads  
for 2010, 2011 & 2012 *(All 984 Collisions studied)*

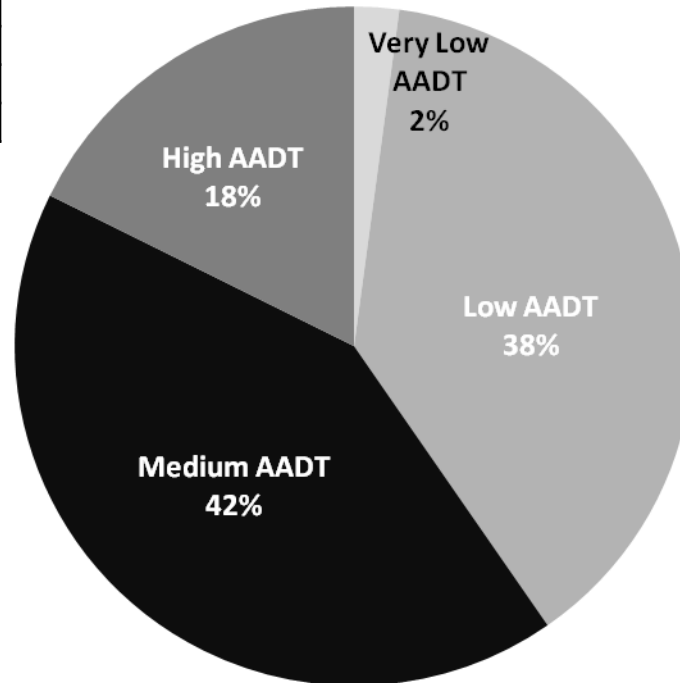


HD15 Collision Rates at Collision sites with direct access to Roadside Developments for 2010, 2011 & 2012 *(143 collisions due to direct access to Roadside Development)*



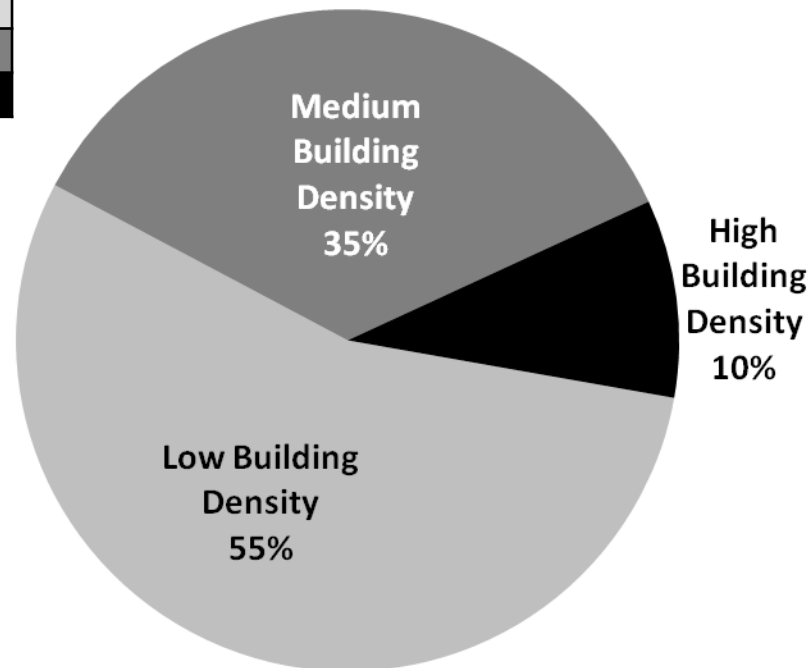
Frequency of Collisions due to direct access to Roadside Developments, categorised according to type of Roadside Development, for 2010, 2011 & 2012 for all speed limits (143 collisions due to direct access to Roadside Development)

Classification of AADT Values	
AADT	Class
0 - 2,000	Very Low
2,001 - 6,410	Low
6,411 - 13,262	Medium
13,263 - 30,214	High



The AADT Category of Collision sites on Rural Two Lane National Roads for 2010, 2011 & 2012 *(All 984 Collisions studied)*

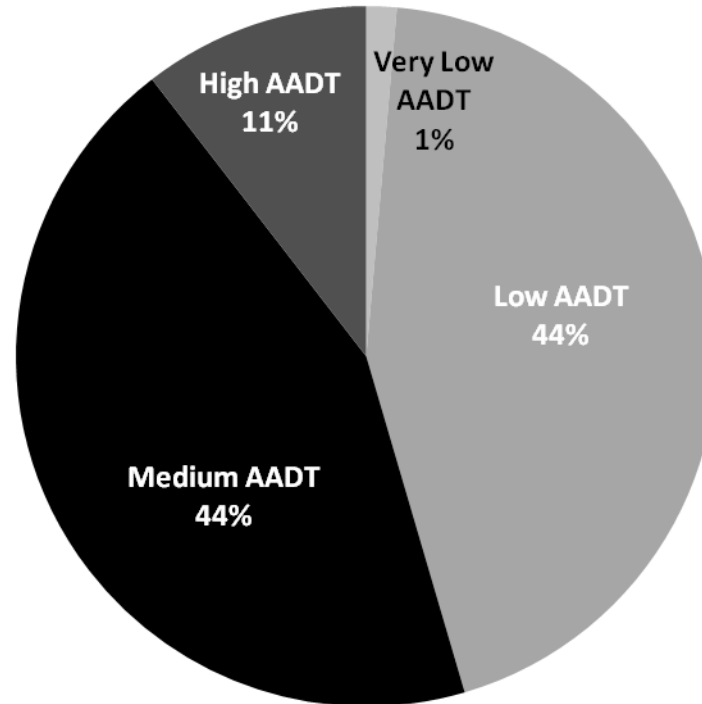
Classification of Building Density Values	
Building Density	Class
< = 4 per km	Low
5 - 11 per km	Medium
> = 12 per km	High



