LP/E12/12

Transport for South Hampshire and Isle of Wight

Evidence Base

Gosport Borough Local Plan (2011-2029)

Report for Gosport Borough Council

March 2014

SYSTRA

Document Control

Project Title:	Transport for South Hampshire Isle of Wight Evidence Base
SYSTRA Project Number:	102318
Document Type:	Gosport Development Allocation Report
Directory & File Name:	J:\C39344_Transport_for_SOUTH_HAMPSHIRE_Model_Suite\MVA_Work\82 Gosport_Local_Plan\Report

Document Approval

Primary Author:	Emma Bowles
Other Author(s):	Chris Whitehead, Michael Lloyd
Reviewer(s):	Ian Burden
Formatted by:	EB/ML/CW

Distribution

Issue	Date	Distribution	Comments
1	07/11/13	GBC	Draft
2	08/11/13	GBC	Corrections in Mode Share section 3.3.2 & 3.3.4 & 6.1.6
3	19/12/13	GBC	Updated in response to GBC comments on v2
4	14/03/14	GBC	Revised Front Cover and conversion to SYSTRA

Contents

Tables

Figures

Appendices

1 Introduction

1.1 SRTM Background

1.1.1 SYSTRA was commissioned, as part of a wider team, to support Transport for South Hampshire Isle of Wight (TfSHIoW) with the development and application of a Sub-Regional Transport Model Suite (SRTM) for this nationally important area.

1.1.2 The SRTM has been developed to support a wide-ranging set of interventions across the TfSHIoW sub-region, and is specifically required to be capable of:

- forecasting changes in travel demand, road traffic, public transport patronage and active mode use over time as a result of changing economic conditions, land-use policies and development, and transport improvement and interventions;
- testing the impacts of land-use and transport policies and strategies within a relatively short model run time; and
- testing the impacts of individual transport interventions in the increased detail necessary for preparing submissions for inclusion in funding programmes.

1.1.3 A glossary of the common terms used in relation to SRTM and this study is provided as Appendix A.

1.2 Study Background

1.2.1 Gosport Borough Council (GBC) is preparing its Local Plan (Allocations) for adoption in 2014. The SRTM is to be used to help inform and evidence the plan by assessing the transport impacts of the current land use and transport proposals in the sub-region.

1.2.2 The study replaces the transport assessments undertaken by Peter Brett in 2009 and 2010 (Assessing the Impact of the Harbour Authorities LDF Proposals on the Strategic Highway Network). In particular it will update the quantum of development proposed within Gosport to 2029 and reflect the latest proposals for the Welborne Development which have a significant impact upon M27 and access to the Fareham-Gosport Peninsula. The model will also re-assess the impact of development in Gosport upon the motorway in order to address the concerns the Highways Agency have raised in respect of the draft Local Plan.

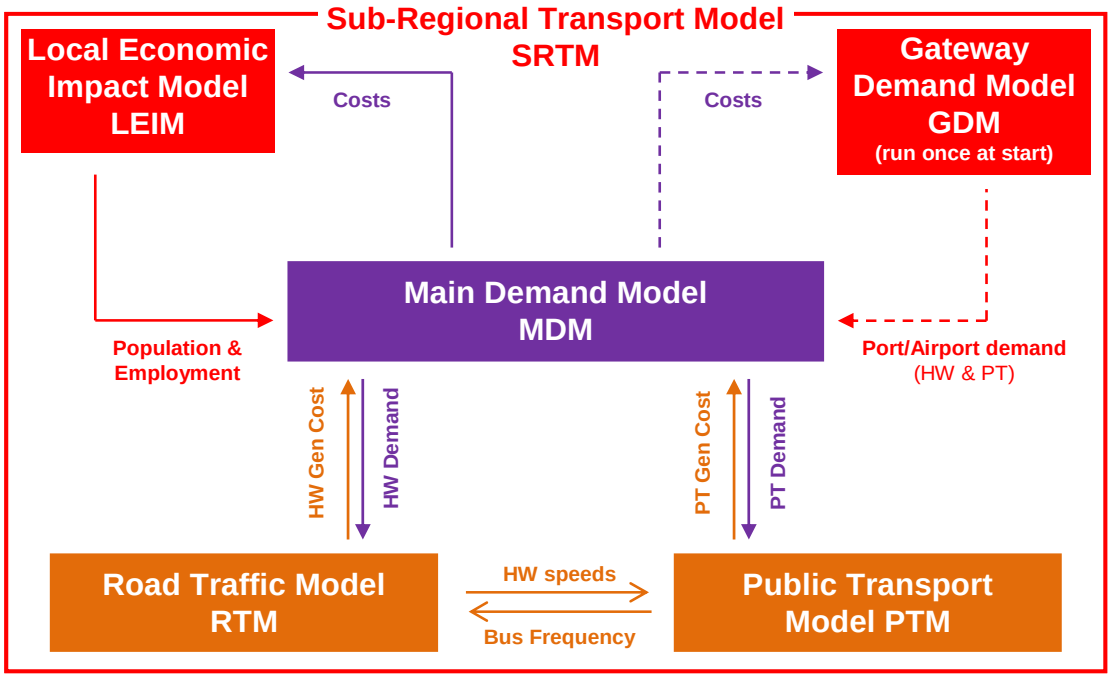
1.2.3 The study has been undertaken in consultation with Hampshire County Council (HCC) Officers to ensure the study approach is consistent with their requirements for assessing the impacts of the allocation sites.

1.3 Sub Regional Transport Model Context and Scope

1.3.1 The SRTM is a suite of linked models comprising the following components as shown in Figure 1.1 (all components have been used in the Gosport Local Plan modelling):

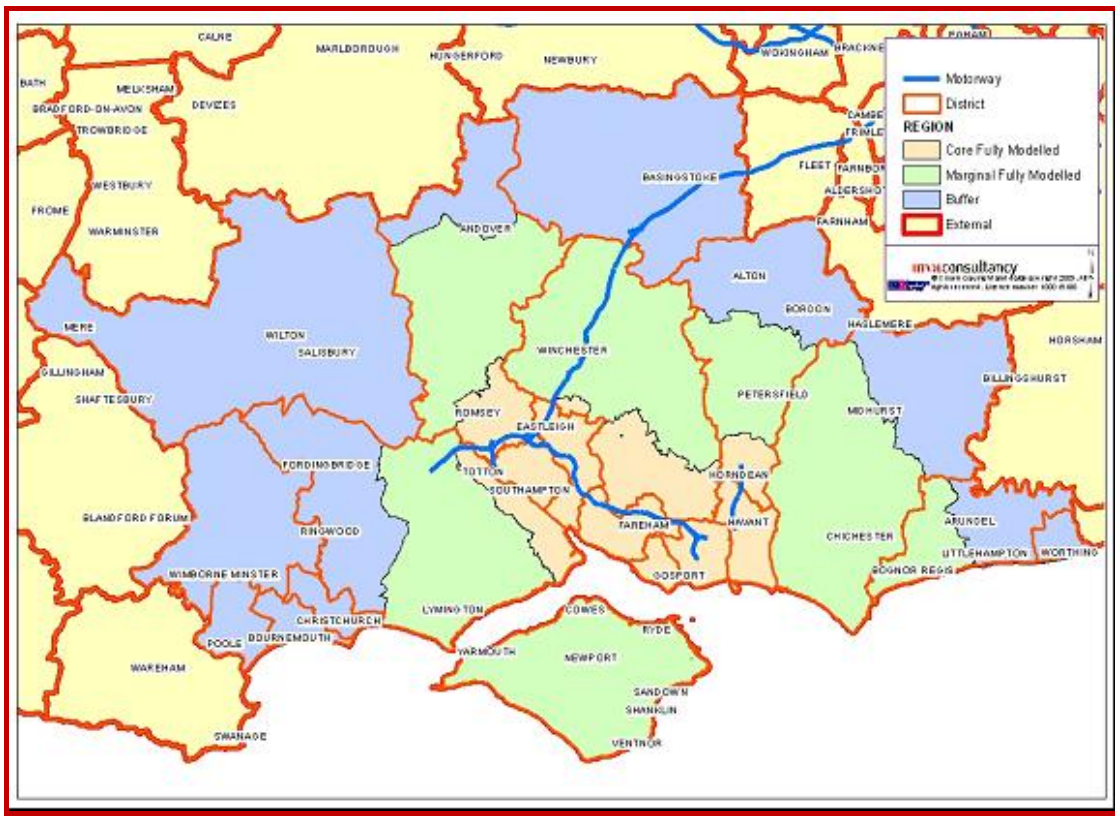
- the Main Demand Model (MDM) which predicts when (time of day), where (destination choice) and how (choice of mode) journeys are made;
- the Gateway Demand Model (GDM) which predicts demand for travel from ports and airports;
- the Road Traffic Model (RTM) which determines the routes taken by vehicles through the road network and journey times, accounting for congestion;
- the Public Transport Model (PTM) which determines routes and services chosen by public transport passengers; and
- a Local Economic Impact Model (LEIM) which uses inputs including transport costs to forecast the quantum and location of households, populations and jobs.

Figure 1.1 TfSHIoW Sub-Regional Transport Model



1.3.2 The modelled area of the SRTM is divided into four regions, shown in Figure 1.2, which differ by zone aggregation and modelling detail. Gosport Borough is within the Core Fully Modelled Area.

Figure 1.2 Study Area of the SRTM



1.3.3 Travel in the model is aggregated into zones which therefore determine the spatial detail available. The definition of zones takes account of barriers (rivers, railways, motorways) as well as administrative and planning data boundaries (TfSHIoW zones are aggregations of Census Output Areas in the fully modelled area and wards elsewhere). In addition, zones account for land use types, access points onto the road network as well as respecting screenlines for trip matrix validation. For public transport catchment areas for rail stations and bus stops fare boundaries were also considered and additional zones are included for the ports and airports.

1.3.4 In accordance with guidance three weekday periods are modelled in the SRTM:

- AM peak: busiest hour between 0700 and 1000, (defined as 38.2% of the three hours for Highway and 40% for Public Transport);
- Inter peak: average of 1000 to 1600 (i.e. 16.7% of the six hours for both modes); and
- PM peak: busiest hour between 1600 and 1900, (defined as 35.8% of the three hours for Highway and 40% for Public Transport).

1.3.5 All model periods are included in each model run but only the AM and PM peaks are reported within this report.

1.3.6 The SRTM model represents conditions up to the year 2036. Known developments and committed transport schemes are included within the models' reference case scenarios (2014, 2019, 2026, 2031 and 2036) to provide the most accurate representation of future year conditions. A list of the known larger developments and committed (funded) highway schemes included in the Reference Cases is provided as Appendix B.

1.3.7 In addition to committed sites (where the full 100% uptake of development is forced), "permissible" sites are included within the Reference Cases. These refer to those locations identified as suitable for future development but may or may not have yet been subject to planning approval. The location and maximum land use quantum of the permissible sites are tied to the inputs originally provided by each Local Planning Authority during model development (2010). In the Reference Cases the take up of permissible developments is determined by LEIM based on the local conditions (the relative 'attractiveness' of the development). **Note - for specific development scheme related model runs (adaptions of the standard Reference Cases) it is possible to force the uptake of development at individual model zones as identified in Chapter 2.**

1.3.8 LEIM controls the level of overall development take-up within the model in accordance with TEMPRO employment and population targets for the sub-region which conforms with WEBTAG. This is equivalent to allowing for background traffic growth within the modelling process.

1.3.9 The version of SRTM utilised in this study includes the updated methodology for determining projected residential trip rates. The revised methodology was prepared in response to comments by both HCC and HA that the residential trips rates from the original methodology appeared low. The development of the revised trip rate methodology took into account comparable residential site data, extracted from TRICS, both in terms of actual trips rates and the profile of trips rates within the three hour AM and PM peak periods.

2 Modelling Gosport Allocation Sites in SRTM

2.1 Development Scenarios

2.1.1 This chapter identifies the overall planning assumptions for the draft site allocations and describes how the SRTM was adapted to replicate future forecast conditions.

2.1.2 This study has required the creation of three development scenarios, with results assessing the differences between them. The scenarios are:

- **Scenario 1 – Do Minimum 2031 – Without Gosport Local Plan Development.** All completed and committed developments in Gosport as at 31st March 2013, plus Daedalus and Welborne (September 2013 assumptions) and all other development in accordance with the reference case.
- **Scenario 2 – Do Something 2031 – With Gosport Local Plan Development.** As scenario 1 plus permissible developments planned in Gosport.
- **Scenario 3 – Waterfront Do Minimum 2031 – With Gosport Local Plan Development excluding Waterfront.** As scenario 2 with Waterfront omitted to enable impacts of Waterfront to be separately identified by comparison of scenarios 2 and 3.

2.1.3 The Gosport Local Plan covers the period up to 2029 and the closest year to which SRTM can be run is 2031. The model accounts for all reference cases up to 2026 (ref. Appendix B) and forecasts traffic flows up to 2031.

2.1.4 Figure 2.1 below summarises the components of each of the three scenarios and the following sections provide a breakdown of the key processes, inputs and outputs.

Model Run	Year	Name	Gosport Landuse						Highway				PT				Notes
			Completions	Committed	Daedalus	Welborne (as per Sept '13 assumptions)	Gosport Local Plan	Waterfront	Committed	M27 J10 (Welborne)	Newgate Lane South	Stubbington Bypass	Committed (LSTF, BBAF)	BRT Extensions to Welborne	BRT Extension to Rowner	BRT Extension Rowner to Ferry (on-street)	
1	2031	Local Plan Do Min	✓	✓	✓	✓	×	×	✓	✓	×	×	✓	✓	✓	✓	
2	2031	Local Plan Do Some	✓	✓	✓	✓	✓	✓	✓	✓	×	×	✓	✓	✓	✓	Also represents the Waterfront 'Do Something' scenario
3	2031	Waterfront Do Min	✓	✓	✓	✓	✓	×	✓	✓	×	×	✓	✓	✓	✓	

Figure 2.1 Model Components

2.1.5 There are a number of model inputs that will be common to all scenarios including all network assumptions. The differences between the scenarios will be purely based on the development inputs which feed into the LEIM component of SRTM. LEIM operates by using (amongst others) two sets of landuse (floorspace) inputs defined as being either:

- Exogenous – These developments are forced to occur at the size and time specified regardless of other model influences
- Permissible – (not the same as with planning permission) These are sites where development has been identified as being planned and possible but the model determines where, when and how quickly these developments are actually constructed and occupied based on their relative cost and accessibility and within the over-arching development constraints defined in TEMPRO.

2.2 Input Assumptions Common to all Scenarios

2.2.1 All development scenarios modelled are an adaption of the 2010 SRTM Base Reference Case with known larger developments and committed (funded) highway schemes added from the reference scenarios for 2014, 2019 and 2026 as listed in Appendix B. The scenarios are assumed to be identical up to 2026.

Welborne Development

2.2.2 The Welborne development is located within Fareham but the scale and location of the development is expected to have a significant impact on M27 between junctions 9-11 that in turn may influence trips originating/destined for Gosport. The exact quantum and transport infrastructure associated to the development is still to be finalised by FBC. However, at a meeting of 02/10/13 attended by GBC and HCC Officers it was agreed that the most recently published proposed Welborne development quantum and high level infrastructure proposals would be included in all three development Scenario model runs.

2.2.3 More specifically the development quantum modelled at Welborne will be 6500 dwellings and 112,000sqm employment landuse. The M27 J10 will be upgraded to all movements (i.e. inclusion of west facing slip roads). There will be no direct link from the Welborne development to M27 J11. BRT services assumed to serve Welborne were also included.

Daedalus Related Development

2.2.4 The most substantial known committed development within Gosport Borough is at Daedalus. This, largely employment based development, straddles the border with Fareham and received planning permission in 2012. The Daedalus development quantum by landuse is summarised in Table 2.1.

Table 2.1 Daedalus Development Quantum (includes retained existing floorspace)

Daedalus Development	Resi (HHds)	Employment (m^2)			Retail (m^2)	Leisure (m^2)
		B1	B2	B8		
Within Gosport	350	56,244	0	18,748	1,075	12,480
Within Fareham	0	37,652	0	12,550	0	1,710
Total	**350**	**93,896**	**0**	**31,298**	**1,075**	**14,190**

Source: GBC 26/09/13

2.2.5 Highway schemes designed to mitigate the impacts of Daedalus on Newgate Lane (between Tanners Lane and Longfield Avenue), at Peel Common roundabout and to improve access to Gosport have been developed by HCC and are included as committed schemes in this study.

Gosport Completions and Committed Sites

2.2.6 The SRTM base year is 2010. In order to account for completions for the intervening period to 2013, and planning permissions beyond 2013 we were provided the relevant planning data from GBC. These are be coded as Exogenous development within LEIM and a summary of the totals by land use is provided in Table 2.2 (completions) and Table 2.3 (committed) below with a full breakdown by zone provided in Appendix C.

Table 2.2 GBC Completions (2010-13)

Landuse	Total
Dwellings (units)	457
Retail (m^2)	556
Office (m^2)	0
Industrial (m^2)	1521
Warehousing (m^2)	0
Education (m^2)	1053
Hotel (m^2)	0
Healthcare (m^2)	692
Leisure (m^2)	3884

Source: GBC 26/09/13

Table 2.3 GBC Committed beyond 2013

Landuse	Total exc. Daedalus	Total inc. Daedalus
Dwellings (units)	488	838
Retail (m^2)	7101	8,176
Office (m^2)	392	14,453
Industrial (m^2)	3590	41,673
Warehousing (m^2)	0	13,048
Education (m^2)	338	338
Hotel (m^2)	2416	10,736
Healthcare (m^2)	0	1,839
Leisure (m^2)	290	2,611

Source: GBC 26/09/13

Highway/ PT Schemes

2.2.7 At the meeting of 02/10/13 it was identified that a number of highway infrastructure schemes both within Gosport and Fareham were now committed (funded) and should therefore be included within the SRTM Reference Case scenarios. The schemes are associated with the developments listed below and the elements of the schemes that can be modelled in SRTM are summarised in Table 2.4:

- Welborne Development
- Daedalus

Table 2.4 Additional Highway/ PT Schemes

Development	Transport Scheme(s)
Welborne Development	■ Upgrade M27 J10 upgraded to all movements ■ Extend existing BRT between Fareham and Welborne ■ New BRT from Welborne to Portsmouth via A27 ■ New BRT from Welborne to Portsmouth via M27 J10 (Fast Track)
Daedalus	■ Newgate Lane (Northern Section) ■ Peel Common roundabout (partial signalisation - interim scheme).
Non-specific	■ Off-carriageway BRT route extended by approx. 1km to Rowner Road and on-carriageway priority improvements between Rowner Road and the Gosport ferry terminal.

