

7 Road safety

7.1 Where do we want to be?

7.1.1 The vision

Road safety objectives within Croydon over the next ten years (i.e. the short to medium term periods of this Strategy) should focus on:

- meeting the new national 10 year targets for personal injury collisions for road accidents when published later this year;
- reducing the severity of personal injury collisions for road accidents involving vulnerable road users, particularly cyclists and those on power two wheelers;
- continued enforcement of speed limits;
- reducing road danger perception; and
- awareness campaigns & educational programmes to promote safety and road user responsibilities.

The severity of injuries and the perception of road danger are intended to reduce the severance effects of vehicular traffic on local communities and encourage more walking and cycling which is a central theme within this Strategy.

7.1.2 Targets

Current pan-London and national road safety targets end this year and Croydon is well positioned to meet these with the only exception of those related to powered two-wheelers which nationally have been difficult to reduce. It is uncertain what the new national targets will be or whether London (as in the past) will pursue more stringent goals.

The latest Government road safety research report [DfT, 2009] does not advise on what the new targets will be, but it is expected that over the next ten years Councils will be required to reduce all personal injury collisions by a third, based on 2010 levels. Croydon will have to put special emphasis on those involving pedal cyclist and powered two-wheelers if, as expected the use of these modes increases significantly in future years.

7.1.3 Severity

Road safety schemes should be focused towards pedestrian, cyclists and powered two wheelers whose severity of injury is generally greater than those in cars. The most effective means of reducing the severity of personal injury collision is to reduce speed and this should be achieved through the use of physical speed reduction techniques (where appropriate), new road designs, education and the enforcement of speed limits.

7.1.4 Enforcement

Enforcement of vehicular speeds is a key element to achieving the previous two objectives. Regardless of the speed limit for a certain road the restriction soon becomes ineffective if drivers perceive that they are not being monitored and enforced.

New technologies and legislation provide opportunities to make more effective reductions to vehicle speeds, particularly in sensitive locations such as residential areas or outside schools.

7.1.5 Road danger perception

Road users who perceive areas of danger may decide to avoid certain parts of the road network by either taking an alternative route or choosing not to make the trip at all. This is particularly pertinent to pedestrians, cyclists, and powered two wheelers whose severity of injury in a road traffic accident is generally greater than those travelling by private car or bus.

In some cases, the diversion of these more vulnerable road users is an accepted road safety intervention (e.g. the use of quiet roads for cycle routes) but in others, can lead to local area severance and accessibility issues which in turn deter walking and cycling within a local area. To support the promotion of walking and cycling road safety measures should be introduced to reduce the perception of road danger.

7.1.6 Awareness campaigns & educational programmes

The Council should continue to actively raise awareness of road safety issues through local campaigns while also improving local resident road user skills (particularly the young) through training courses. Additional effort should be applied to raise cyclists (both pedal cyclists and powered two wheelers) consciousness about their vulnerability.

7.2 Where are we now?

7.2.1 Targets

In 2000 the Government published its road safety strategy and casualty reduction targets for 2010 [DETR, 2000]. The targets compared the average for 1994-98 and set the following reduction targets; 40 per cent for people KSI⁷ [NI47]; 50 per cent for children KSI [NI48]; and a 10 per cent for the slight casualty rate expressed as the number of people slightly injured per 100 million vehicle kilometres.

The Mayor's Transport Strategy [Mayor of London, 2001] endorsed these National targets in the London Road Safety Plan [Transport for London, 2001] but to further protect vulnerable road users and help promote walking and cycling in the Capital the 40 per cent KSI targets were applied individually to the pedestrian, pedal cyclist and powered two wheelers modes.

By 2004 these targets had been achieved in London (apart from those for powered two wheelers) so in 2006 the Mayor introduced more challenging KSI targets which were still to be achieved by 2010. The targets now required a 50 per cent reduction over all modes; a 50 per cent reduction for cyclists and pedestrians; a 40 per cent reduction for powered two wheelers (unchanged); a 60 per cent reduction for children; and a 25 per cent reduction in the slight casualty rate again expressed as the number of people slightly injured per 100 million vehicle kilometres.

Recent reports produced by the London Road Safety Unit [Transport for London, 2009b] have demonstrated how the London Boroughs fared in achieving the latest targets as the 2010 deadline approached. The findings are provided in Table 7-1 below which gives the pan-London averages and those for the London Borough of Croydon.

Like many other London Boroughs, Croydon is close to achieving these targets. In the case of pedal cyclists it should be noted that as with the rest of London the variability of these person injury collisions make it difficult to confirm with any confidence that targets have been met. For example the target reduction of 50 per cent could have been achieved in Croydon if there had been two casualties less. There is still one year to go but given progress made in Croydon it seems realistic to assume that targets for all categories except powered-two wheeler will be met by the end of 2010⁸.

These targets were achieved by promoting safer driving and safer road use, implementing road safety schemes, imposing safer speeds and increasing enforcement.

⁷ KSI - Killed or Seriously Injured

⁸ Nationally the powered-two wheeler target has been the most difficult type of personal injury collision to reduce and as highlighted by the Greater London average in Table 7-1.