Building Density at Collision sites on Rural Two Lane National Roads  
for 2010, 2011 & 2012 *(All 984 Collisions studied)*

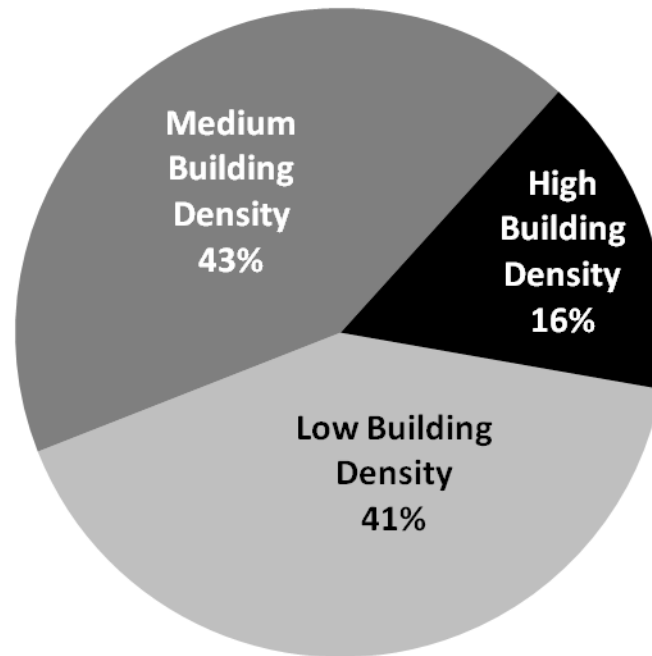


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Building Density at Collision sites with direct access to Roadside Developments  
 for 2010, 2011 & 2012 *(143 collisions due to direct access to Roadside Development)*

	Very Low AADT	Low AADT	Medium AADT	High AADT
Low Building Density	12	183	235	111
Medium Building Density	9	157	131	51
High Building Density	0	36	47	12

Relationship between AADT and Building Density values at Collision sites on Rural Two Lane National Roads for 2010, 2011 & 2012 *(All 984 Collisions studied)*

	Very Low AADT	Low AADT	Medium AADT	High AADT
Low Building Density	2	28	22	7
Medium Building Density	0	25	28	8
High Building Density	0	10	13	0

Relationship between AADT and Building Density values at Collision sites with direct access to Roadside Developments for 2010, 2011 & 2012  
*(143 collisions due to direct access to Roadside Development)*

## Summary

"Collisions involving a Turning Movement" accounted for **30%** of the total collisions on Rural Two Lane National Roads for the period 2010, 2011 and 2012.

Of the 984 collisions studied, **14.5%** of these were due to a direct access to a Roadside Development.

From the Transport Infrastructure Ireland (TII) statistics received, **70.4%** of KSIs reported between 2009 to 2011 occurred on **Rural Two Lane** National Roads.

From the research carried out by Peter Monahan, **95%** of KSIs on all Roads in the period 2009 to 2011 occurred on Single Carriageways (national, regional and local roads), that Road was a factor in 57% of the total KSIs in the same period, and of those where Road was a factor, 25% occurred at junctions.

Only 9.8% of the 143 collisions located at a direct access to a Roadside Development occurred where the speed limit is 60kmph or less, compared to 78.3% at a speed limit of 100kmph..

Of the collisions that occurred at locations of direct access to Roadside Developments, **59%** of these were located in kilometre segments where the Collision Rate was "*Twice Above Expected Rate*".

*"Private Dwellings"* accounted for **38%** of the collisions due to direct access to Roadside Developments.

*"Filling Stations"* and *"Business Premises"* each account for **21%** of the Collisions due to direct access to Roadside Developments.

Of the 143 collisions that occurred at locations of direct access to Roadside Developments, **11%** of these were located in High AADT areas, **44%** were located in Medium AADT areas, **44%** located in Low AADT areas, and **1%** in Very Low AADT areas.

Of the 143 collisions that occurred at locations of direct access to Roadside Developments, **16%** of these were located in High Building Density areas, **43%** were located in Medium Building Density areas and **41%** located in Low Building Density areas.

Where the AADT is "High", the number of collisions that occurred at locations of direct access to Roadside Developments is significantly lower for each of the Building Densities compared with "Medium AADT" or "Low AADT".

For each of the Building Densities there is a very significant reduction in the number of collisions where the AADT is "Very Low" compared to when the AADT is "Low"

Even when all categories of Building Density are considered, only 2 out of the 143 collisions at locations of direct access to Roadside Developments occurred where the AADT was “Very Low”. This equates to just **1.4%** of collision sites with direct access to Roadside Developments.

For “High Building Density” the number of collisions is significantly lower for each category of AADT than for “Medium Building Density” or “Low Building Density”, which aligns with the principle in national planning policy to channel developments within settlements.