2.3 Scenario 1 – Gosport Local Plan Do Minimum 2031 (Without GBC Local Plan Development

2.3.1 Scenario 1 will include all completed and committed developments in Gosport as at 31st March 2013, plus Daedalus and Welborne (September 2013 assumptions) and all other development in accordance with the reference case. It will provide the baseline against which the GBC Local Plan development is assessed. Scenario 1 requires an adapted SRTM Reference Case using the inputs from Section 2.2 above.

2.3.2 The SRTM Reference Case models include for assumed permissible (Section 2.1.5) levels of future development within model zones in accordance with information provided by Local Authorities when the model was originally developed in 2010 (Note: Where known the SRTM does account for any significant changes post 2010 data collection in proposed land use at large strategic sites). To avoid any double counting it was necessary to remove the volume of floorspace equivalent to the draft allocations from the existing Gosport SRTM zones.

2.3.3 Because LEIM controls the overall land use take-up in accordance with TEMPRO targets the take up of permissible floorspace in other model zones (non-Gosport Local Plan zones) may increase in Scenario 1.

2.4 Scenario 2 – Gosport Local Plan Do Something 2031 (With GBC Local Plan Development)

2.4.1 Scenario 2 uses Scenario 1 (section 2.3) as a base to which the Gosport Local Plan development is added. The Gosport sites are modelled as committed (Exogenous) which forces the full use of allocations to be taken up. The land-use categories and quantums modelled are summarised in Table 2.5 below and a breakdown of land use by zone is provided in Appendix C. The Gosport Local Plan identifies allocations up to 2029, however for the purposes of this model it is assumed that all development will be completed by 2031.

2.4.2 We have utilised the breakdown of land use by modelled zone for the proposed development as provided by GBC and summarised in Table 2.5. The full breakdown of land use by zone is provided in Appendix C. It is assumed that all the development within the borough will be completed by 2031 as the local plan covers implementation until 2029.

2.4.3 SRTM Trip Rates are applied to the development sites. SRTM trip rates are calculated and applied by mode, time period, purpose, car availability and person type.

Table 2.5 GBC Local Plan Allocation Sites (inc. & exc. Waterfront)

Landuse	Sc2 Total inc. Waterfront	Sc3 Total exc. Waterfront
Dwellings (units)	1,794	1,094
Retail (m^2)	500	500
Office (m^2)	2,250	2,250
Industrial (m^2)	27,115	27,115
Warehousing (m^2)	0	0
Education (m^2)	0	0
Hotel (m^2)	0	0
Healthcare (m^2)	0	0
Leisure (m^2)	500	500

Source: GBC 26/09/13

2.4.4 It is understood that there are no identified transport schemes within the Borough to be included as part of the Scenario 2 or 3 tests, other than those already included in Scenario 1 (Section 2.3).

2.5 Scenario 3 – Waterfront Do Minimum 2031 (GBC Local Plan Development excluding Waterfront)

2.5.1 The Highways Agency (HA) has requested specific information on the impact of the Waterfront development on the motorway network and the Borough Council wishes to assess the impact on local roads. To enable this impact to be assessed we have run and report on an additional scenario. The Waterfront Scenario 3 is identical to the Scenario 2 (Section 2.4) except that all new development at the Waterfront site is removed. The landuse for Scenario 3 is also summarised in Table 2.5

2.5.2 The Waterfront Scenario 3 is compared against Scenario 2 to enable the impacts of Waterfront to be isolated.

3 Main Demand Model and LEIM Results

3.1 Introduction

3.1.1 This section identifies the forecasts produced by the MDM and LEIM modules of SRTM for the Local Plan scenarios including outputs for forecast population, households, jobs, and emissions.

3.1.2 The absolute values are provided for each of the three scenarios in addition to the difference between the scenarios to isolate the impacts of the Local Plan development as a whole and the Waterfront development in isolation:

- Scenario 1 - Do Minimum 2031 – Without Gosport Local Plan Development
- Scenario 2 - Do Something 2031 – With Gosport Local Plan Development
- Scenario 3 - Waterfront Do Minimum 2031 – With Gosport Local Plan Development excluding Waterfront

3.2 Population, Dwellings, Jobs

3.2.1 The LEIM module of SRTM controls the level of overall development take-up within the model in accordance with TEMPRO employment and population targets for the sub-region which conforms with WebTAG. This is equivalent to allowing for background traffic growth within the modelling process. Therefore, if there is an increase in one district within the model there may be decreases within other districts.

3.2.2 In Scenario 1 the Gosport Local Plan development quantum is not included, except for completions and committed schemes. In Scenario 2 the Gosport Local Plan development is fixed with development uptake by 2031 forced at 100% to ensure the full impact of the development trips can be quantified. The uptake of all other non-committed developments (permissible sites in LEIM terminology) within the model is determined by LEIM based on the local conditions (the relative 'attractiveness' of the development).

3.2.3 Scenario 3 is the same as Scenario 2 except that the Waterfront development is not included as a committed nor permissible development i.e. it is not included at all.

3.2.4 All three scenarios remain controlled to TEMPRO employment and population targets. It therefore follows that if the Local Plan development is fixed it would draw population/ employment from other districts when compared to the Scenario 1. This is why an increase in Gosport can result in a decrease in Portsmouth or other areas in the forecast years.

3.2.5 It should be stressed that the comparisons are based on two forecast year scenarios representing alternative trajectories of development for comparison purposes rather than representing a sudden change from the Gosport Local Plan sites opening.

3.2.1 Tables 3.1 to 3.3 show the 2031 LEIM forecasts for the population, number of dwellings and number of jobs within Gosport as a whole and for the surrounding Districts. For the full quantum of Local Plan development a population increase of approximately 3400 and an increase in jobs of 770 is forecast.

Table 3.1 Forecast Change in Population (2031)

District	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Difference (S2 – S1)	Difference (S2 – S3)
East Hants (Core)	21,888	21,809	21,834	-79	-25
Eastleigh	142,929	142,793	142,830	-136	-37
Fareham	126,307	125,803	125,965	-504	-162
Gosport	82,845	86,431	85,352	3,386	1,079
Havant	126,972	126,486	126,636	-486	-150
New Forest (Core)	65,784	65,726	65,742	-58	-16
Test Valley (Core)	45,626	45,594	45,603	-32	-9
Winchester (Core)	57,590	57,435	57,481	-155	-46
Portsmouth	250,829	249,925	250,197	-904	-272
Southampton	260,204	259,992	260,051	-212	-59
Total	**1,180,975**	**1,181,944**	**1,181,690**	**1,020**	**254**

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 3.2 Forecast Change in Dwellings (2031)

District	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Difference (S2 – S1)	Difference (S2 – S3)
East Hants (Core)	9,437	9,399	9,412	-38	-13
Eastleigh	63,874	63,824	63,837	-50	-13
Fareham	55,613	55,343	55,438	-270	-95
Gosport	36,562	38,184	37,679	1,622	505
Havant	55,108	54,867	54,948	-241	-81
New Forest (Core)	28,349	28,331	28,335	-18	-4
Test Valley (Core)	19,856	19,846	19,847	-10	-1
Winchester (Core)	24,742	24,663	24,690	-79	-27
Portsmouth	110,493	110,062	110,200	-431	-138
Southampton	109,770	109,693	109,716	-77	-23
Total	**513,804**	**514,212**	**514,102**	**408**	**110**

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 3.3 Forecast Change in Jobs (2031)

District	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Difference (S2 – S1)	Difference (S2 – S3)
East Hants (Core)	4,122	4,112	4,111	-10	1
Eastleigh	58,242	58,208	58,214	-34	-6
Fareham	50,824	50,744	50,736	-80	8
Gosport	20,179	20,947	20,888	768	59
Havant	42,778	42,669	42,669	-109	0
New Forest (Core)	17,002	16,994	16,995	-8	-1
Test Valley (Core)	19,097	19,094	19,095	-3	-1
Winchester (Core)	21,822	21,772	21,773	-50	-1
Portsmouth	110,144	109,912	109,904	-232	8
Southampton	116,743	116,696	116,707	-47	-11
Total	**460,953**	**461,148**	**461,092**	**195**	**56**

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

3.3 Demand Model (MDM) Results

3.3.1 Table 3-4 summarises the total person trips and percentage mode share to/from Gosport for a 24hr period for each of the three scenarios.

3.3.2 There are approximately 17,500 additional person trips to/from and within Gosport across a 24 hour period in the Local Plan scenario (Scenario 2) compared to the without the Local Plan development plan (Scenario 1). This represents an increase of 6.5%. Of these the inclusion of the Waterfront development accounts for a difference of 3,400.

3.3.3 The mode share of journeys to, from and within Gosport shifts with the highway absolute proportion dropping by 0.5% and both PT and active modes increasing. This approximately equates to a relative 1% fall in the Highway share, a 1% relative increase in PT share, and a 1.6% increase in Active mode share.

3.3.4 The reduction in Car and increase in Active mode splits suggests a greater level of containment for trips associated to the Local Plan that is consistent with wider network congestion discouraging/ preventing longer distance trips. For all trips to/from Gosport without the Local Plan 45.8% are internal to the Borough. This value increases to 47.2% with the inclusion of the Local Plan trips. This represents a 2.9% increase in the proportion but a 9.6% increase in actual internal trips (up from 123,700 to 135,600 trips across all modes per 24 hours)

Table 3-4 Forecast Daily Person Trips to and from Gosport Borough (All Trips)

	Scenario	To Gosport			From Gosport		
		Car	PT	Active	Car	PT	Active
Absolute	Scenario 1	117225	8731	71577	115942	8727	71503
	Scenario 2	124674	9475	78127	123287	9469	78043
	Scenario 3	123353	9332	76760	121970	9327	76675
%	Scenario 1	59.3%	4.4%	36.2%	59.1%	4.4%	36.4%
	Scenario 2	58.7%	4.5%	36.8%	58.5%	4.5%	37.0%
	Scenario 3	58.9%	4.5%	36.6%	58.6%	4.5%	36.9%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

3.4 Emissions

3.4.1 Tables 3.5 to 3.9 show the forecast emissions (NOx, PM10, HC, CO, Carbon) from the three modelled scenarios. Emission outputs are provided for the modelled region as a whole and for Gosport Borough.

3.4.2 For all five emissions types output by SRTM there is an approximate 5-6% increase in emissions within Gosport Borough as a result of the full Local Plan development quantum. The impact solely attributed to the Waterfront development is an approximate 1.5% increase in reported emissions. The changes in emissions across the wider modelled area are negligible.

Table 3.5 NOx Forecast Emissions (g/12hr)

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
SRTM	5337339	5336512	5335745	-827	0.0%	768	0.0%
Gosport	49355	51964	51280	2609	5.3%	685	1.3%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 3.6 PM10 Forecast Emissions (g/12hr)

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
SRTM	94843	94823	94807	-20	0.0%	15	0.0%
Gosport	789	837	825	48	6.1%	12	1.5%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 3.7 HC Forecast Emissions (g/12hr)

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
SRTM	2941328	2940780	2940201	-549	0.0%	578	0.0%
Gosport	43437	46011	45327	2574	5.9%	683	1.5%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 3.8 CO Forecast Emissions (g/12hr)

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
SRTM	34561377	34552122	34547205	-9255	0.0%	4917	0.0%
Gosport	287337	305606	300647	18269	6.4%	4959	1.6%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 3.9 Carbon Forecast Emissions (g/12hr)

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
SRTM	1971482456	1971224892	1970921478	-257564	0.0%	303414	0.0%
Gosport	21122050	22291643	21985659	1169594	5.5%	305984	1.4%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

4 Highway Model Results

4.1 Introduction

4.1.1 This chapter summarises the Highway outputs for the Local Plan SRTM tests across the Borough as a whole and also for the test isolating the impact of the Waterfront development. All outputs relate to a forecast year of 2031.

4.1.2 Each output provides a comparison of the forecast highway performance in 2031 with and without the planned development allocations:

- Scenario 1 - Do Minimum 2031 – Without Gosport Local Plan Development
- Scenario 2 - Do Something 2031 – With Gosport Local Plan Development
- Scenario 3 - Waterfront Do Minimum 2031 – With Gosport Local Plan Development excluding Waterfront

4.2 Highway Network Performance

4.2.1 Tables Table 4.1 and Table 4.2 summarise key network statistics for the full SRTM core study area for both peak periods. The changes to network performance across the wider SRTM highway network are negligible.

Table 4.1 AM Period (07:00-10:00) SRTM Core Area Network Statistics

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
Vehicle Hr	45548	45554	45535	6	0.01%	11	0.02%
Vehicle Km	1852912	1853337	1852748	425	0.02%	589	0.03%
Ave Speed kph	41.7.	40.7	40.7	1.0	0.02%	0.0	0.00%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 4.2 PM Period (16:00-19:00) SRTM Core Area Network Statistics

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
Vehicle Hr	45272	45271	45234	-1	-0.00%	37	0.08%
Vehicle Km	1873539	1874102	1873661	563	0.03%	441	0.02%
Ave Speed kph	41.4.	41.4	41.4	0.0	0.00%	0.0	0.00%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

4.2.2 The equivalent data for the roads within Gosport Borough is presented in Table 4.3 and Table 4.4) and identify larger proportionate changes where the increases in network usage are concentrated. Vehicle Hours and Vehicle Kilometres both increase by 5-6% between Scenarios 1 and 2 in the AM and PM peak periods, which is consistent with forecasts for other Local Plans. The impact on average speed is minimal with a reduction of approximately 0.5% between Scenarios 1 and 2.

Table 4.3 AM Period (07:00-10:00) Gosport Borough Network Statistics

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
Vehicle Hr	1234	1301	1281	67	5.15%	20	1.54%
Vehicle Km	39138	41158	40609	2,020	4.91%	549	1.33%
Ave Speed kph	31.7	31.6	31.7	-0.1	-0.32%	-0.1	-0.32%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 4.4 PM Period (16:00-19:00) Gosport Borough Network Statistics

	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
Vehicle Hr	1280	1362	1342	82	6.02%	20	1.47%
Vehicle Km	41149	43626	43017	2,477	5.68%	609	1.40%
Ave Speed kph	32.2	32.0	32.1	-0.2	-0.63%	-0.1	-0.31%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

4.3 Highway Link Flows, Delays and Capacity Hotspots

4.3.1 The following paragraphs introduce the type and format of the output plots presented in the remainder of this Chapter and highlight the key impacts of the development traffic on the highway network. The output plots included as Figures 4.1 to 4.66 include a series of views from the wider area to include Gosport and Fareham in addition to views focused on Gosport the individual M27 junctions 9 and 11. Only data that exceeds the thresholds identified in Sections 4.3.2 to 4.3.212 below is included in the figures. For those figures centred on Gosport and showing just the M27 junctions the flow thresholds used have been reduced to provide greater detail given the relatively small changes.

Forecast Traffic Flows and Supressed Demand

4.3.2 The SRTM Highway module (RTM) operates using SATURN software. SATURN replicates and can report on two types of traffic flow; 'Actual' and 'Demand'. **Actual** traffic flow relates to the volume of traffic that can physically progress along a modelled link in the time period modelled taking account link and junction capacities. If a proportion of demand cannot negotiate queues at junction approaches within the one hour assignment period then it does not appear on any downstream links beyond that point. **Demand** traffic flow is the volume of traffic actually assigned to a particular link and can be in excess of link and junction capacity. The difference between Actual and Demand traffic volumes is referred to as "supressed" demand and is the volume of traffic wishing to use a link that cannot due to upstream capacity problems.

4.3.3 In non-congested scenarios Actual and Demand flows would be equal. However, in congested scenarios it can be useful to identify the volume of suppressed traffic to help quantify the scale of congestion and identify suitable mitigation measures. **Except where explicitly identified to the contrary all traffic flows reported in this document are Actual traffic flows**.

4.3.4 Figures 4.1, 4.2 and 4.34, 4.35 show the total hourly flows predicted within the Gosport area for Scenario 1 for the AM and PM peaks respectively and Figures 4.3 and 4.36 shows the corresponding supressed flows (demand flow minus actual flow).

4.3.5 Even excluding Local Plan developments in Gosport it can be seen that there is an element of suppressed traffic on the A32 and B3334 routes toward the M27. The volume of suppressed traffic is even more noticeable on the M27 particularly eastbound between J11 and J12 where the supressed flow in the AM peak exceeds 500PCUs. This suggests that key junctions on the highway network are already forecast to be operating at capacity in 2031 even without Gosport Local Plan traffic (see also Section 4.3.17 to 4.3.21)

4.3.6 Figures 4.8 and 4.13 identify the supressed demand in the AM peak for Scenarios 2 and 3 respectively (Figures 4.41 and 4.46 for the PM peak). With the increase in traffic associated to the full Local Plan development (Scenario 2) there is an increase of up to 10 PCUs in supressed flow by link above those forecast in Scenario 1. As would be expected the increase is supressed traffic solely associated to Waterfront is less than the Local Plan as a whole.

Change in Traffic Flow

4.3.7 Figures 4.4 to 4.7 and 4.9 to 4.12 identify the change in traffic flow in the AM between Scenarios 1 and 2 and between Scenarios 3 and 2 respectively (Figures 4.37 to 4.40 and 4.42 to 4.45 for the PM peak). In addition to enumerating the additional peak hour traffic flows on the network as a result of the planned development sites these plots include for any re-routing of traffic that may result from localised congestion or redistribution of existing trips to the new facilities (e.g. homes, shops, schools etc.). This re-routing shows up most clearly where there are roads losing traffic (blue) next to alternative routes gaining traffic (pink). These plots identify where the net change to traffic flow is most pronounced.

4.3.8 For the flow difference plots, the absolute difference in PCUs is identified adjacent to the appropriate link. Blue lines identify a reduction compared to the non-development scenario and pink/red lines an increase. In addition, the scale of the change is represented graphically with the coloured lines of varying bandwidth. Only flow differences of 10 PCUs or greater are displayed in the plots.

4.3.9 For scenario 2 the changes in traffic flow in both the AM and PM peak periods are relatively modest on the routes into and out of the borough.

4.3.10 In the AM peak (Figures 4.4 to 4.7) there are up to 174 additional trips along the A32 in the centre of Gosport. Traffic leaving the Borough along the B3333 Portsmouth Road shows an increase of between 75 vehicles and 36 vehicles going south to north respectively. Along Rowner Road there is an increase of up to 49 vehicles going westbound and 30 going eastbound. Finally, on the A32 north of Rowner Road there is an increase of approximately 20 vehicles. The flow changes decrease with distance away from Gosport and by the M27 are minimal. This is likely to be an outcome of the congestion on routes towards and on the A27 and M27 and so limiting further traffic volumes and resulting in supressed highway demand. The highway capacity constraints could also be producing a higher level of containment within Gosport whereby jobs within the Borough (e.g. Daedalus) are filled by local residents.