Table 7-1: Summary of casualties in Croydon and Greater London

Category	Area	1994-98 Average	2008	% change from 1994-98 avg. to 2008	Target reduction by 2010
All KSI casualties	Croydon	247	132	-47%	50%
	Greater London	6,684	3,526	-47%	
Pedestrian KSI casualties	Croydon	68	37	-45%	50%
	Greater London	2,137	1,208	-43%	
Pedal cyclist KSI casualties	Croydon	13	9	-31%	50%
	Greater London	569	445	-21%	
Powered two-wheeler KSI casualties	Croydon	31	26	-17%	40%
	Greater London	933	738	-21%	
Child KSI casualties	Croydon	42	16	-62%	60%
	Greater London	935	310	-67%	
All slight casualties	Croydon	1,632	997	-39%	25%
	Greater London	38,997	24,627	-37%	

7.2.2 Severity

Overview

Personal injury collisions for the Borough over the three year period (2006 to 2008) were supplied by Transport for London's Road Safety Unit. Over this period there have been a total of 3,487 incidents within the Borough of which the majority (3,048) resulted in an injury of slight severity. There were 420 serious and 19 fatal incidents over the same three year period. Of all incidents, 582 (17 per cent) involved pedestrians, 228 (7 per cent) cyclists and 432 (12 per cent) powered two wheelers. Figure 7-1 to Figure 7-4 illustrates the distribution of these incidents across the Borough.

- Of the 582 recorded pedestrian accidents, 122 were of serious severity and 6 were fatal. The cause of those fatal collisions included a failure to look properly (pedestrian and vehicle driver), distraction, and reckless driving. The location and cause for the fatal pedestrian collisions are discussed later.
- Of the 228 recorded collisions involving cyclist, 29 were of serious severity but none fatal. Causes of these severe injuries included the common cause of failure to look properly (cyclist and vehicle driver) but also disobedience to traffic rules and careless driving.
- Of the 432 recorded two wheeler incidents, 74 were of serious severity and 3 were fatal (one each year). Causes of these accidents included motorcyclists driving too fast and other vehicle drivers failing to see the powered two wheelers when turning.

Analysis of the accident data has allowed the worst sections of road (links) and junctions (nodes) within the Borough for personal injury collisions to be identified.

Link accidents

Table 7-2 provides the road links within the Borough worst affected by personal injury collisions. In summary:

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- The worst performing link in the Borough is Purley Way between the junctions with Mitcham Road and Waddon Road, located on the TLRN. Of the 45 accidents only one involved a pedestrian and a cyclist (4 per cent) suggesting that given the volume of traffic passing along this link, pedestrians and cyclist avoid using this part of the road network i.e. there is a perception of high road danger.
- London Road between the junctions of North Borough Road and Galpins Road is ranked second and also is located on the TLRN. Of the 43 accidents that occurred on this link there is a much higher proportion (30 per cent) involving pedestrians and cyclists. This suggests that conflict between modes is greater along this section and that cyclists are particularly vulnerable. This link has the highest number of casualties per kilometre.
- Another section of London Road, between the junctions of Galpins Road and Thornton Heath Pond (also on the TLRN), had 35 accidents of which 26 per cent involved either a pedestrian or cyclist. This reflects the trend identified in the above link and again highlights the vulnerability of cyclists.
- The Addington Road/ Selsdon Park Road between the junctions of Featherbed Lane and Old Farleigh Road lies on the Borough Road Network and from 32 accidents recorded a lower proportion (19 per cent) involved pedestrians and a cyclist. It is known that the Council has introduced in the last couple of years a road safety scheme in an area close to a primary school located on Addington Road.
- The Purley Way link in Waddon lies on the TLRN and is situated between the junctions of Denning Avenue and Edgehill Road. Of the 32 accidents recorded 19 per cent involved either a pedestrian or cyclist.
- A link on High Street situated between the junctions of Katharine Street and Coombe Road lies on the Borough Road Network. Of the 31 accidents, 58 per cent involved either a pedestrian or cyclist. Pedestrians are by far the worst performing mode accounting for almost half of all the personal injury road traffic accidents due to the high commercial activity. This link has also a very high number of casualties per kilometre. The figures suggest a problem with the road layout along this link.
- Parchmore Road between the junctions of County Road and Thornton Heath High Street is a Borough Road. Of the total of 29 accidents, 38 per cent involved pedestrians and cyclists what could suggest a lack of pedestrian crossing facilities.
- The London Road link between Canterbury Road and Brigstock Road in Selhurst is part of the Borough Road Network. This link had 28 accidents of which almost the half involved pedestrians and cyclists what suggests a conflict between modes and perhaps insufficient pedestrian facilities.
- Thornton Road from Purley Way to London Road in Broad Green had the same number of accidents as the previous link, but with fewer accidents involving pedestrians or cyclists (7 per cent) and a lower rate of casualties per kilometre. This link forms part of the TLRN.
- Lower Addiscombe Road between the junctions of Cherry Orchard Road and Black Horse Lane, in Addiscombe & Ashburton and on the Borough Road Network and located had 28 accidents included a significant proportion (25 per cent) involving pedestrians and cyclists with pedestrians again performing badly. Of the pedestrian injuries the main cause could be attributed to pedestrians being hit by vehicles on crossings while a lesser cause related to pedestrians walking out into the path of a vehicle. This suggests a problem with the design, location or provision of crossing facilities along the link.
- Brighton Road between the junctions Purley Cross and Smitham Down Road in the boundary of Coulsdon East and West lies on the TLRN. A total of 28 accidents occurring within this link, 25 per cent involved a pedestrian or cyclist.