4.3.11 For Scenario 2 in the PM peak (figures 4.37 to 4.40) the flow changes forecast in the AM are of a similar magnitude but in the reverse direction as would be expected. On the B3333 Portsmouth Road there are between 40 and 78 additional vehicles shown entering Gosport from north to south respectively. Along Rowner Road there are up to an additional 58 vehicles going into Gosport and 56 leaving Gosport. Finally, along the A32 there are approximately 33 extra vehicles going south to Gosport.

4.3.12 As expected the flow changes forecast solely in relation to the Waterfront development (Figures 4.9 to 4.12) are lower than for the full Local Plan flows and a similar pattern is observed. On routes to/ from Gosport the biggest flow change in the AM peak is on the B3333 route out of the borough with an increase of 35 PCUs. In the PM peak (figures 4.42 to 4.45) the B3333 carries an additional 27PCUs towards Gosport and Rowner Road an additional 31PCUs. Similarly to the full Local Plan Scenario the flow changes reduce with distance from the Borough and are minimal by M27, probably in part to supressed flows.

Highway Delays

4.3.13 Figures 4.14 to 4.17 and, 4.18 to 4.21, identify the change in link delay (experienced by each vehicle or PCU in seconds) in the AM peak between Scenarios 1 and 2 and between Scenarios 3 and 2 respectively (Figures 4.47 to 4.50 and 4.51 to 4.54 for the PM peak). The reported delays are comprised of both link delay and junction delay. The absolute difference in delay in seconds is identified adjacent to the appropriate link. Blue lines identify a reduction and pink/red lines an increase. In addition, the scale of the change is represented graphically with the coloured lines of varying bandwidth. All delay differences in excess of 1s are displayed in the plots.

4.3.14 The changes in delay in Scenario 2 are relatively small but are consistent with the modest flow changes. For the AM peak in Scenario 2 the largest increase in delay is 14 seconds for traffic going north on the A32 before the junction with Newgate Lane. Other, increases in delay are forecast at the junction of the A32 and Elson Road (2 and 4 seconds), along Newgate Lane to the north of Peel Common Roundabout (13 seconds) and at the junction of Gosport Road (B3334) and Stubbington Lane (13 and 2 seconds) and at the St Margaret's Lane approach to the St Margaret's Roundabout.

4.3.15 For the PM peak the largest change in delay in Scenario 2 is a 9 second increase on the A32 southbound at the junction with Elson Road and a 9 second increase in delay southbound on Newgate Lane at Peel Common Roundabout. There are also delay increases of 6-8s in both directions on B3334 within Stubbington.

4.3.16 For Scenario 3 the scale of the delay changes are less than Scenario 2 but the locations are similar. In the AM Newgate Lane north of Peel Common Roundabout has a forecast increase in delay of 5 seconds while on the A32 northbound prior to the junction with Newgate Lane there is an increase of 8 seconds. At the Gosport Road / May's Lane junction there is an increase in delay of 5 seconds observed. In the PM peak the main increase on Newgate Lane southbound to Peel Common Roundabout (4 seconds) and eastbound on Rowner Road (5 seconds) towards Gosport.

Capacity Hotspots

4.3.17 Figures 4.22 to 4.25, 4.26 to 4.29 and 4.30 to 4.33 identify the capacity hotspots for the AM peak hour for Scenarios 1 to 3 respectively. (Figures 4.55 to 4.58, 4.59 to 4.62 and 4.63 to 4.66 identify the equivalent PM peak hour hotspots). The hotspots are defined in terms of the link Volume to Capacity ratio (V/C). For the V/C plots the performance of the link is identified through the colour of the link as follows:

- > 90% - Pink
- > 100% - Red

4.3.18 If the V/C is near, or in excess of 90%, then the junction will be subject to queuing and delays; a value of 90% is taken as the practical value for design purposes. A value of >100% means that the junction is over capacity and signification queues and delay could occur.

4.3.19 Table 4.5 and Table 4.6 below show the location of key hotspots and the volume over capacity calculation in each of the scenarios for AM and PM respectively.

4.3.20 Within Gosport itself there are only a small number of locations where links/ junctions are approaching capacity, all focussed on the A32. The actual change in the performance between Scenario 1 and Scenario 2 is minimal and consistent with the modest flow changes between scenarios.

4.3.21 Beyond Gosport there is greater congestion forecast. The capacity hotspots match the heavier trafficked routes between Gosport and the A27 and M27. Capacity problems are forecast on the A32 corridor up to the junction with A27. Continuing north the M27 J11 is forecast to be at capacity and the eastbound carriageway on M27 between J11 and J12 has a significantly higher demand flow than it can accommodate. The NW corridor via B3334 and A27 towards M27 J9 is also forecast to experience capacity problems through Stubbington and at St Margaret's and Segensworth roundabouts in addition to J9 itself. However, whilst the additional Gosport Local plan traffic will not help the performance of the capacity hotspots, all hotspots identified were forecast to experience similar congestion in Scenario 1. As noted previously that is consistent with the modest flow changes across the immediate highway network resulting from the Local Plan.

4.3.22 In the Gosport and Fareham vicinity there are 13 junctions or links identified as congestion hot spots in the AM peak and 9 junctions or links are identified in the PM peak. Of these hot spots only two in the AM peak and one in the PM peak experience a measurable change in the volume to capacity ratio and no change exceeds 2%.

Table 4.5 Fareham and Gosport Capacity Hotspots AM

Junction	Capacity Hotspots		
	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft
Avery Lane / A 32 Brockhurst Road (WB)	97%	97%	97%
Newgate Lane / Peel Common Roundabout (NB/SB)	99%/90%	100%/91%	100%/91%
A32 Fareham Road north of Aerodrome Road (NB)	96%	96%	96%
A32 Fareham Road / Wych Lane (NB)	92%	94%	93%
A32 Gosport Road / Newgate Lane (NB)	103%	103%	102%
A32 Gosport Road / A27 Eastern Way (NB/SB)	94%/97%	94%/97%	94%/97%
A27 Eastern Way (EB/WB)	100%/90%	100%/90%	100%/90%
M27 J11 off slip (WB)	99%	100%	100%
M27 J11 Boarhurnt Road	96%	96%	96%
M27 J9 Whiteley Way	101%	101%	101%
M27 J9 EB Off-slip	95%	95%	95%
B3334 Gosport Road / Stubbington Lane (NB)	93%	95%	95%
B3334 Gosport Road / May's Lane (NB)	106%	106%	106%

Table 4.6 Fareham and Gosport Capacity Hotspots PM

Junction	Capacity Hotspots		
	Scenario1 Do Min	Scenario2 GBC Plan	Scenario3 Exc Wft
Avery Lane / A 32 Brockhurst Road (WB)	96%%	96%	96%
Newgate Lane / Peel Common Roundabout (NB/SB)	91%/103%	91%/103%	91%/103%
A32 Gosport Road / Newgate Lane (NB)	95%	95%	95%
A32 Gosport Road / A27 Eastern Way (NB/SB)	100%/99%	100%/99%	100%/99%
A27 Eastern Way (EB/WB)	96%/91%	96%/91%	96%/91%
M27 J11 off slip (WB)	95%	97%	96%
M27 J9 Whiteley Way	101%	101%	101%
M27 J9 EB Off-slip	102%	102%	102%
B3334 Gosport Road / May's Lane (NB/SB)	102%102%	102%/102%	102%/102%

M27 Junctions 9 and 11

4.3.23 In order to better understand the impact of the Gosport Local Plan developments on the M27 junctions 9 and 11 we have provided additional plots that zoom in on these junctions as detailed in the paragraphs below.

4.3.24 The change in flow at Junction 9 and 11 as a result of the Gosport Local Plan is small (Figures 4.6, 4.7, 4.39 and 4.40). Between scenario 2 and scenario 1 in the AM peak hour there are an additional 31 vehicles joining the M27 westbound at Junction 9 with 26 of these vehicles approaching from the south. At junction 11 there is a decrease in the number of vehicles going westbound (25 vehicles) but an increase going eastbound (25 vehicles). At Junction 9 during the PM peak there are an additional 12 vehicles heading southbound on A27. At Junction 11 there is a 10 vehicle increase northbound on A27, the majority of which join M27 eastbound.

4.3.25 The flow changes to isolate the impact of the Waterfront development (Scen 2 v Scen 3) are included in Figures 4.11, 4.12, 4.44 and 4.45. At Junction 9 in the AM peak hour there is an increase of 14 joining M27 westbound. At Junction 11 there is an increase of 15 vehicles joining M27 eastbound but a reduction of 12 vehicles joining M27 westbound. During the PM peak the changes are very small and the flow changes do not exceed 5 vehicles on any of the approaches to either J9 or J11.

4.3.26 In terms of the change in vehicle delay (Figures 4.16,4.17,4.49,4.50) the Gosport Local Plan developments (Scen 2 vs Scen 1) result in very small changes (<2s) at Junctions 9 and 11 which is consistent with the small flow changes. From isolating the impact of the Waterfront development (Scen 2 v Scen 3) the change in delay at Junctions 9 and 11 is even smaller and on a number of approaches results in no change (Figures 4.20,4.21,4.53,4.54).

4.3.27 The V/C plots for M27 Junctions 9 and 11 (Figures 4.24, 25, 28, 29, 32, 33, 57, 58, 61, 62, 65, 66) identify that the impact of the Gosport Local Plan in its entirety and Waterside in isolation is minimal in terms of junction performance. However, the capacity problems present in the without development scenario (Scenario 1) remain:

- J9 Whiteley Way (S/B)
- J9 N/B circulating carriageway
- J9 W/B Off slip
- J11 E/B Off slip

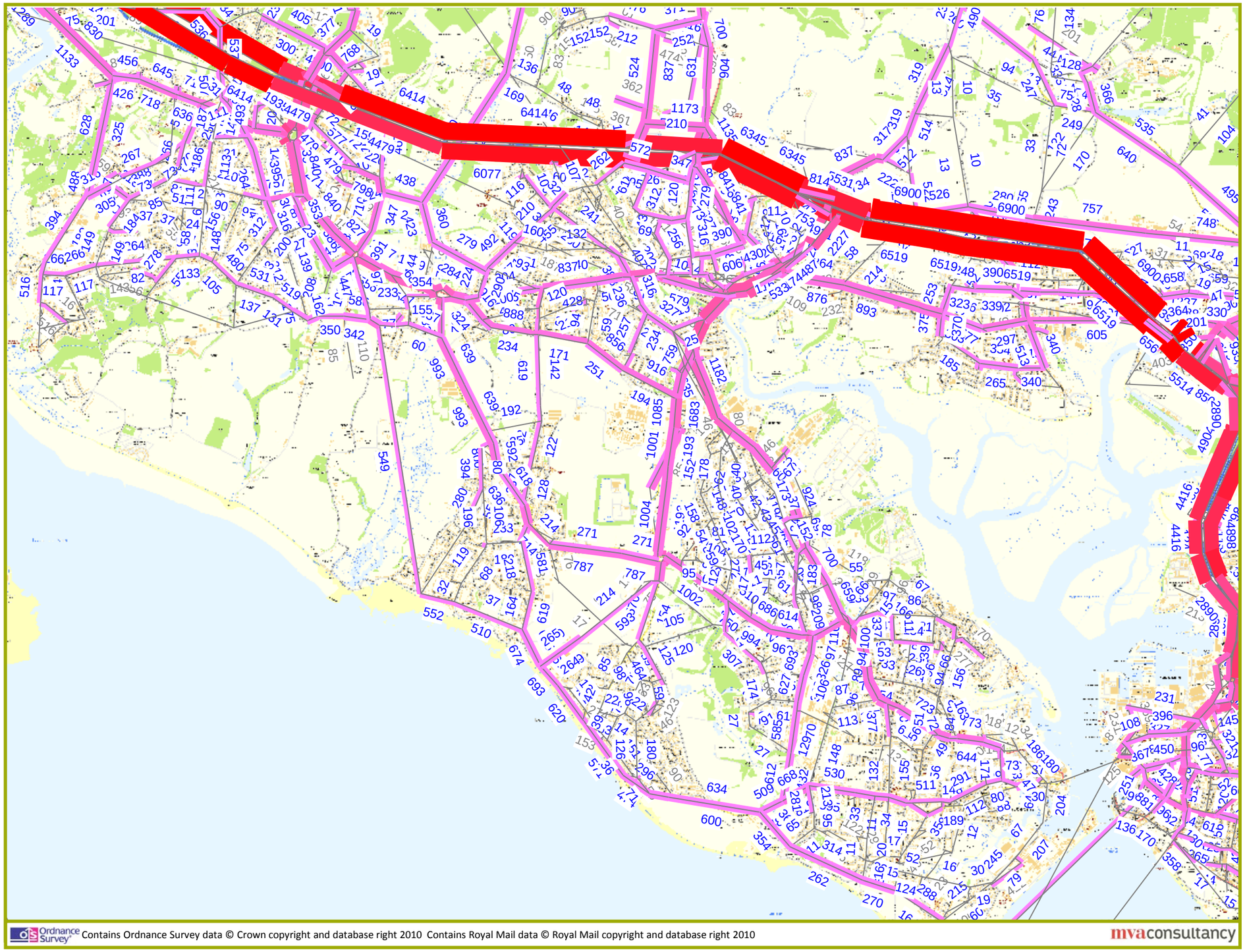


Figure 4.1 - AM Peak Flow (Scenario 1)

Figure 4.2 - AM Peak Flow Gosport zoom (Scenario 1)

Figure 4.3 - AM Peak Supressed Flow (Scenario 1)

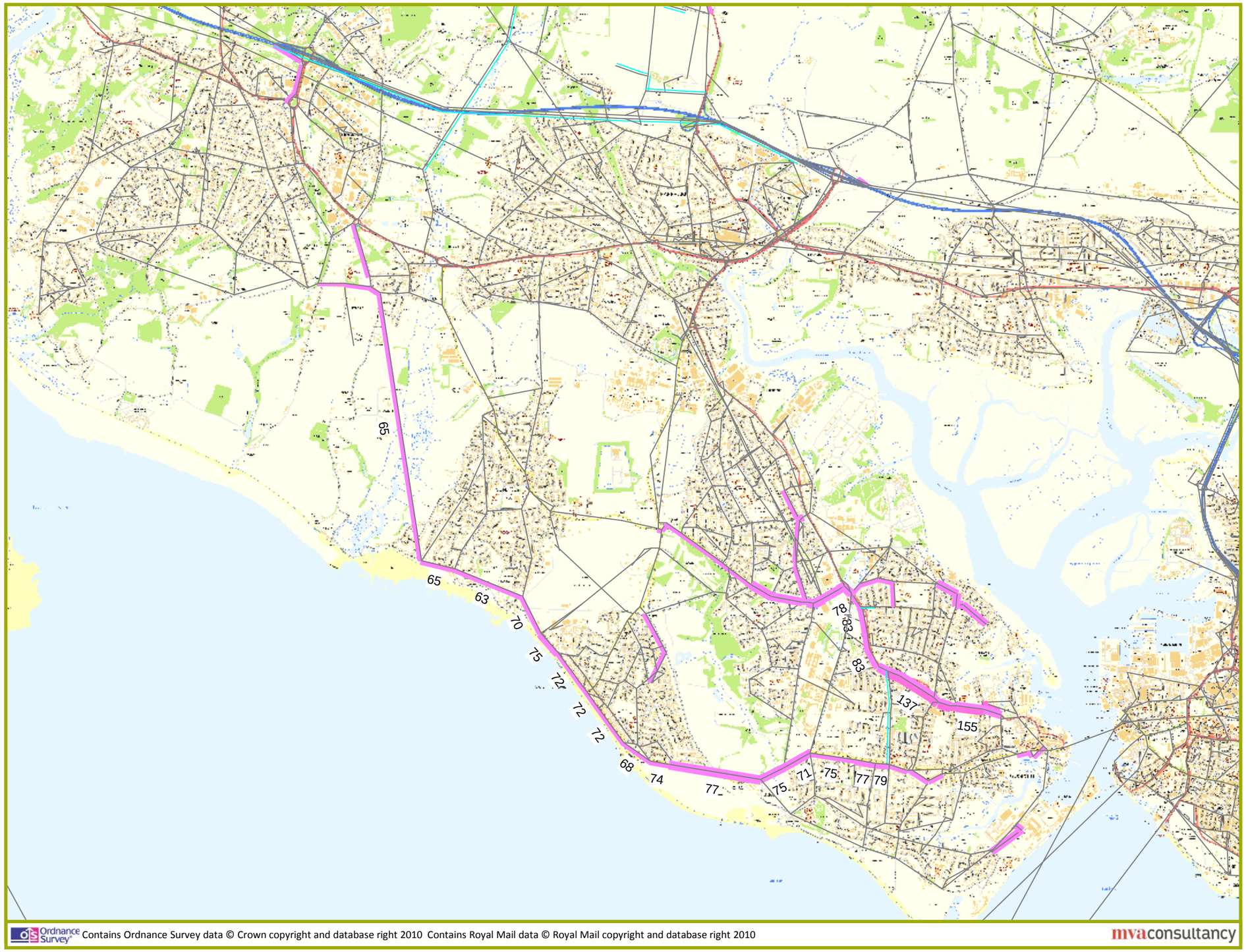


Figure 4.4 - AM Peak Flow Difference (Scenario 2 v Scenario 1)

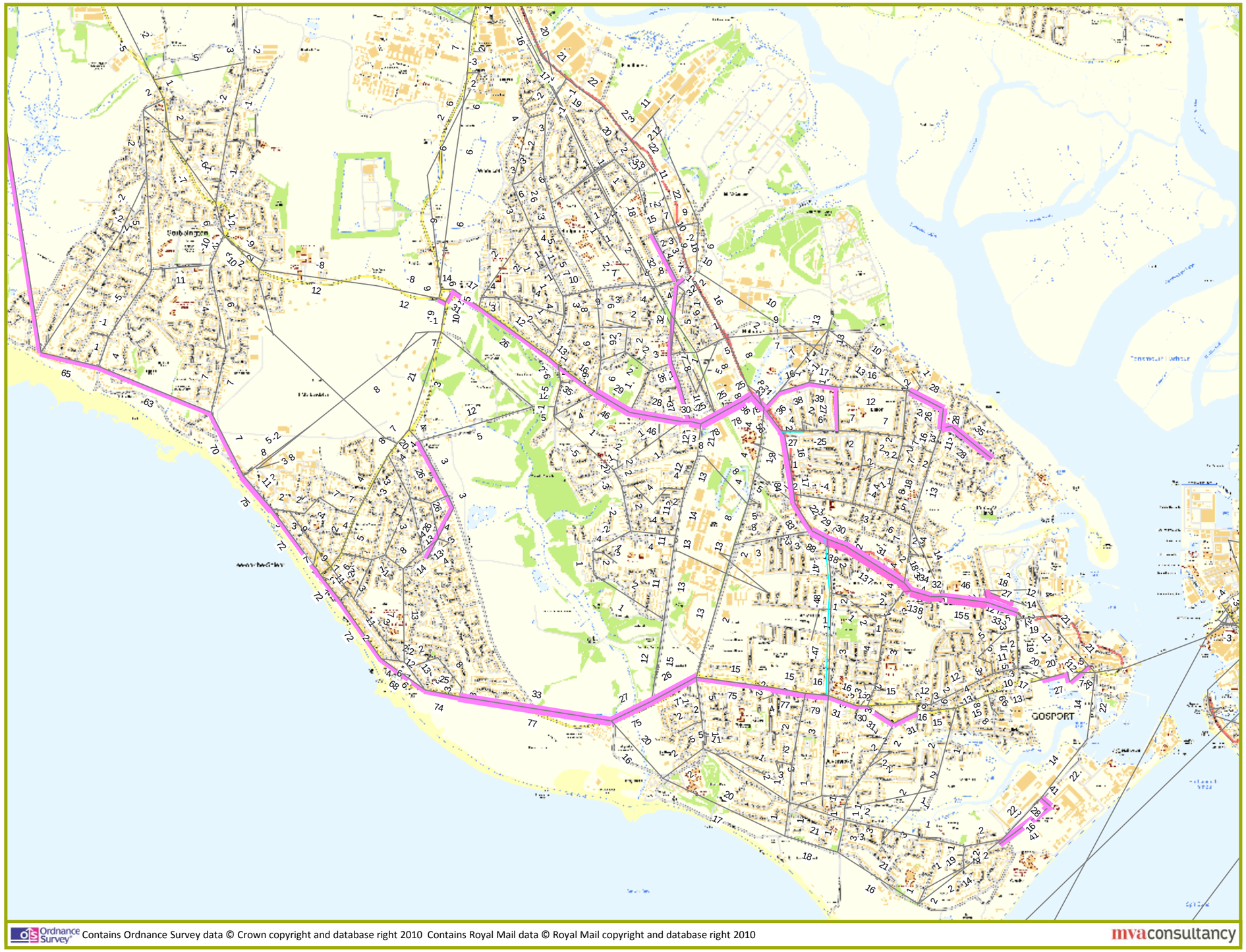


Figure 4.5 - AM Peak Flow Difference Gosport zoom (Scenario 2 v Scenario 1)

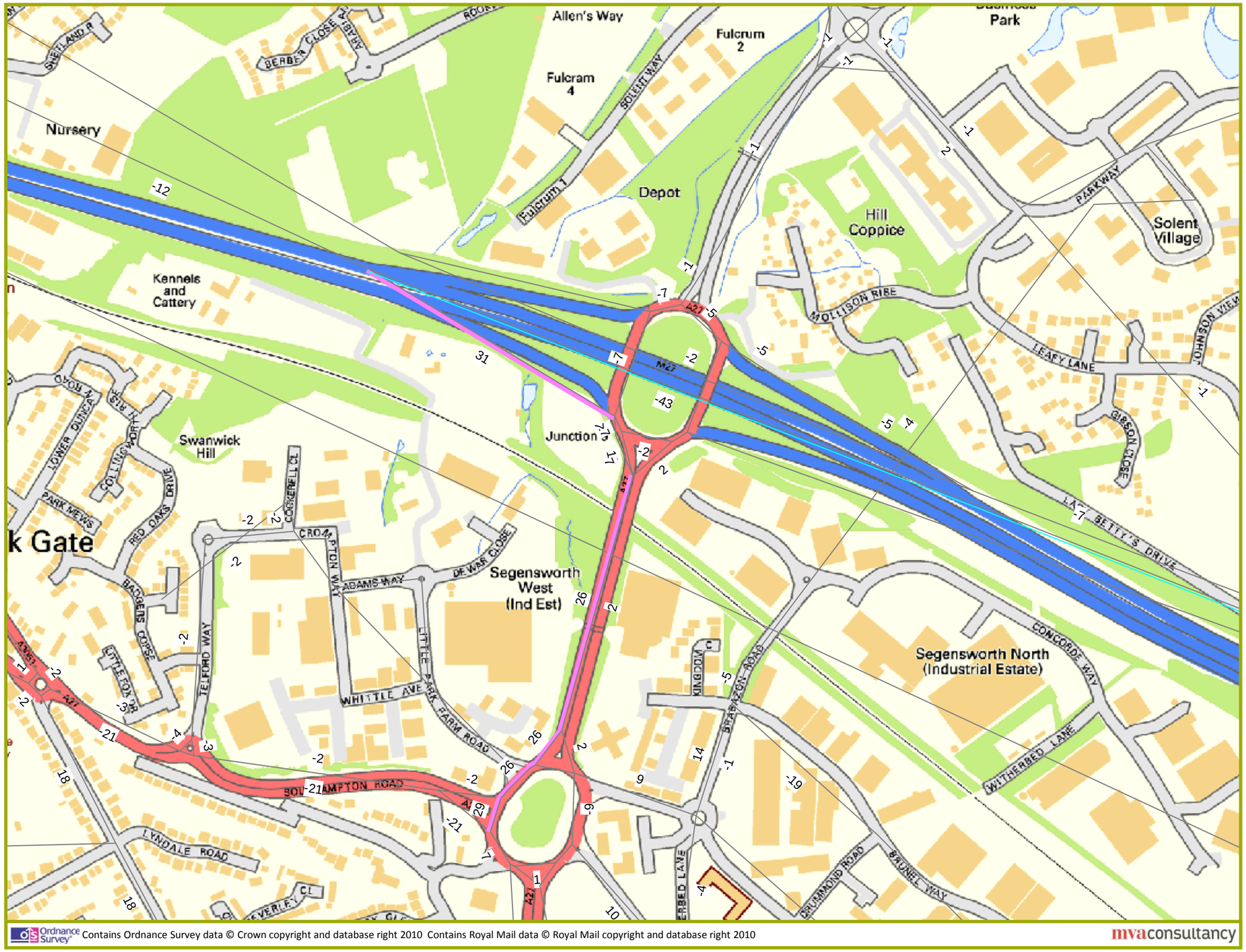


Figure 4.6 - AM Peak Flow Difference M27 J9 zoom (Scenario 2 v Scenario 1)

Contains Ordnance Survey data © Crown copyright and database right 2010 Contains Royal Mail data © Royal Mail copyright and database right 2010

Figure 4.7 - AM Peak Flow Difference M27 J11 zoom (Scenario 2 v Scenario 1)

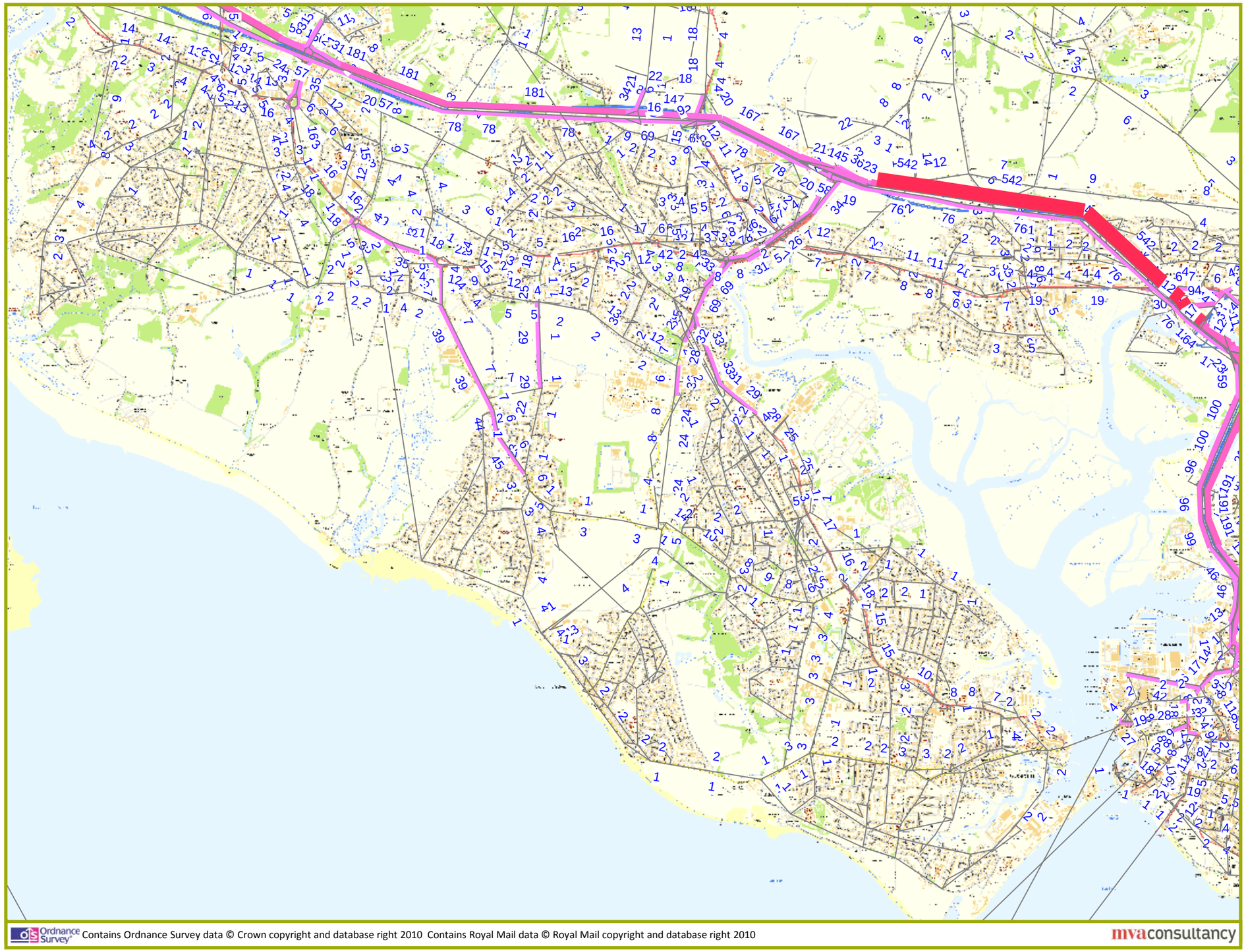


Figure 4.8 - AM Peak Supressed Flow (Scenario 2)

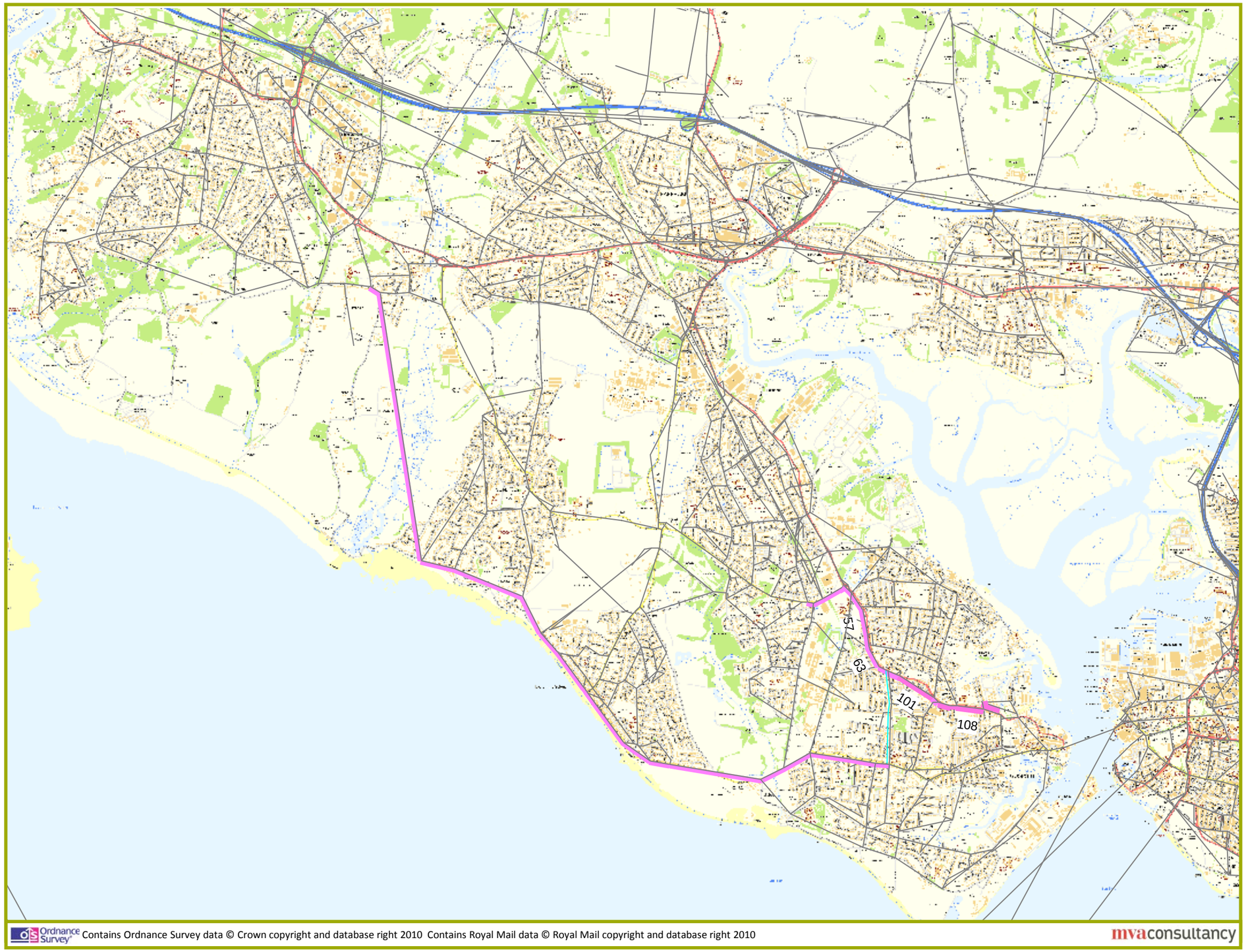


Figure 4.9 - AM Peak Flow Difference (Scenario 2 v Scenario 3)

Figure 4.10 - AM Peak Flow Difference Gosport zoom (Scenario 2 v Scenario 3)

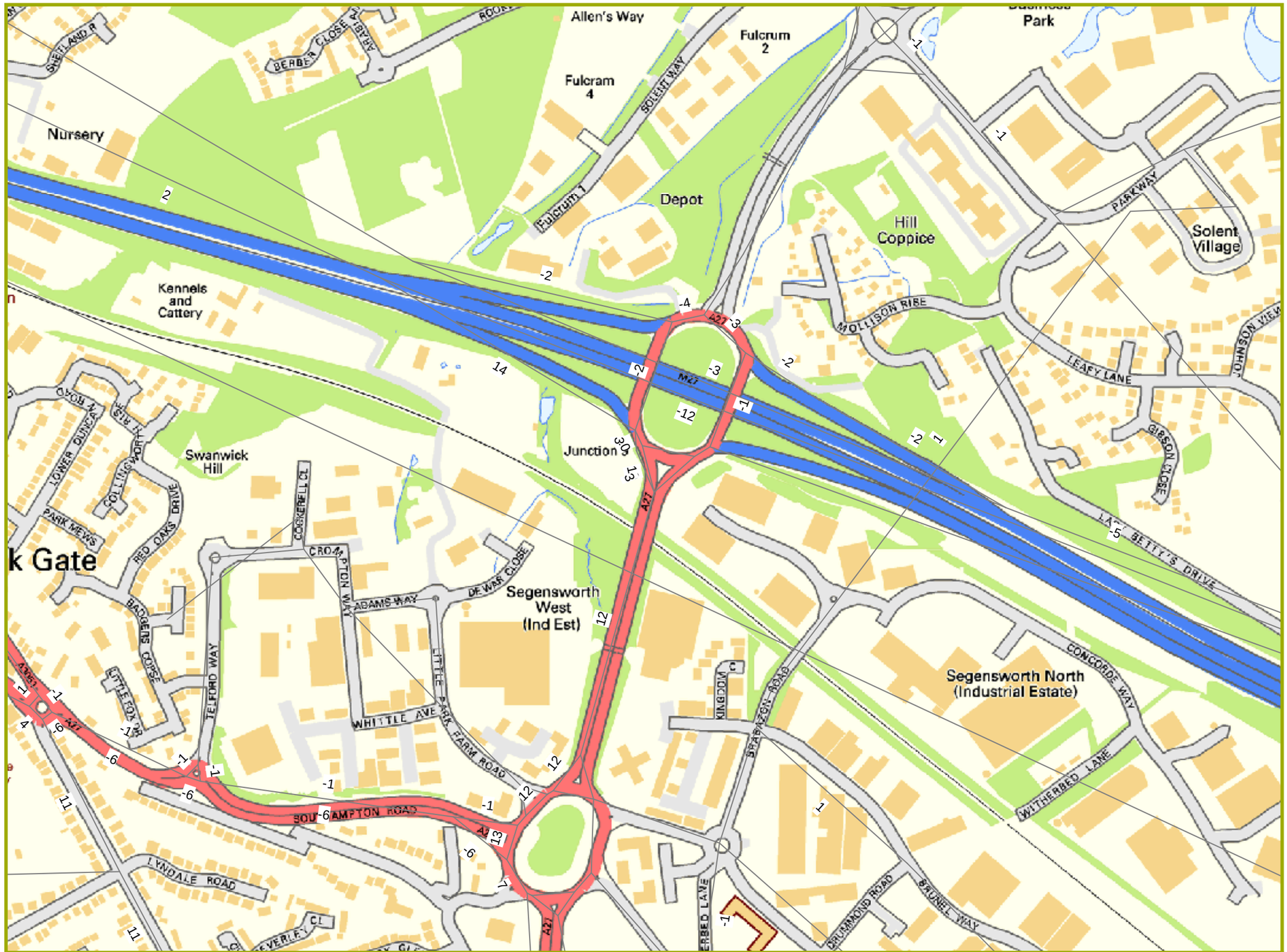


Figure 4.11 - AM Peak Flow Difference M27 J9 zoom (Scenario 2 v Scenario 3)