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Table 7-2: Worst affected road links (3 years – 2006 to 2008)

Link	Ward	Total	Slight	Serious	Fatal	Ped	Cycle	% (P&C)	PIC /Km
Purley Way	Broad Green	45	39	6	0	1	1	4%	27.8
London Road	Norbury	43	35	8	0	6	7	30%	58.9
London Road	West Thornton	36	31	5	0	4	6	28%	41.9
Addington Rd / Selsdon Park Rd	Heathfield, Selsdon & Ballards	32	29	3	0	5	1	19%	15.8
Purley Way	Waddon	32	30	2	0	4	2	19%	15.0
High Street	Fairfield	31	24	7	0	15	3	58%	57.4
Parchmore Road	Thornton Heath	29	23	6	0	10	1	38%	27.4
London Road	Selhurst	28	21	7	0	10	3	46%	39.4
Thornton Road	Broad Green	28	23	5	0	2	0	7%	24.8
Lower Addiscombe Road	Addiscombe, Ashburton	28	25	3	0	5	2	25%	20.3
Brighton Road	Coulsdon East / Coulsdon West	28	22	5	1	4	3	25%	18.8

Node accidents

Table 7-3 provides the accident statistics for the worst performing junctions within the Borough. In summary:

- Park Lane/ Croydon Flyover/ Barclay Road (Fairfield): This 4-arm junction provides the intersection between Park Lane, Barclay Road, the Croydon Flyover and Wellesley Road. Of the 22 accidents recorded none involved pedestrians or cyclists and suggest these modes avoid the area due to the level and speed of traffic at this junction.
- Old Town/ Duppas Hill Road Junction – the Old Town roundabout (Fairfield & Waddon): This roundabout junction provides the intersection between A236 Old Town, Duppas Hill Lane/ Davenant Road, Southbridge Road/ Lower Coombe Street, Pump Pail North/ Pump Pail South and is formed by a 'square' shaped roundabout under the Croydon flyover and a mini roundabout linking Southbridge Road with Lower Coombe Street and Southbridge Place. The junction is a key route under the A232 for all modes of traffic and is key 'hot spot' for vehicle delay and congestion. Of the 18 recorded accidents one involved a pedestrian and 2 a cyclist. Both slight cyclist injuries occurred when they rode into the path of vehicles. These accidents may be attributed to a lack of suitable pedestrian crossing points and cyclists being unable to find a suitable gap in the circulating flows.
- Purley Way/ Denning Avenue (Waddon): The A23 Fiveways junction provides the intersection between Purley Way, Denning Avenue and Trafford Road. A total of 17 accidents were recorded, of which one involved a cyclist. The A232 Network Management Plan (NMP) identified cycling as being the poorest performing 'theme' within this section of the A232 and this lack of provision combined with high traffic flows suggest both pedestrians and cyclists avoid this area.

- George Street/ Park Lane (Fairfield): The junction of George Street with Park Lane and Wellesley Road is a busy junction for pedestrians and bus movements as it lies on the main pedestrian route between East Croydon station and Croydon's retail centre and provides buses a cut-through to the stands and stops on Park Street. Of the 15 accidents recorded 47% involved either a pedestrian or cyclist. These accidents are not surprising given the complexity of the junction which can made it confusing for pedestrians particularly on the southern side where buses have a cut through to Park Street.
- Whitehorse Road/ Northcote Road (Selhurst): This 6-arm junction had 15 accidents of which 2 involved pedestrians. The accidents could be due to the number of movements allowed across the junction, the large conflict area (i.e. the area delimited by the approach stop lines), intervisibility issues (due to the angle between the roads) or insufficient intergreen times.
- Kent Gate Way/ Lodge Lane (Heathfield): This 3-arm junction provides the intersection between Kent Gate Way and Lodge Lane. A total of 14 accidents occurred with none involving pedestrians or cyclists. These vehicular accidents can probably be attributed to excessive speed and merging issues on the roundabout. Due to its location there are very few pedestrian movements although pedestrian do short-cut across the roundabout to access the Addington bus-tram interchange.

Table 7-3: Worst affected junctions (3 years – 2006 to 2008)

Node	Ward	Total	Slight	Serious	Fatal	Ped	Cycle	% (P&C)
Park Lane/ Croydon Flyover/ Barclay Road	Fairfield	22	20	2	0	0	0	0%
Old Town/ Duppas Hill Lane	Fairfield, Waddon	18	17	1	0	1	2	17%
Purley Way/ Denning Avenue	Waddon	17	15	2	0	1	0	6%
George Street/ Park Lane	Fairfield	15	13	1	1	6	1	47%
Whitehorse Road/ Northcote Road	Selhurst	15	15	0	0	2	0	13%
Kent Gate Way/ Lodge Lane	Heathfield	14	14	0	0	0	0	0%

Fatal accidents

Of the 2,417 personal injury road traffic accidents recorded within the Borough over the three year period up to the end of 2008, 19 were fatal with 7 involving pedestrians. There were no fatal injuries involving cyclists. The 7 fatal pedestrian accidents occurred at:

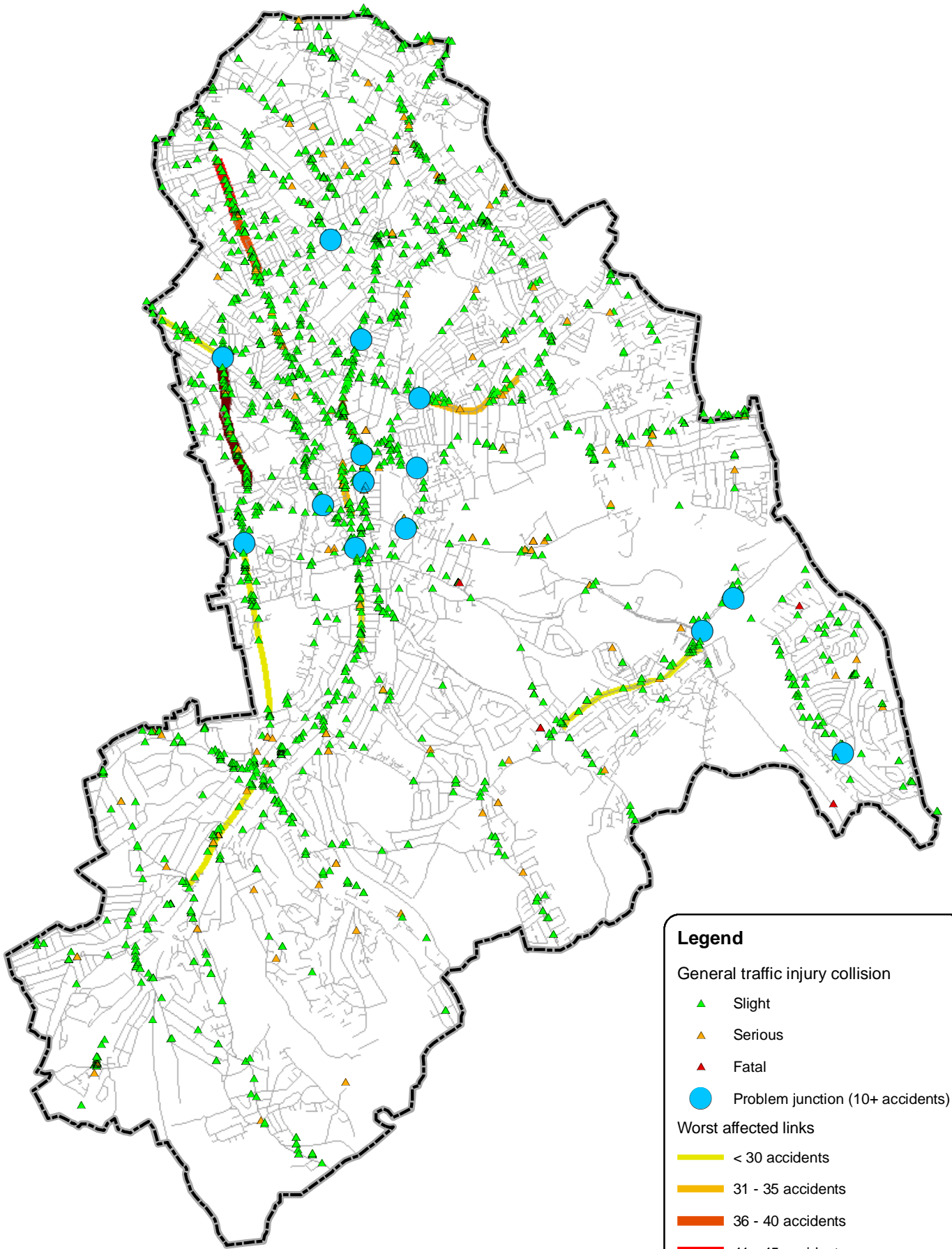
- Wellesley Road j/w Station Road in Croydon - occurred at a staggered junction with no formal crossing facilities and arose when a pedestrian crossed the road into the path of a vehicle;
- South Norwood Hill j/w High Street in South Norwood - occurred at crossroads during a pedestrian phase when a pedestrian fell into the path of a vehicle;
- Coombe Lane in Heathfield - occurred at a Zebra crossing at the Shirley Hills tram stop when an elderly person was struck by a vehicle on the crossing;
- Church Road in Kenley - vehicle lost control and collided with a parked vehicle and then a pedestrian;

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- Park Hill Road j/w Chichester Road in Croydon - located at a give-way crossroads with no formal crossing facilities and occurred when a pedestrian stepped out into the path of a vehicle; and
- Farley Road j/w Brent Road in Selsdon - occurred when a vehicle lost control, left the carriageway and hit a pedestrian.

Many of the fatalities resulted from pedestrians failing to look properly so the only mitigation would be the calming of vehicle speeds to reduce stopping distances or the severity of the injury. From the link and junction analysis there are areas where an improvement to crossing facilities would reduce the potential conflict between vehicles and pedestrians.