Figure 4.12 - AM Peak Flow Difference M27 J9 zoom (Scenario 2 v Scenario 3)

Figure 4.13 - AM Peak Supressed Flow (Scenario 3)

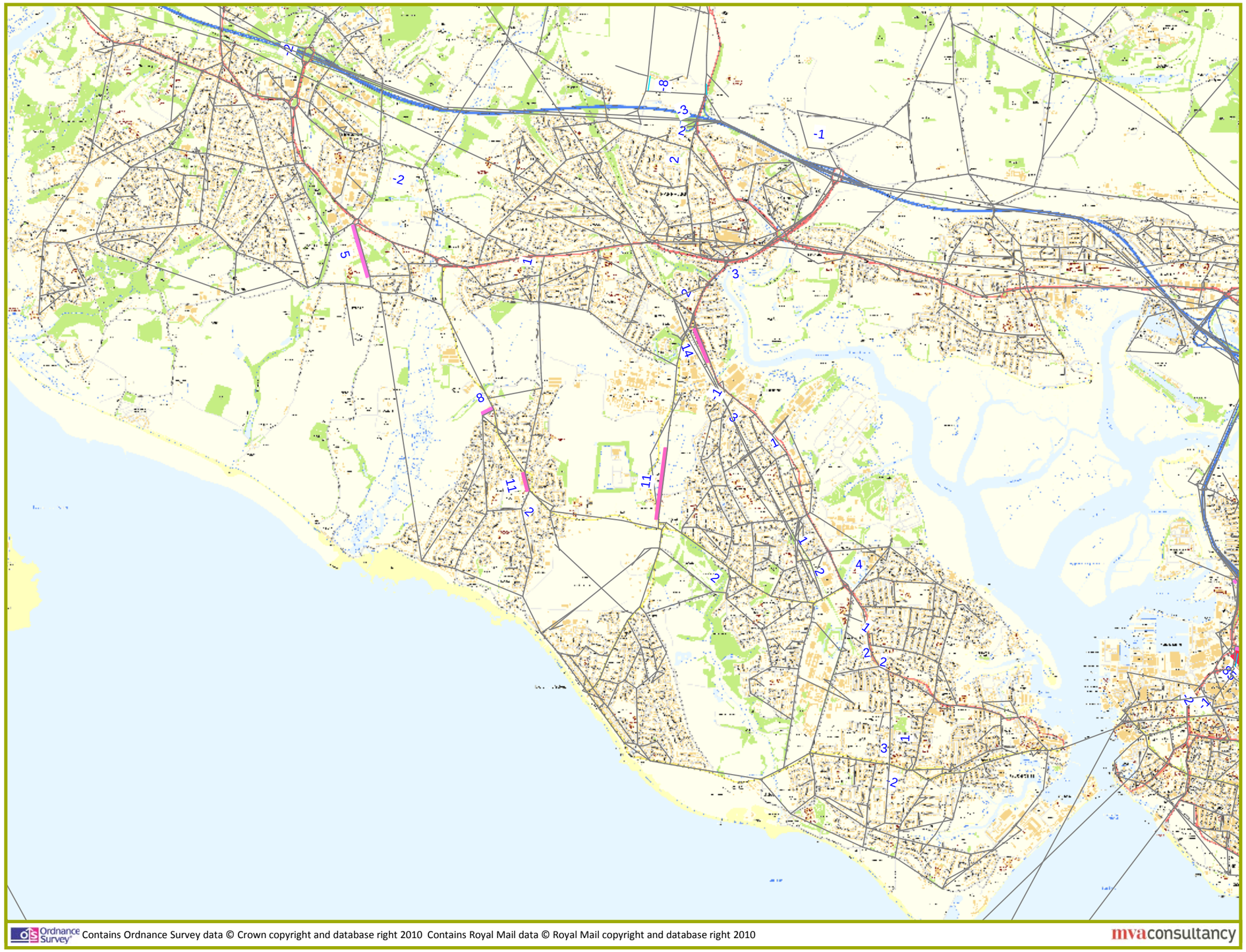


Figure 4.14 - AM Peak Delay Difference (Scenario 2 v Scenario 1)

Figure 4.15 - AM Peak Delay Difference Gosport zoom (Scenario 2 v Scenario 1)

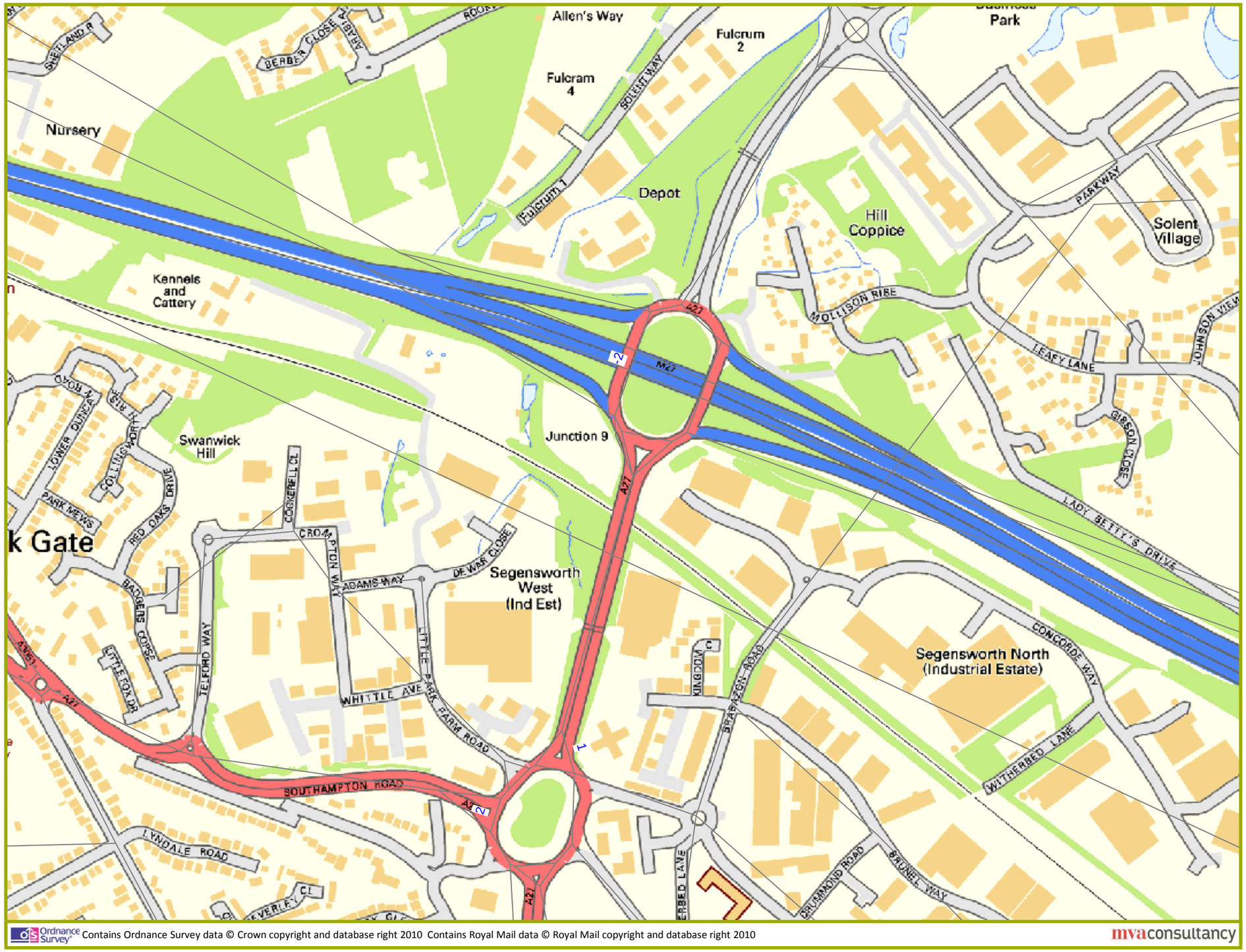


Figure 4.16 - AM Peak Delay Difference M27 J9 zoom (Scenario 2 v Scenario 1)

Figure 4.17 - AM Peak Delay Difference M27 J11 zoom (Scenario 2 v Scenario 1)

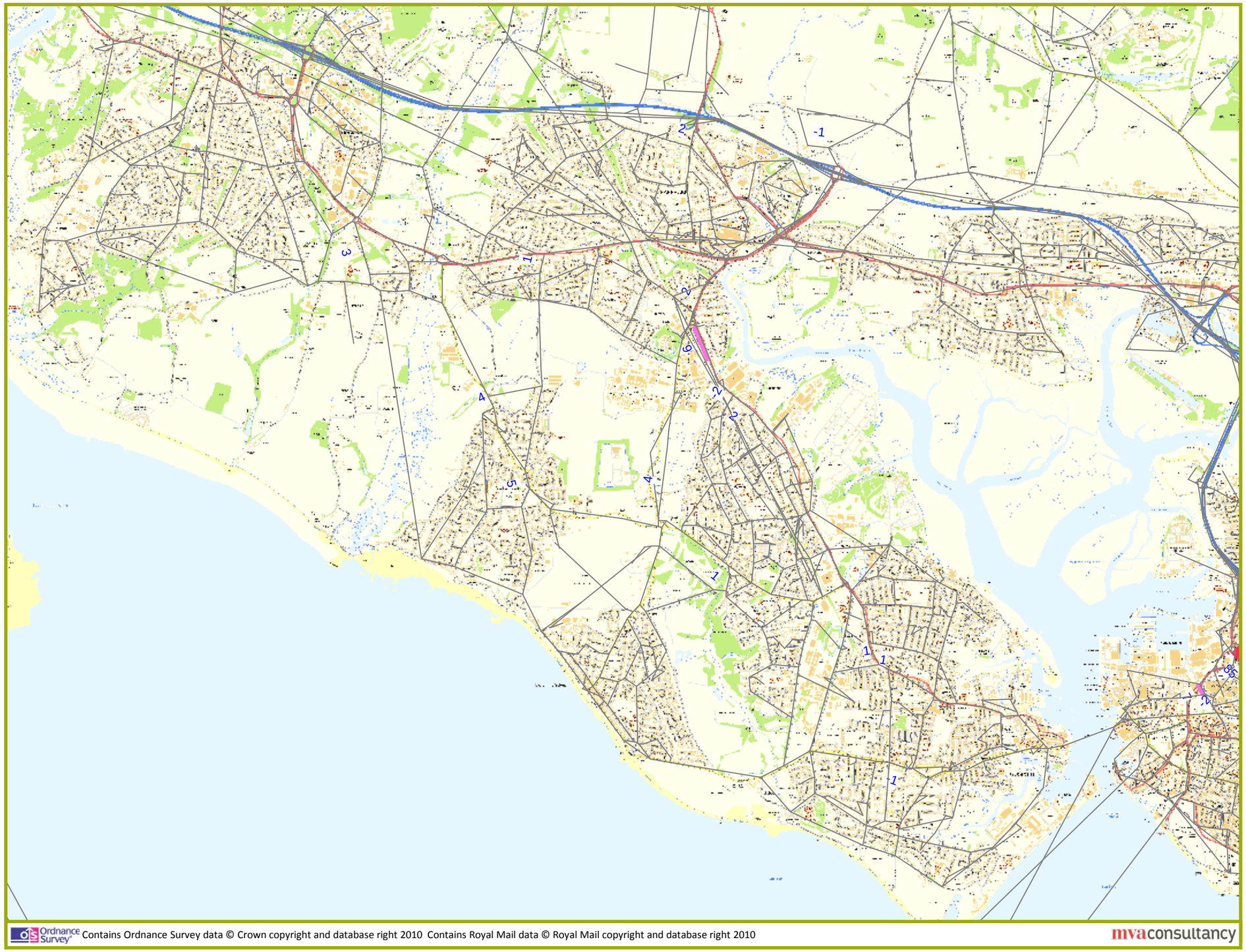


Figure 4.18 - AM Peak Delay Difference (Scenario 2 v Scenario 3)

Figure 4.19 - AM Peak Delay Difference Gosport zoom (Scenario 2 v Scenario 3)

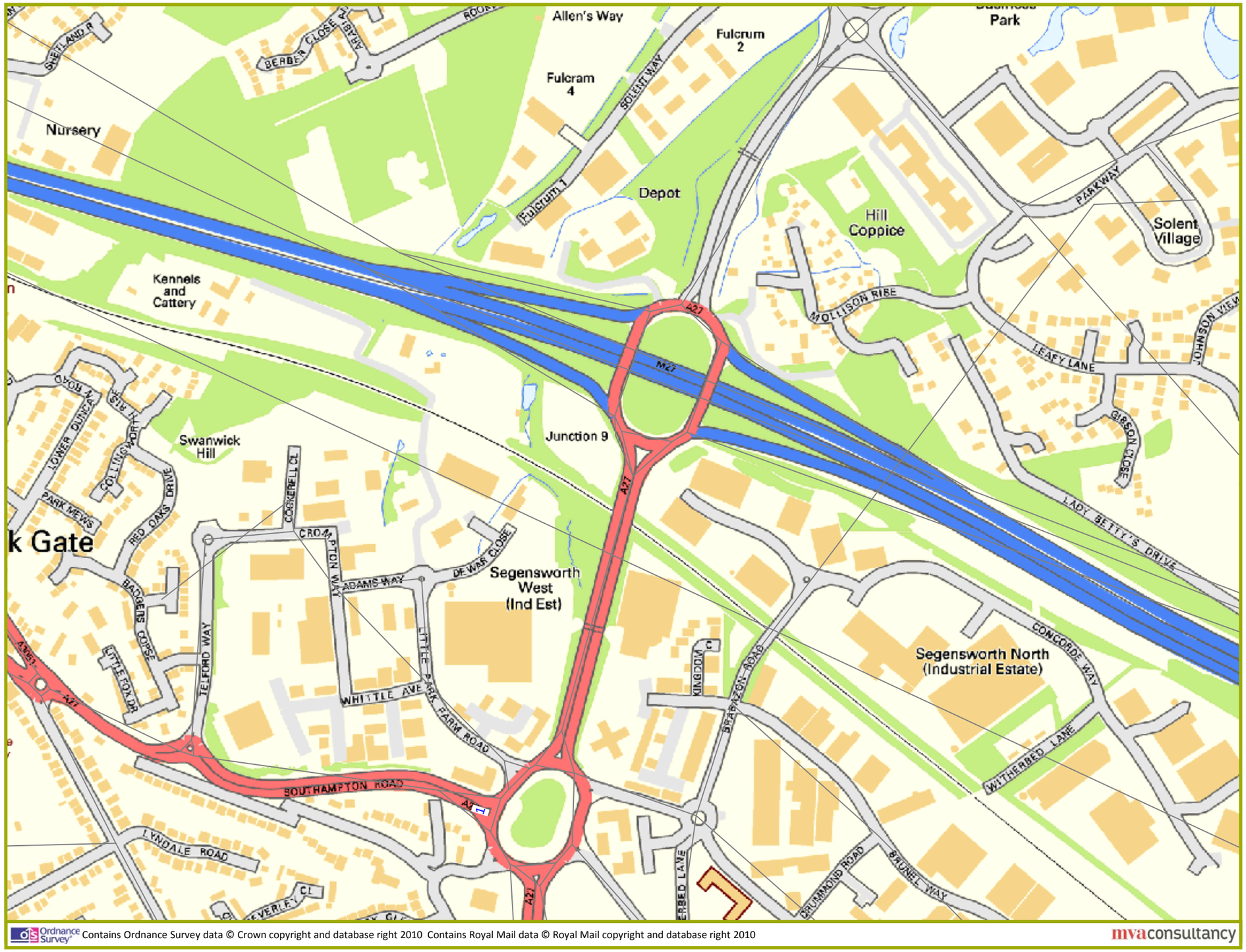


Figure 4.20 - AM Peak Delay Difference M27 J9 zoom (Scenario 2 v Scenario 3)

Figure 4.21 - AM Peak Delay Difference M27 J11 zoom (Scenario 2 v Scenario 3)

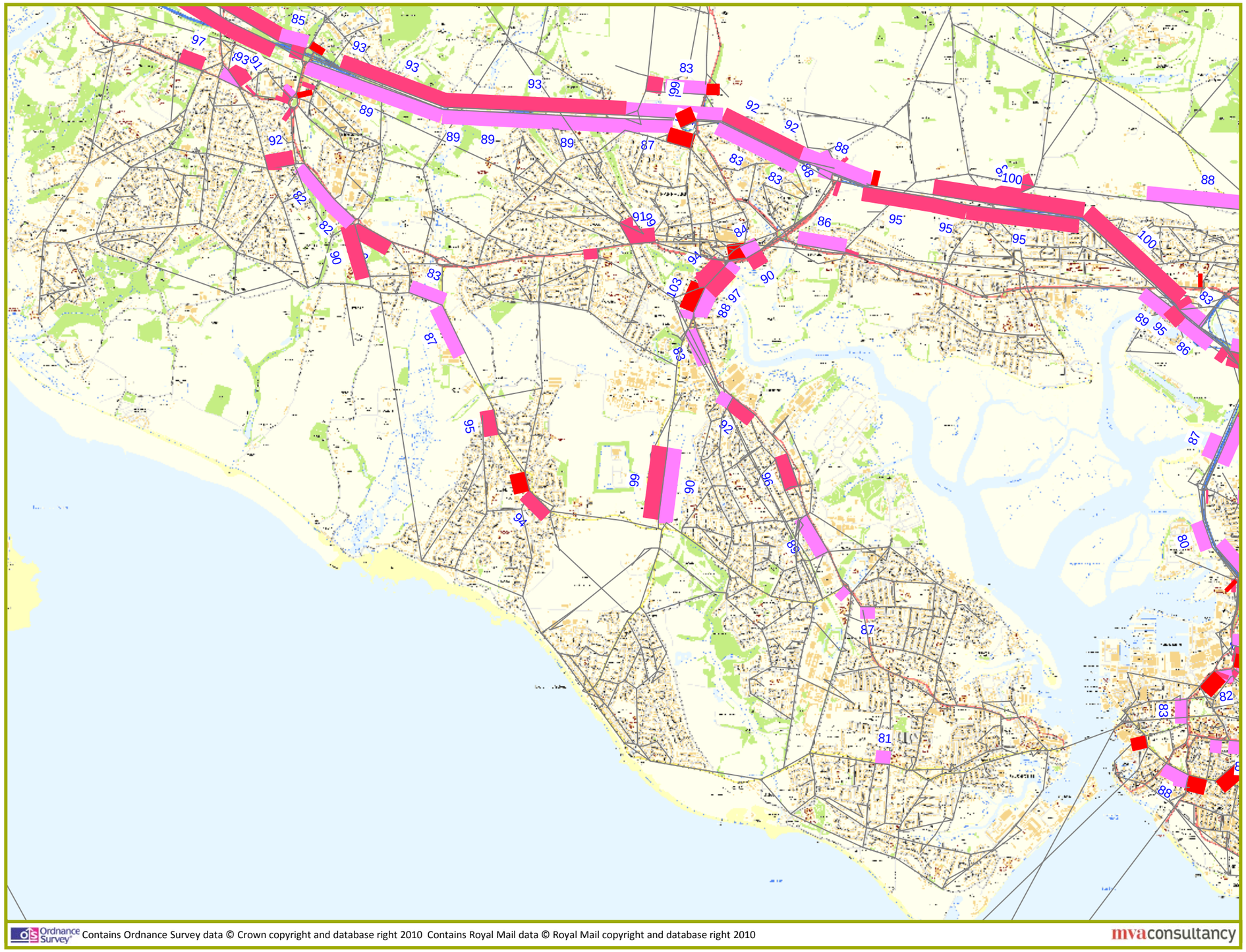


Figure 4.22 - AM Peak Volume over Capacity (Scenario 1)