0 1.5 3 Kilometres

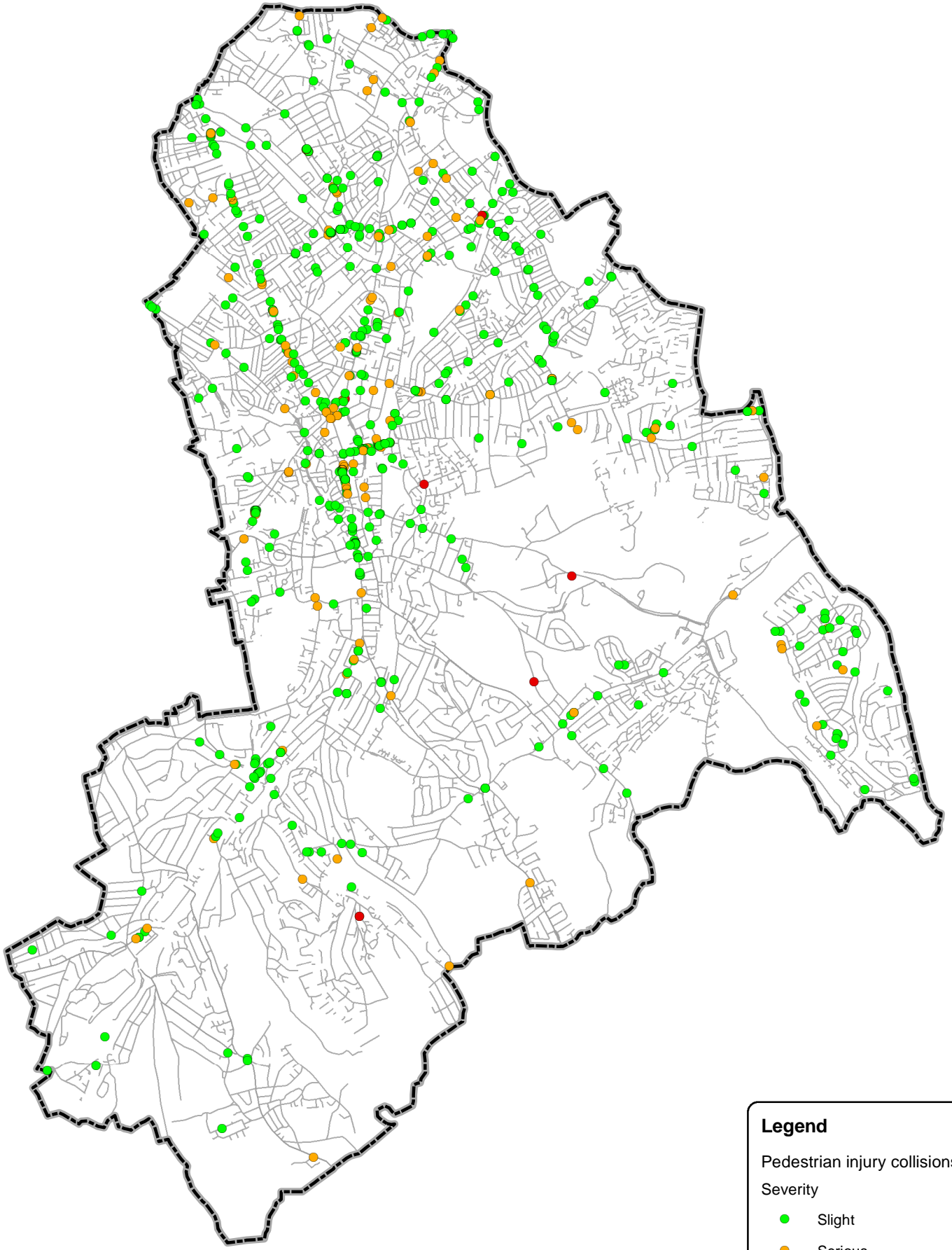
Legend

General traffic injury collision

- ▲ Slight
- ▲ Serious
- ▲ Fatal
- Problem junction (10+ accidents)

Worst affected links

- < 30 accidents
- 31 - 35 accidents
- 36 - 40 accidents
- 41 - 45 accidents
- > 45 accidents



Legend

Pedestrian injury collisions

Severity

- Slight
- Serious
- Fatal

0 1.5 3 Kilometres



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Croydon Borough Wide Transport Strategy

Personal injury collision (Jan. 2006 - Dec. 2008)

Pedestrians

Date May 2010

Scale 1:65,000 @ A4

Drawn By TH

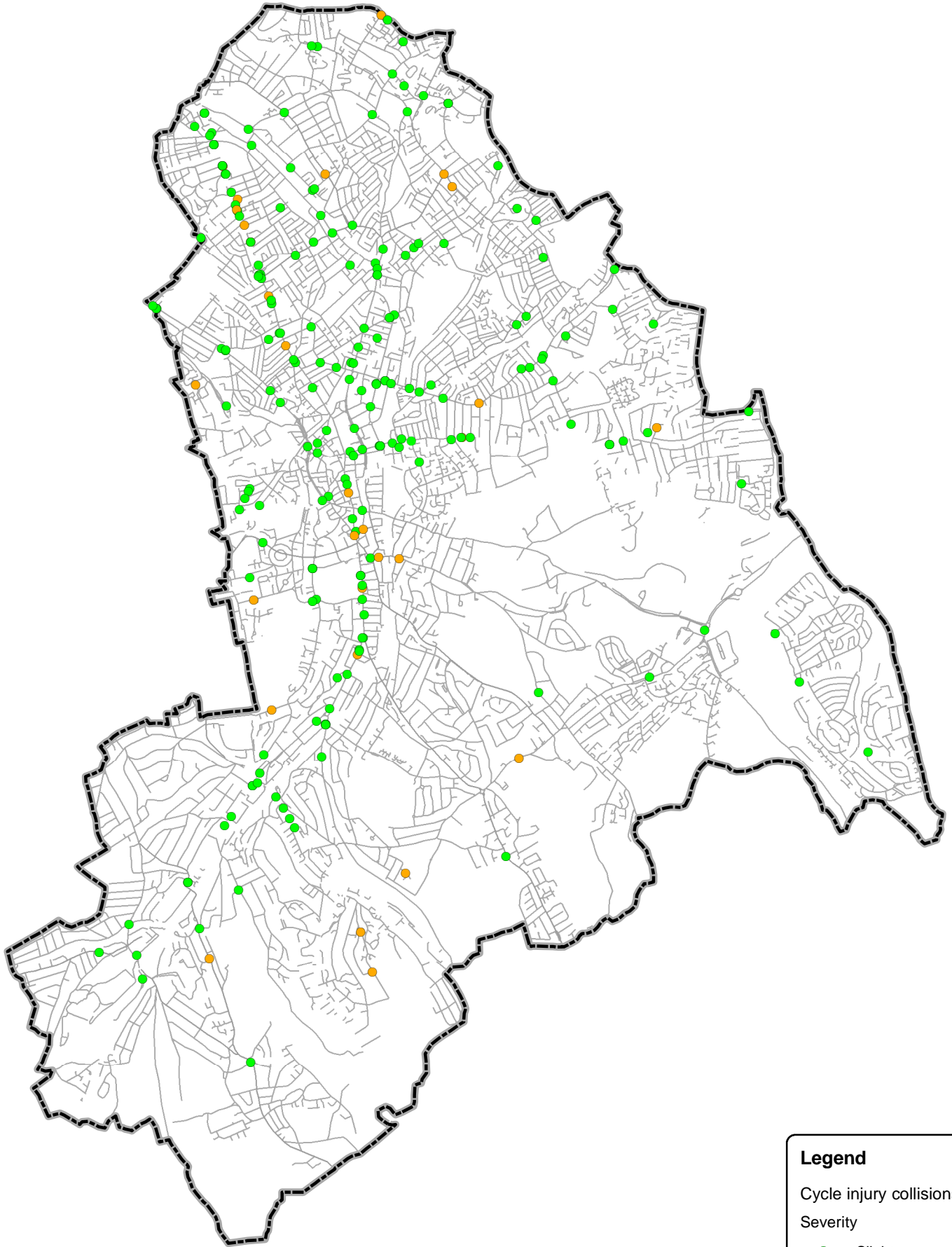
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Figure Number