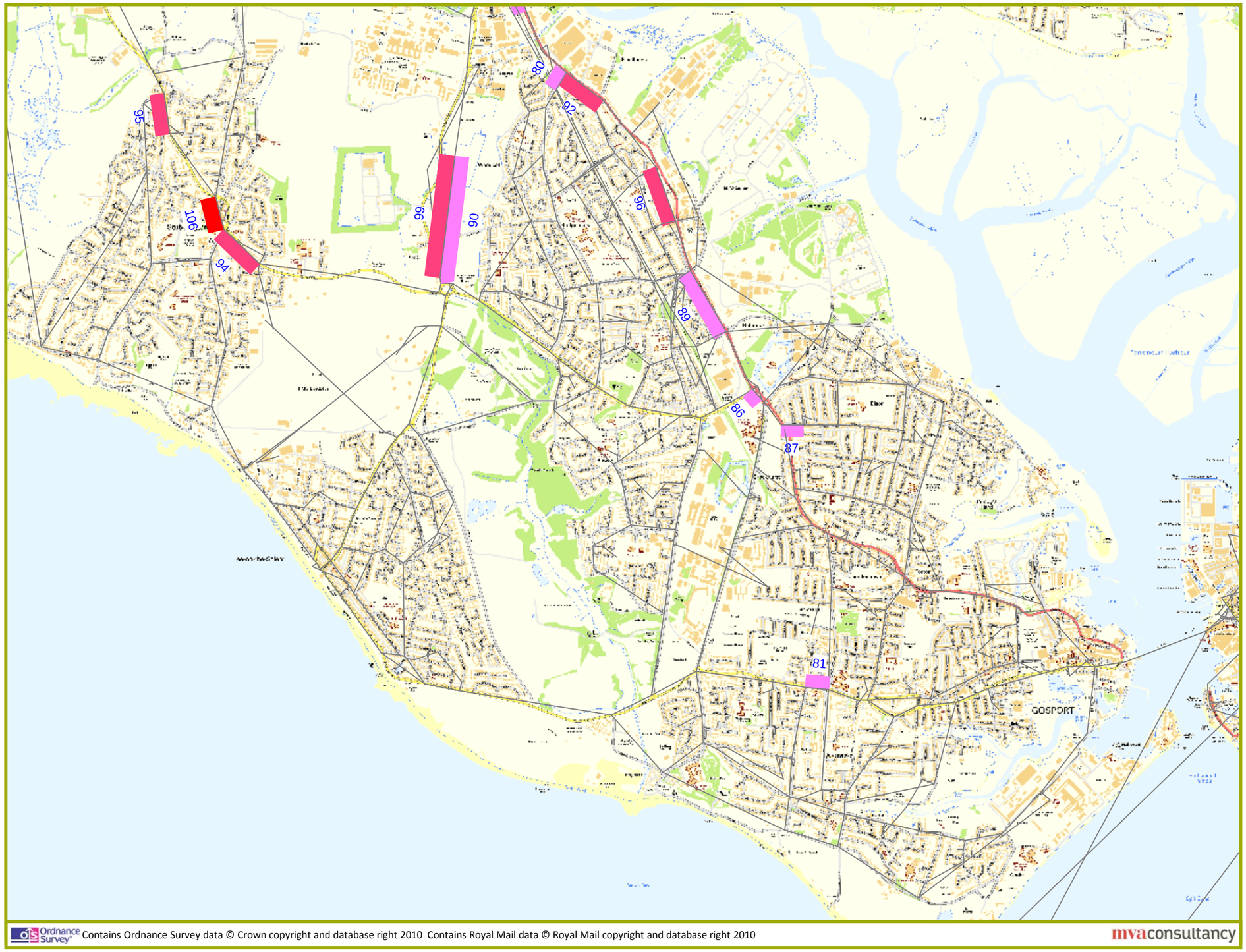


Figure 4.23 - AM Peak Volume over Capacity Gosport zoom (Scenario 1)

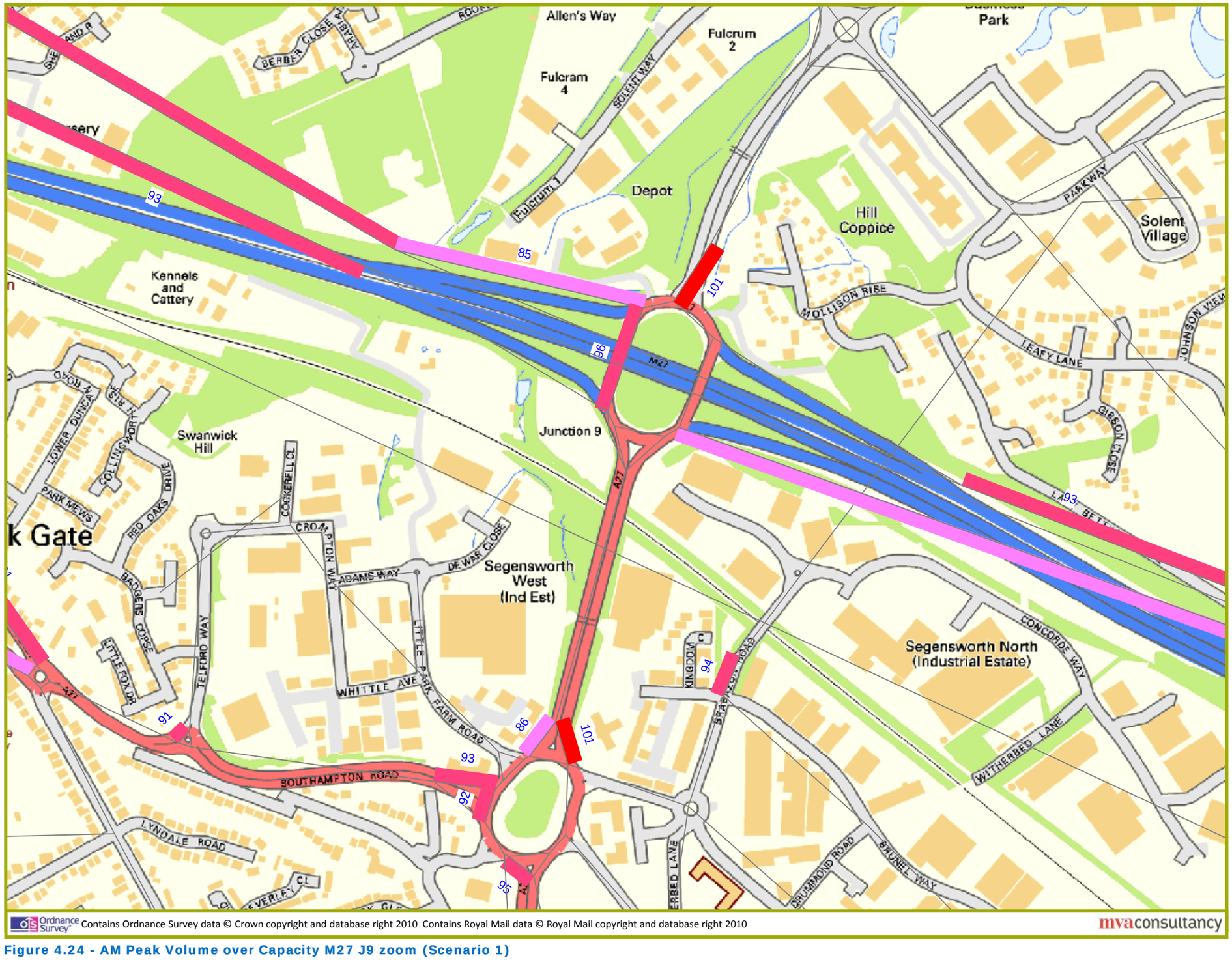
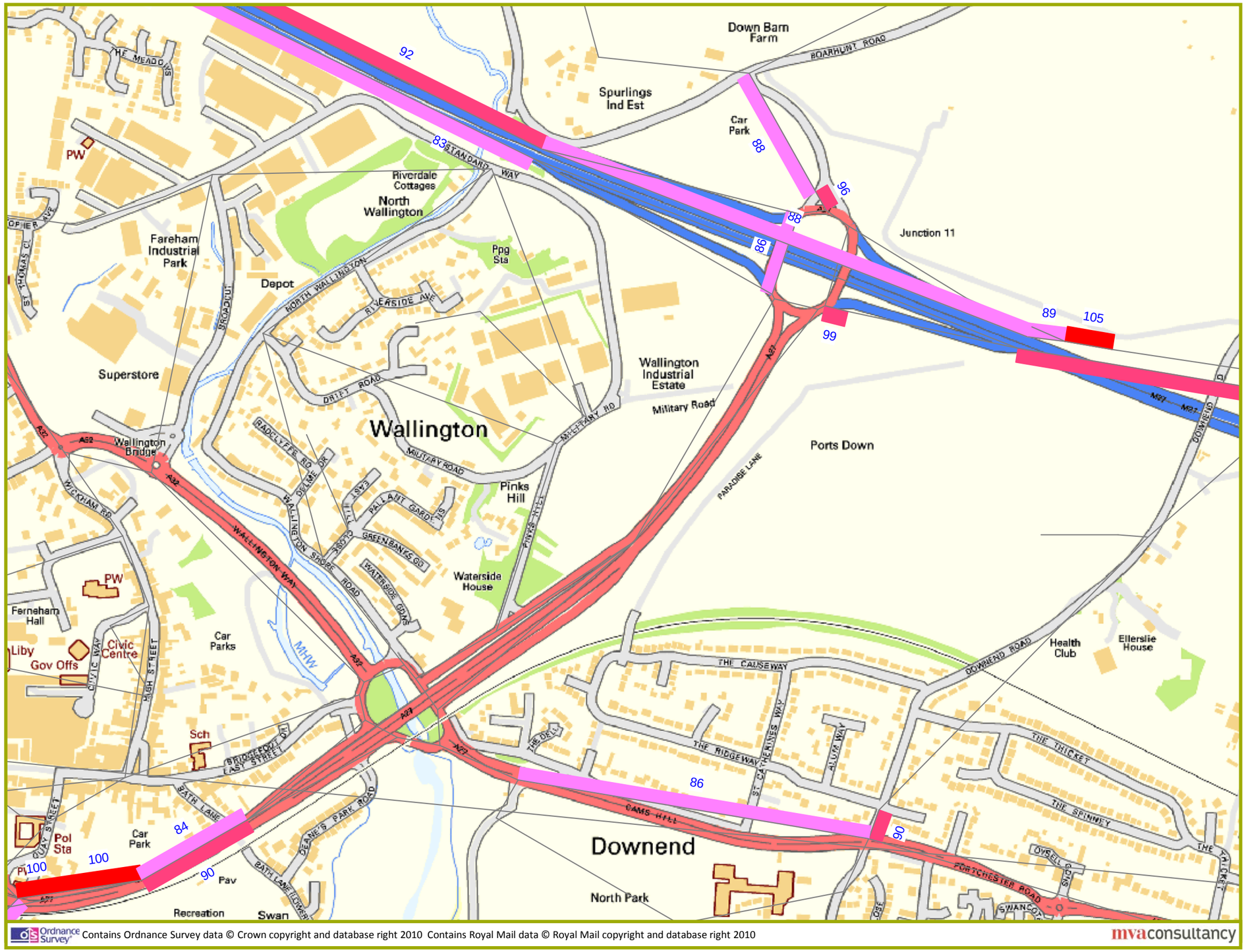


Figure 4.24 - AM Peak Volume over Capacity M27 J9 zoom (Scenario 1)



mvaconsultancy

Figure 4.25 - AM Peak Volume over Capacity M27 J11 zoom (Scenario 1)

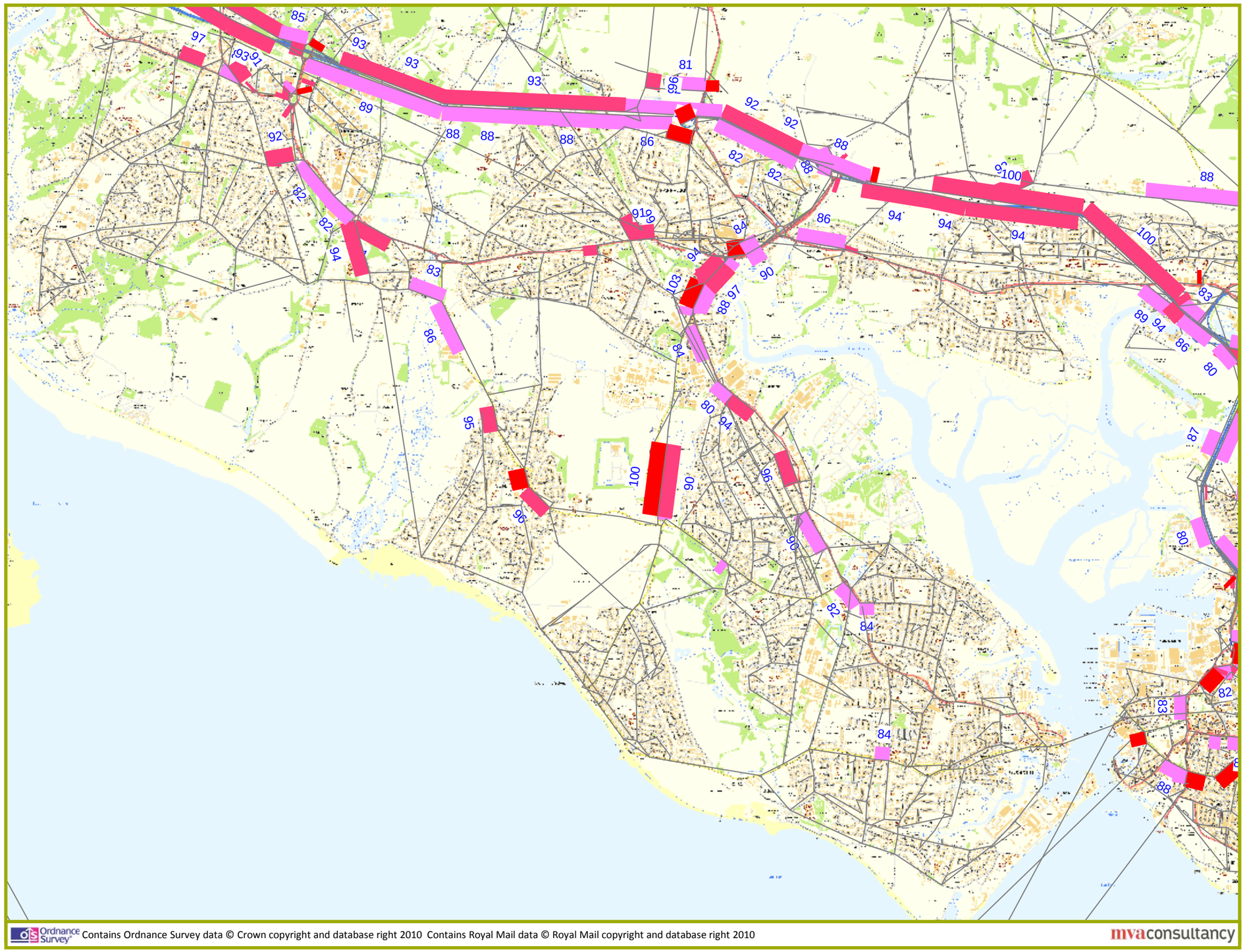


Figure 4.26 - AM Peak Volume over Capacity (Scenario 2)