Figure 7-2

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0 1.5 3 Kilometres

Legend

Cycle injury collisions

Severity

- Slight
- Serious

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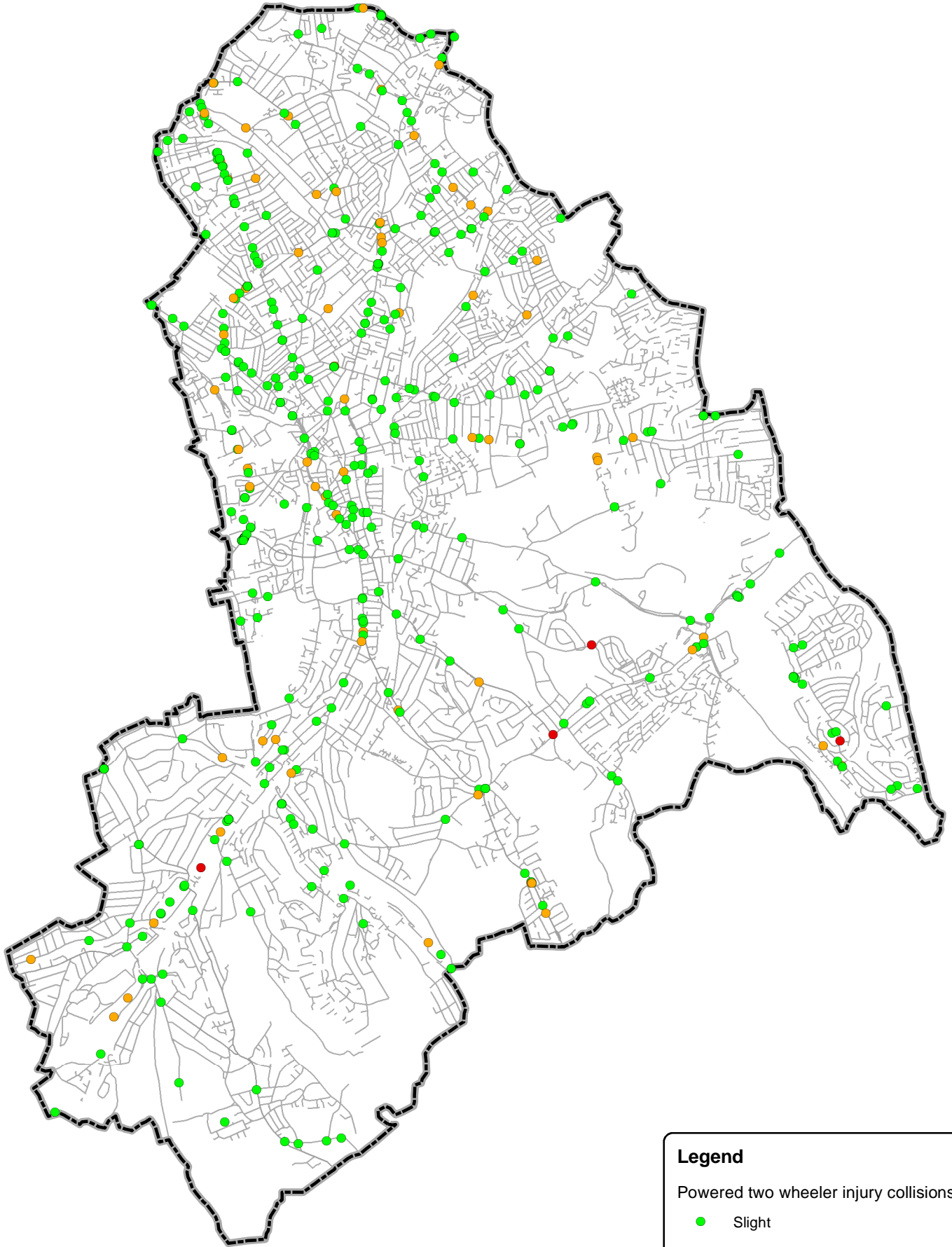
Croydon Borough Wide Transport Strategy