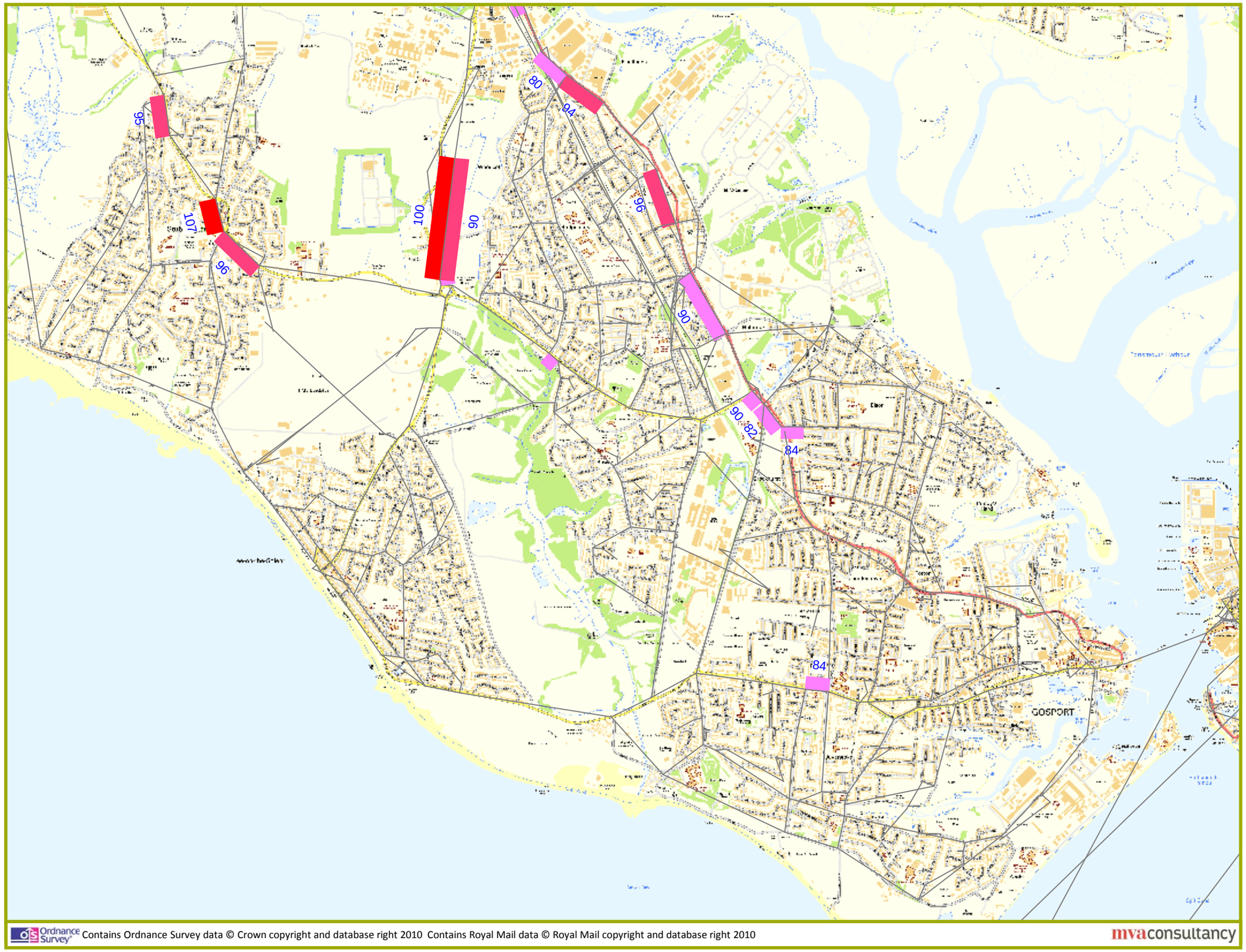


Figure 4.27 - AM Peak Volume over Capacity Gosport zoom (Scenario 2)

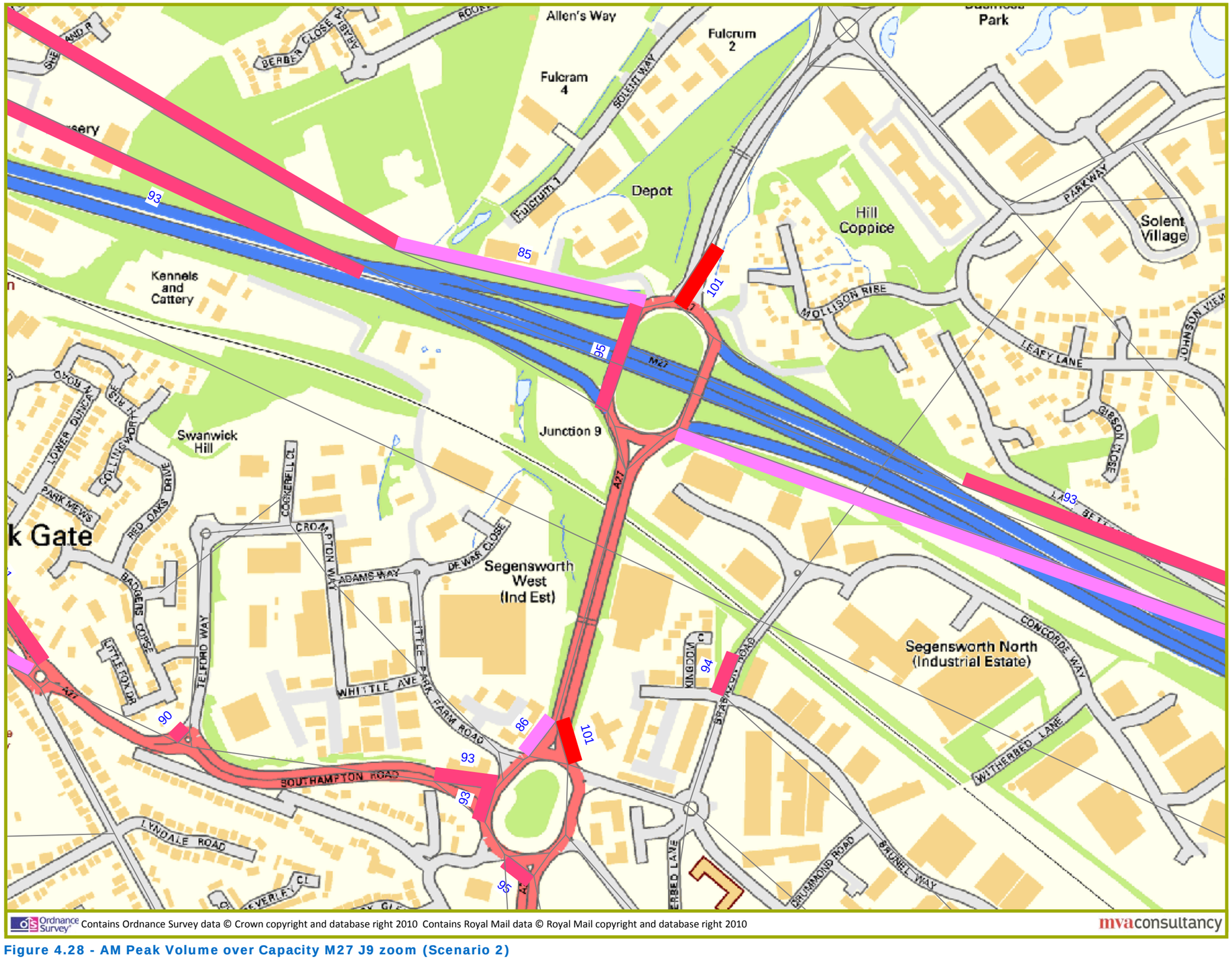


Figure 4.28 - AM Peak Volume over Capacity M27 J9 zoom (Scenario 2)

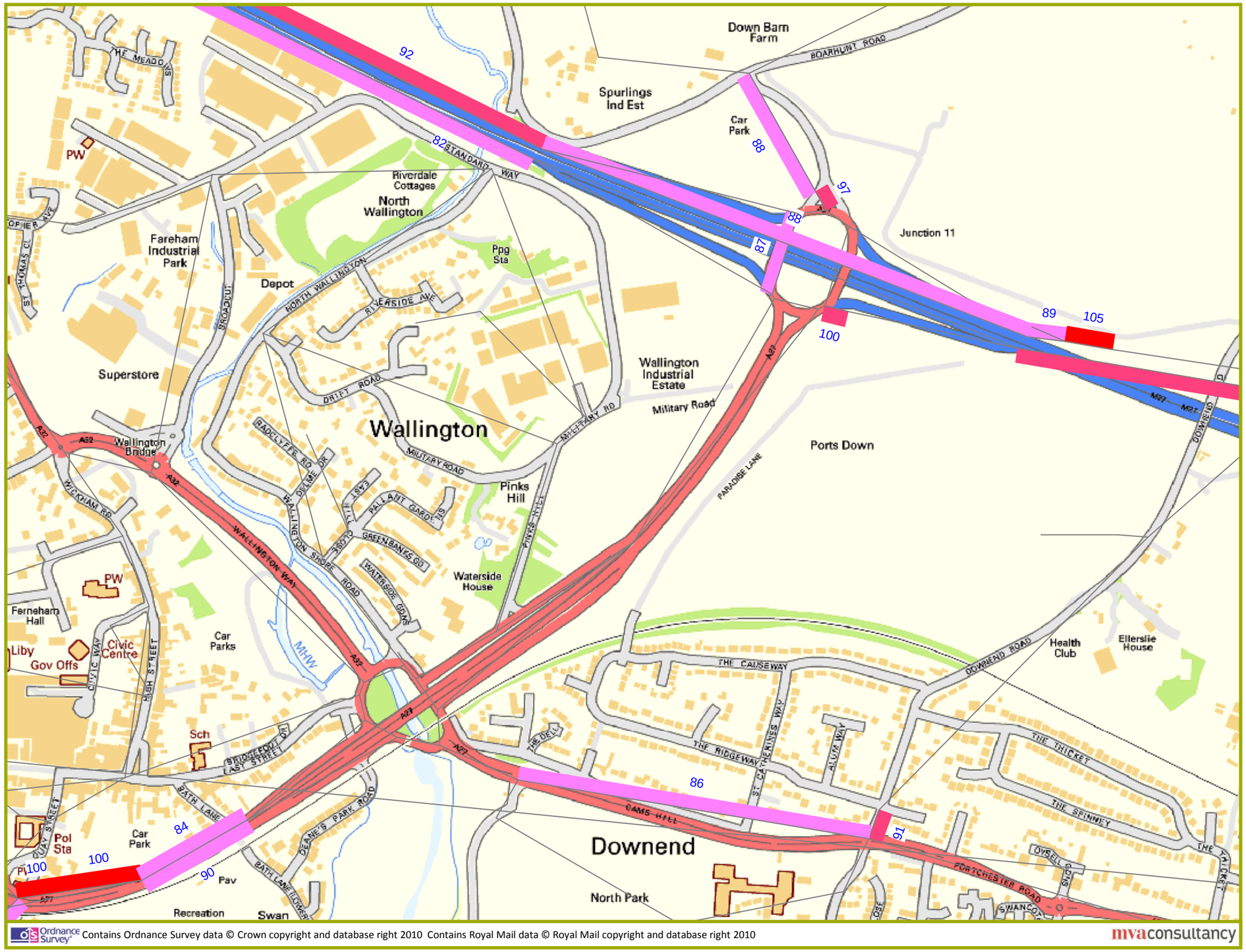


Figure 4.29 - AM Peak Volume over Capacity M27 J11 zoom (Scenario 2)

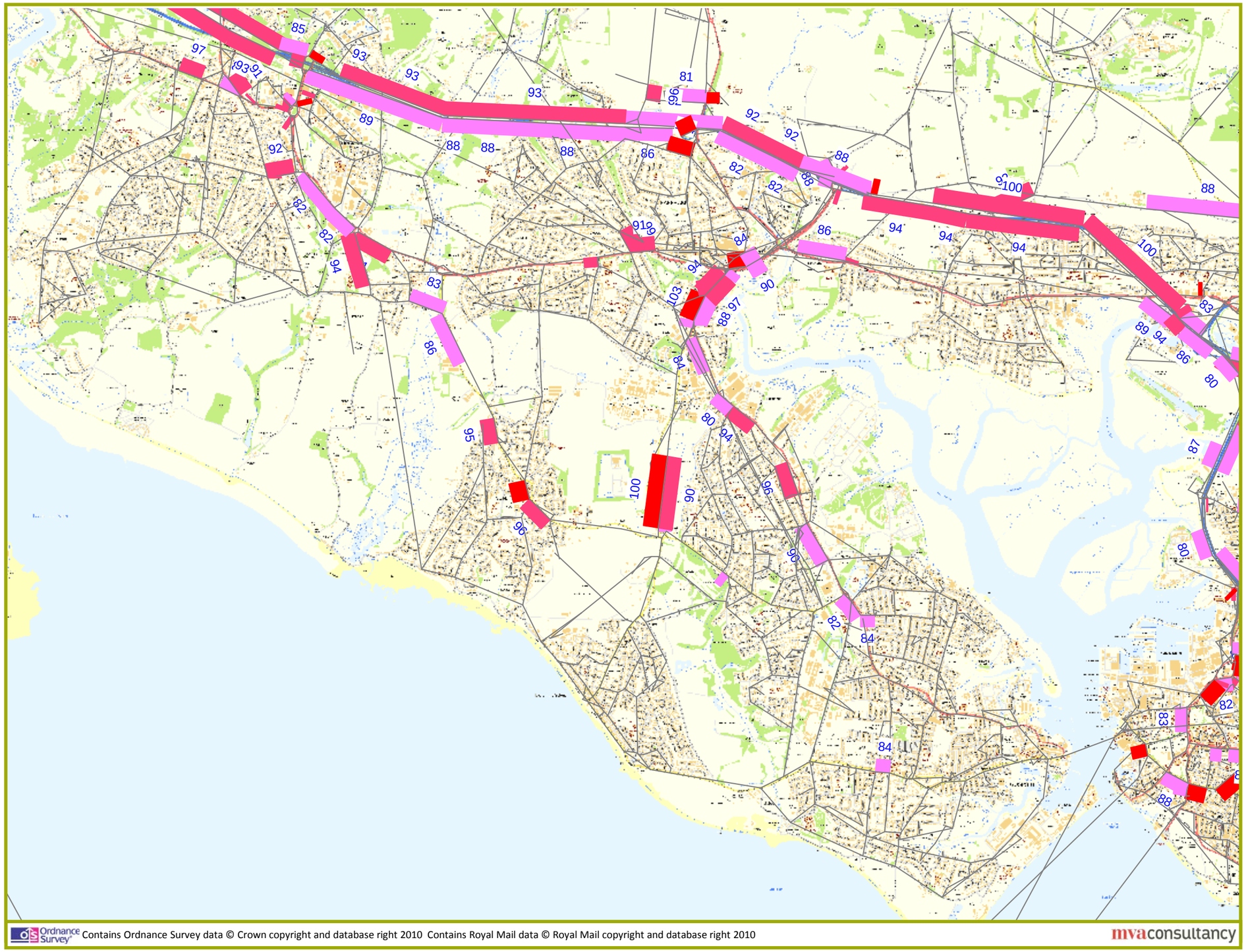


Figure 4.30 - AM Peak Volume over Capacity (Scenario 3)

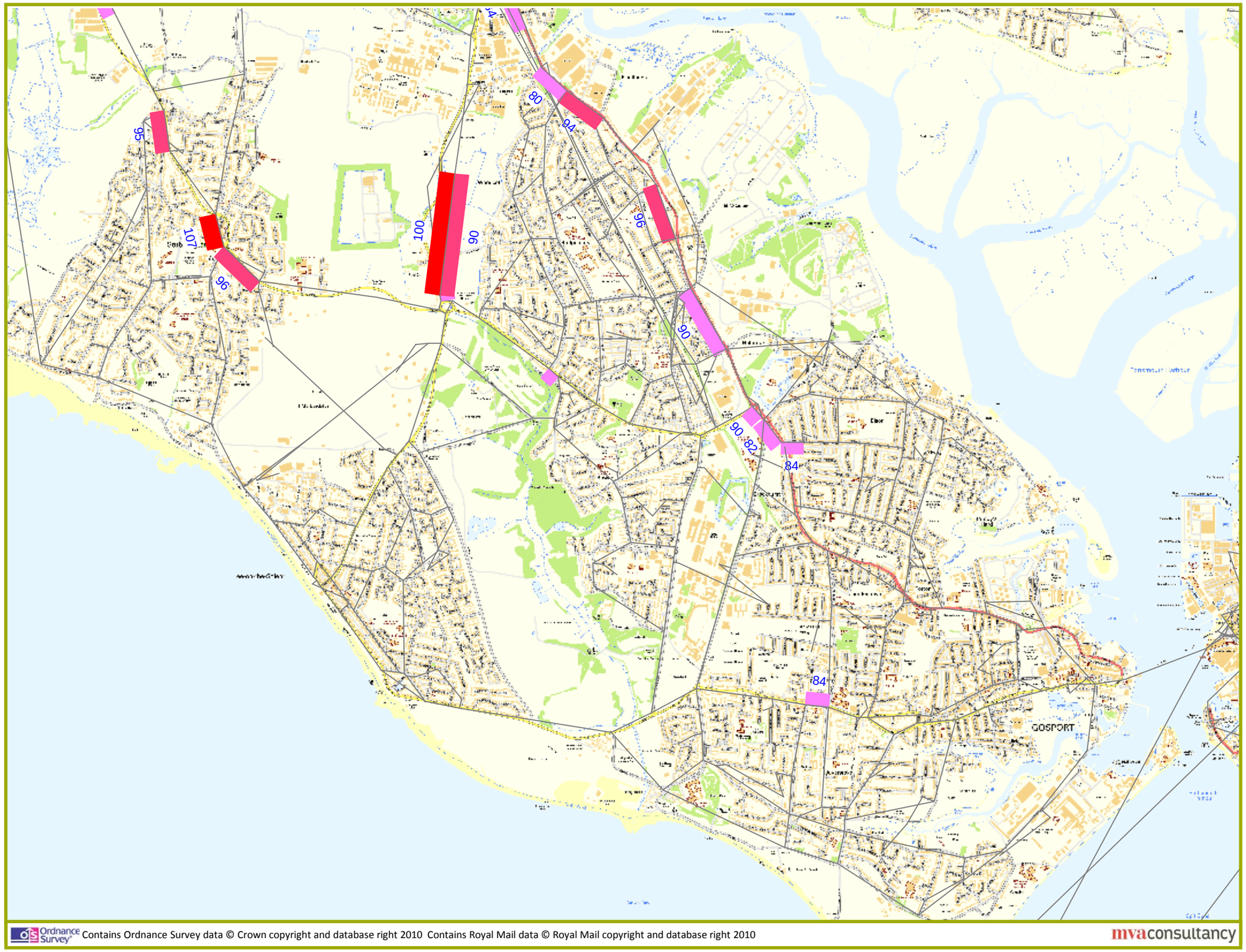


Figure 4.31 - AM Peak Volume over Capacity Gosport zoom (Scenario 3)