Personal injury collisions (Jan. 2006 - Dec. 2008)

Cyclists

Date	May 2010
Scale	1:65,000 @ A4
Drawn By	TH
Checked By	PL
Figure Number	Figure 7-3

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Legend

Powered two wheeler injury collisions

- Slight
- Serious
- Fatal

0 1.5 3 Kilometres

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Personal injury collisions (Jan. 2006 - Dec. 2008)

Powered two wheelers

Date	May 2010
Scale	1:65,000 @ A4
Drawn By	TH
Checked By	PL
Figure Number	Figure 7-4

7.2.3 Enforcement

The majority of Traffic Management Orders (TMOs) are enforced in-house by the Parking Enforcement Section. They presently enforce all parking regulations such as those related to waiting and loading (yellow lines), parking bays (various types), mandatory cycle lanes, school 'Keep Clear' markings, box junctions and off-street car parking. This section of the Council also enforces parking contraventions not requiring TMOs such as bus stops, pedestrian crossings, footway parking and double parking.

CCTV Enforcement is for parking controls where there are fixed cameras and mobile CCTV units mainly for the school 'Keep Clear' markings. Moving contraventions such as banned turns, no entry signs, no motor vehicle signs, yellow box markings (no TMO required), bus lanes etc. are also enforced by the CCTV Enforcement Section. For practical reasons width and height restrictions and lorry ban areas are not normally enforced.

Speed restrictions such as 20mph zones require TMOs but enforcement of these restrictions has not been decriminalised.

7.2.4 Road danger perception

The analysis of accident data can provide some evidence of road danger, particularly at those busy junctions on main routes which have few personal injuries involving pedestrian or cyclist. This is evident in the analysis carried out in the subsequent sections that identified the worst performing junctions and links within the Borough.

Key areas for investigating a reduction in the perception of road danger are the A23 Purley Way between Mitcham Road and Waddon Road, Denning Avenue and Edgehill plus the Fiveways junction. This investigation should determine whether the low accident rates are a result of these modes avoiding the area and if so establish that the alternative route is sufficiently direct as to not discourage these modes. This is particularly the case for cyclists given the location of these links and nodes on LCN+. The Park Lane/ Croydon flyover/ Barclays Road gyratory could also be improved in terms of creating a less threatening environment for pedestrians and cyclists.

Locations where pedestrians and cyclists seemed to be most vulnerable tended to correlate, with key areas in need of improvement being:

- London Road (North Borough Road to Thornton Heath);
- High Street (Katherine Street to Coombe Road);
- Lower Addiscombe Road (Cherry Orchard Road to Blackhorse Road);
- Brighton Road (Junction Road to Sanderstead Road);
- Old Town roundabout;
- George Street j/w Park Lane and Wellesley Road.

The comparison of cycle related road traffic injuries accidents with the number of cyclists suggests they are a high risk group. If cycling is to be encouraged, more needs to be done to improve safety but also open up routes which cyclists may currently perceive to be too dangerous. This can only be achieved through greater infrastructure investment along routes but also training to help these road users make more informed decisions about risk.

A number of the links highlighted above lie on important cycle/ pedestrian routes into the CMC and should be treated as a priority for improvement. Traffic reduction may in some cases be the only

solution but this will need to be balanced against the current requirement for vehicular access to car parks and through routes.

7.2.5 Awareness campaigns & education programmes

The Council's championing of awareness campaigns and educational programmes was a key component in achieving the reduction in personal injury collisions over the last 10 years. Croydon Council works in close partnership with the Metropolitan Police, local schools, TfL's Road Safety Unit, the emergency services, the Driver Instructor Association (which has its headquarters in Croydon), the Institute for Advanced Motorists, and the London Safety Camera Partnership amongst others. Some of the initiatives supported within the Borough include:

- **Young Drivers Awareness Scheme:** a programme to raise awareness among drivers between 16 and 19 years old. This age group proportionately kill more pedestrians than any other age group and also has the highest number of passenger deaths. The scheme includes a training programme (including in-car safety), discussions, street speed checks and car simulator tests.
- **BikeSafe:** an initiative that invites motorcyclists, moped and scooter riders to participate in Rider Skills Days that offer assessment on present skills, and advice to help make their riding in London safer and more enjoyable. As well as professional riding techniques, topics covered include the system of motorcycle control, collision causation factors and security. The Rider Skills Days are run during the week and at weekends, by highly qualified police motorcyclists passing on their wealth of knowledge and experience in a friendly and informal manner.
- **JRSO (Junior Road Safety Officers):** a programme to encourage young children to engage with their peers and deliver serious road safety messages in a fun and lively way, through assemblies and competitions, and supported by Road Safety Officers. Primary 6 pupils are appointed or selected for their primary school, usually for a one year period, but this may vary as there is no one correct way to run JRSO and different schools may have their own ways of working depending on what best suits them. There are currently 170 JRSOs across 97 primary schools.
- **Kerbcraft:** a practical child pedestrian training scheme designed to teach pedestrian skills to 5 to 7 year olds, by means of practical road-side training rather than teaching in the classroom. It is built around teaching three skills: choosing safe places and routes, crossing safely at parked cars and crossing safely near junctions. Children are taught in the road environment near their schools, in pairs or groups of three children, by trained volunteers.
- **Theatre in Education (Now You See Me, Now You Don't):** a programme which objective is to get pupils to understand that they have control and influence over their own and other people's safety and to increase road safety knowledge and to explore the factors that lead to a crash.
- **Community Road Watch:** a scheme that engages local residents to identify problems within their area and use speed guns to monitor and record the speed of passing vehicles. Details of speeding vehicles are recorded and information is cross-referenced with the DVLA database. The police send warning letters to drivers telling them that they have been observed speeding and asking them to comply with speed limits in the future. The scheme is currently only running in the wards of Kenley and Sanderstead.

Additional to these, institutions such as the London Road Safety Unit (LRSU) run other multimedia campaigns involving TV, radio, billboards, bus-back advertising and online activity, and also smaller promotional campaigns involving leaflets, posters, postcards and other hand-outs.

7.3 What are the options for change?

7.3.1 Personal injury collision reduction targets [RS.01]

Meeting future road safety targets will be a challenge in Croydon given the predicted increase in travel brought about by redevelopment of the areas in and around the CMC. This growth will result in more road users particularly those that walk and cycle whose incentive and propensity to carry on using these modes will depend on the safety of the routes they use.

Road safety initiatives should therefore form a key element of this Strategy and include engineering solutions, enforcement and education and awareness campaigns. These initiatives focus both at reducing the severity of personal injury collisions but also reducing the perception of road danger which combined will help support the growth in walking and cycling from its low base.

7.3.2 Severity of personal injury collisions [RS.02]

A starting point for reducing the severity of personal injury collisions is to create a safer environment for all road users. Engineering solutions that help to achieve this include:

- improved junction design;
- better pedestrian crossing facilities;
- new street designs/ urban realm (shared space);
- reduce vehicle speeds on residential roads to below 20mph (20mph zones); and
- better street lighting.

Increased road safety can be achieved with improved junction design. Redesigning junction's layouts according to standards, increasing pedestrian provisions, utilising appropriate street furniture (e.g. passively safe signs) and installing Advanced Stop Lines (ASLs) for cyclists all contribute to reduce the number and severity of casualties. Improved pedestrian crossing facilities could include the use of pedestrian countdown timers in wide and busy streets such as those of the town centre.

Designing new "Home Zones" would be a step towards enhancing the urban realm as they attempt to achieve a balance between vehicular traffic and other more vulnerable road users. Home Zones work through the physical alteration of streets and roads in an area. These alterations force motorists to drive with greater care and at lower speeds. Many countries support this with legislation allowing the Home Zones to enforce a reduced speed limit of 10 miles an hour. Benches, flower beds, play areas, lamp posts, fences and trees used to alter the streets and roads offer many additional community benefits to the Home Zones and are considered to enhance the beauty of an area and increase the housing prices.

Additionally, the reduction of speeds in roads need to include traffic calming measures since they are effective fulfilling this objective. These measures are unpopular with councillors and residents. The Government, however, has recently allowed councils to put in place 20mph schemes over groups of streets without the need for traffic calming measures such as speed humps. A drawback of 20mph zones is the requirement of excessive signage that would lead to a cluttered street.

Road activated speed signs have proved effectiveness in reducing speeds in residential areas. This are recommended as they would be suitable for the immediate/ short term of this Strategy.

7.3.3 Vehicle speed enforcement [RS.03]

Enforcement is an important element of road safety. A way of improving it is the implementation of SPECS3 average speed cameras, which have been recently approved by the Home Office. These

cameras are suitable for enforcing 20mph limits since spot speed detectors fail to determine speeds around 20mph. However, these sets of cameras need to be placed preferably on longer roads without a high proportion of movements in and out of the side roads.

Additionally, the Community Road Watch scheme could be extended to the rest of the Borough, after showing positive results in the Kenley and Sanderstead wards. This campaign not only helps local residents to become aware of speeds by measuring them from outside their vehicles, but also is a way of aiding to enforce speed limits.

7.3.4 Road danger perception [RS.04]

Reducing a perception of road danger will be difficult to implement as there is no easy way to assess the risk and then monitor its impact. However, some methods to achieve this could include:

- a review of local resident correspondence which raises local road safety concerns and may help identify areas of severance or poor permeability; or
- some other assessment process such as that used by 'Living Streets' or the Transport Research Laboratory (TRL) Pedestrian Environment Review System (PERS); or
- site audits to establish the broad travelling conditions for all modes; including an indication of poor road surfacing, road markings conditions, visibility and/or excessive vehicle speeds, high levels of congestion, lack of footway provision, cyclists on footways, complex traffic movements at junctions, and locations of high pedestrian crossing demand such as those on routes to schools, parks and retail areas.

Likewise, every measure or scheme implemented as an "engineering solution" in order to make an area, a link or a junction safer, will count towards reducing the perception of road danger.

7.3.5 Education programmes & awareness campaigns [RS.05]

Education and awareness measures are particularly suitable for cyclists and those using powered two wheelers as it would allow these users to better assess the risks and reduce the instances of accidents attributed to a failure to look properly, careless driving and disobedience of traffic rules.

Previous campaigns have proved to have had excellent results and in order to achieve further reductions in the accident rates, Croydon Council should continue to put emphasis in the areas of education/ awareness campaigns and working together with different institutions to reach a larger proportion of the population.