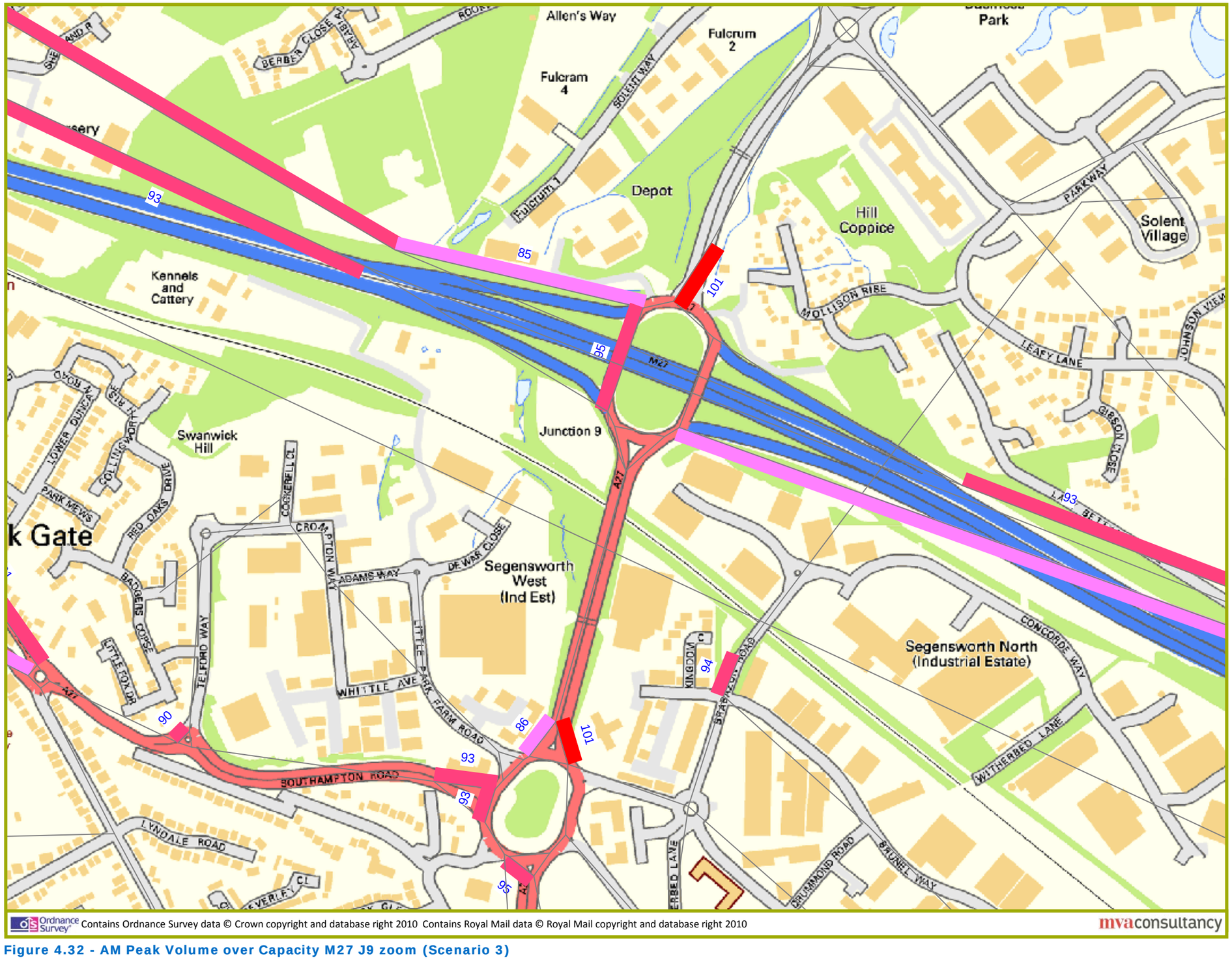


Figure 4.32 - AM Peak Volume over Capacity M27 J9 zoom (Scenario 3)

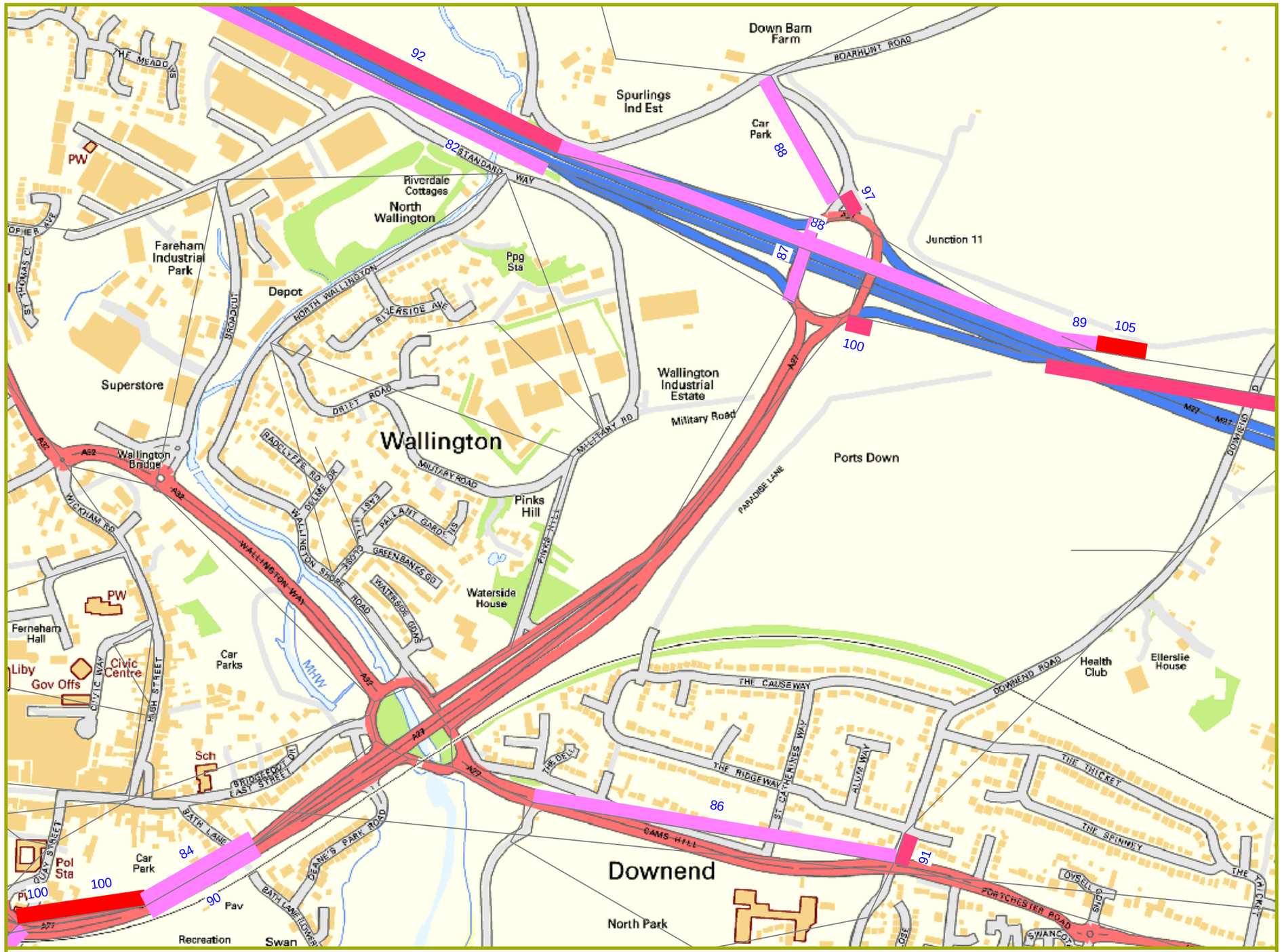


Figure 4.33 - AM Peak Volume over Capacity M27 J11 zoom (Scenario 3)

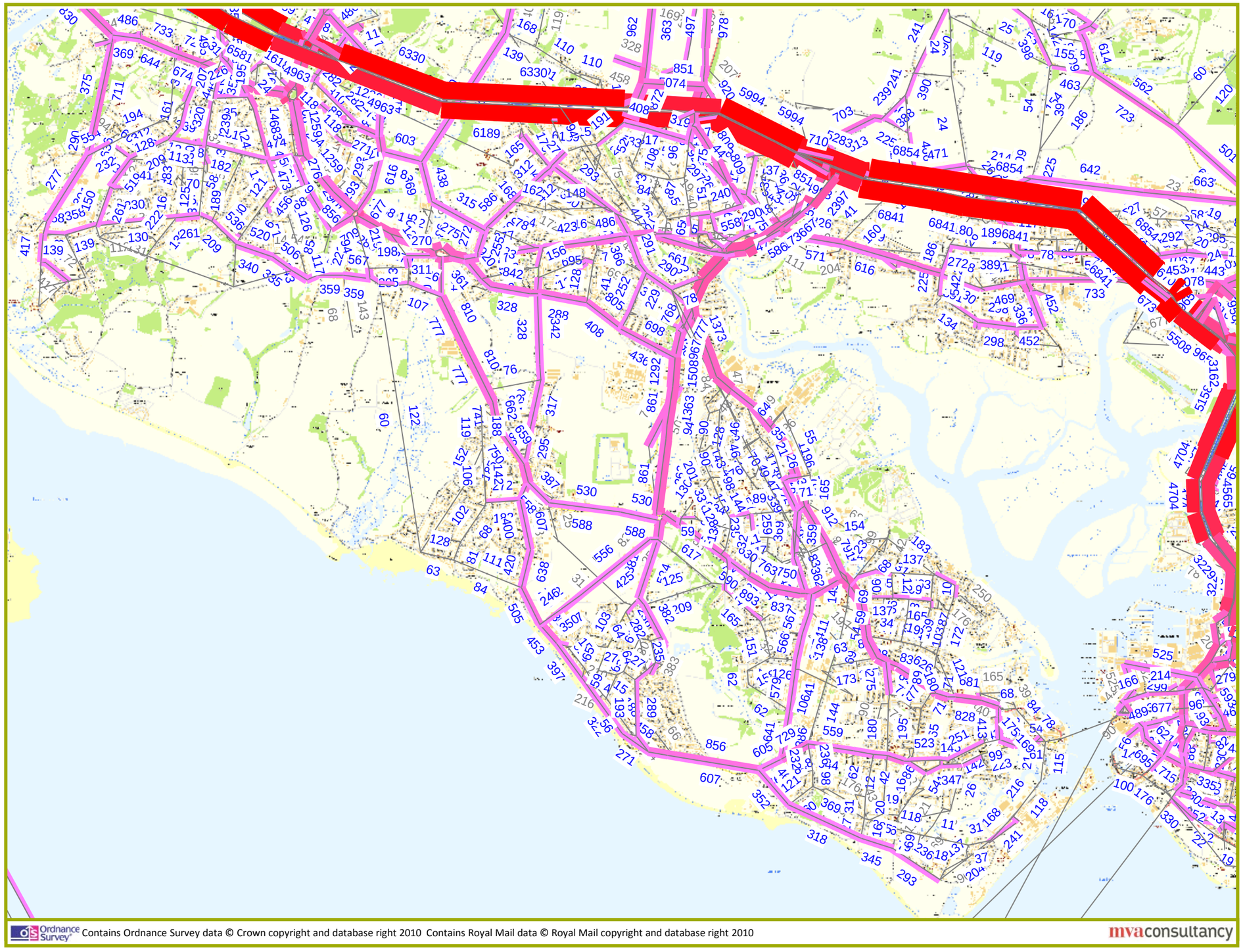


Figure 4.34 - PM Peak Flow (Scenario 1)

Figure 4.35 - PM Peak Flow Gosport zoom (Scenario 1)

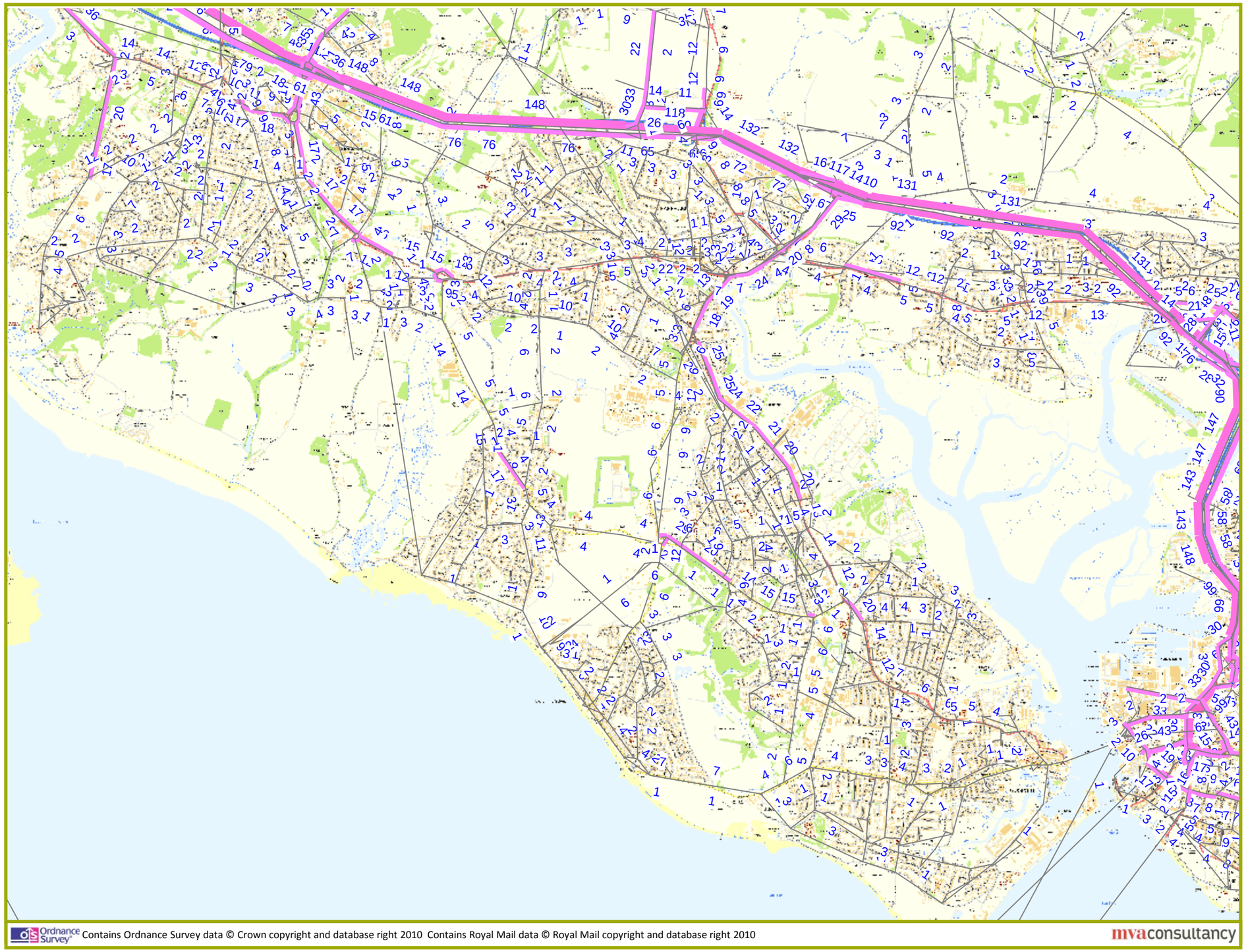


Figure 4.36 - PM Peak Supressed Flow (Scenario 1)

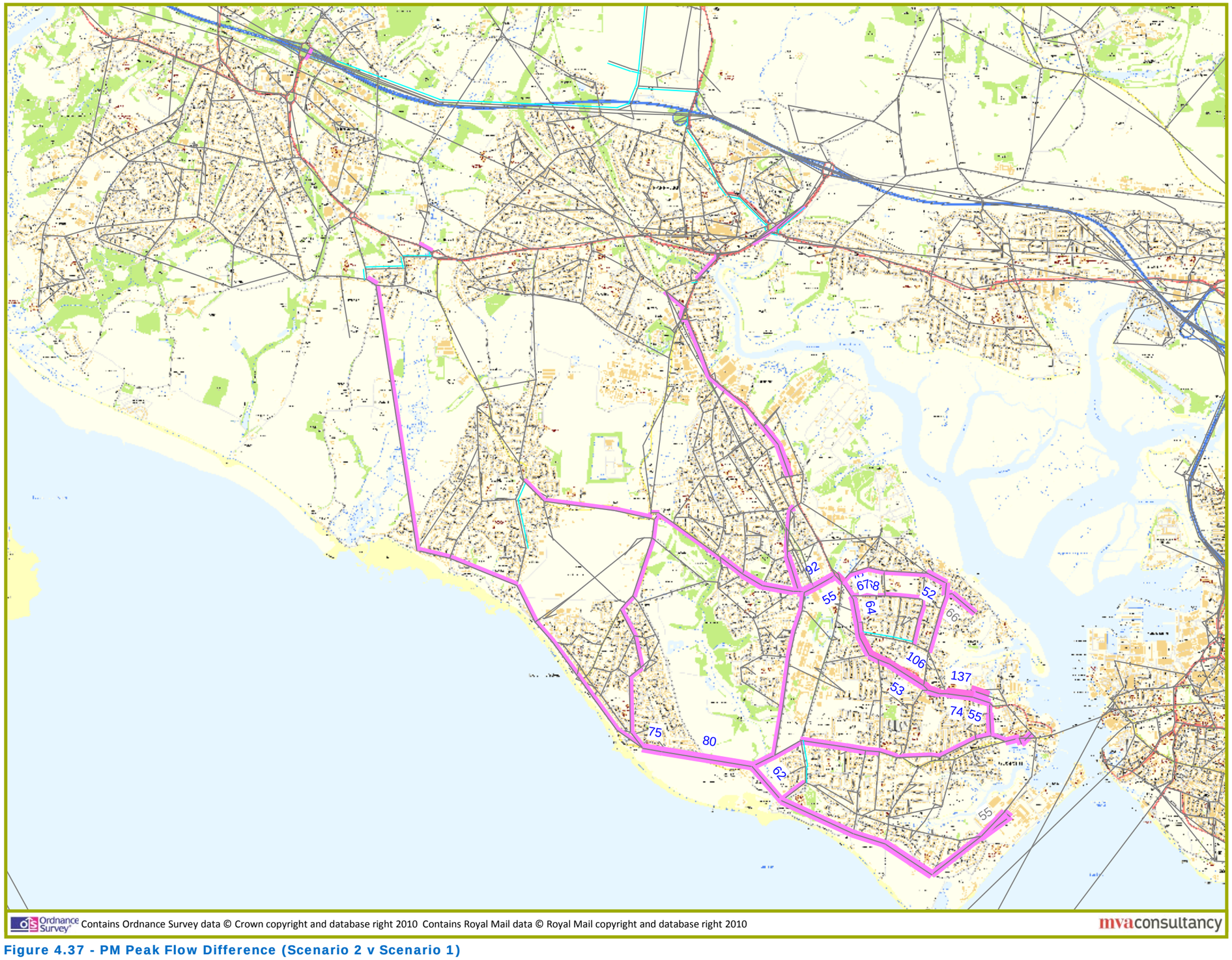


Figure 4.37 - PM Peak Flow Difference (Scenario 2 v Scenario 1)

Figure 4.38 - PM Peak Flow Difference Gosport zoom (Scenario 2 v Scenario 1)

Figure 4.39 - PM Peak Flow Difference M27 J9 zoom (Scenario 2 v Scenario 1)

Contains Ordnance Survey data © Crown copyright and database right 2010 Contains Royal Mail data © Royal Mail copyright and database right 2010

Figure 4.40 - PM Peak Flow Difference M27 J11 zoom (Scenario 2 v Scenario 1)

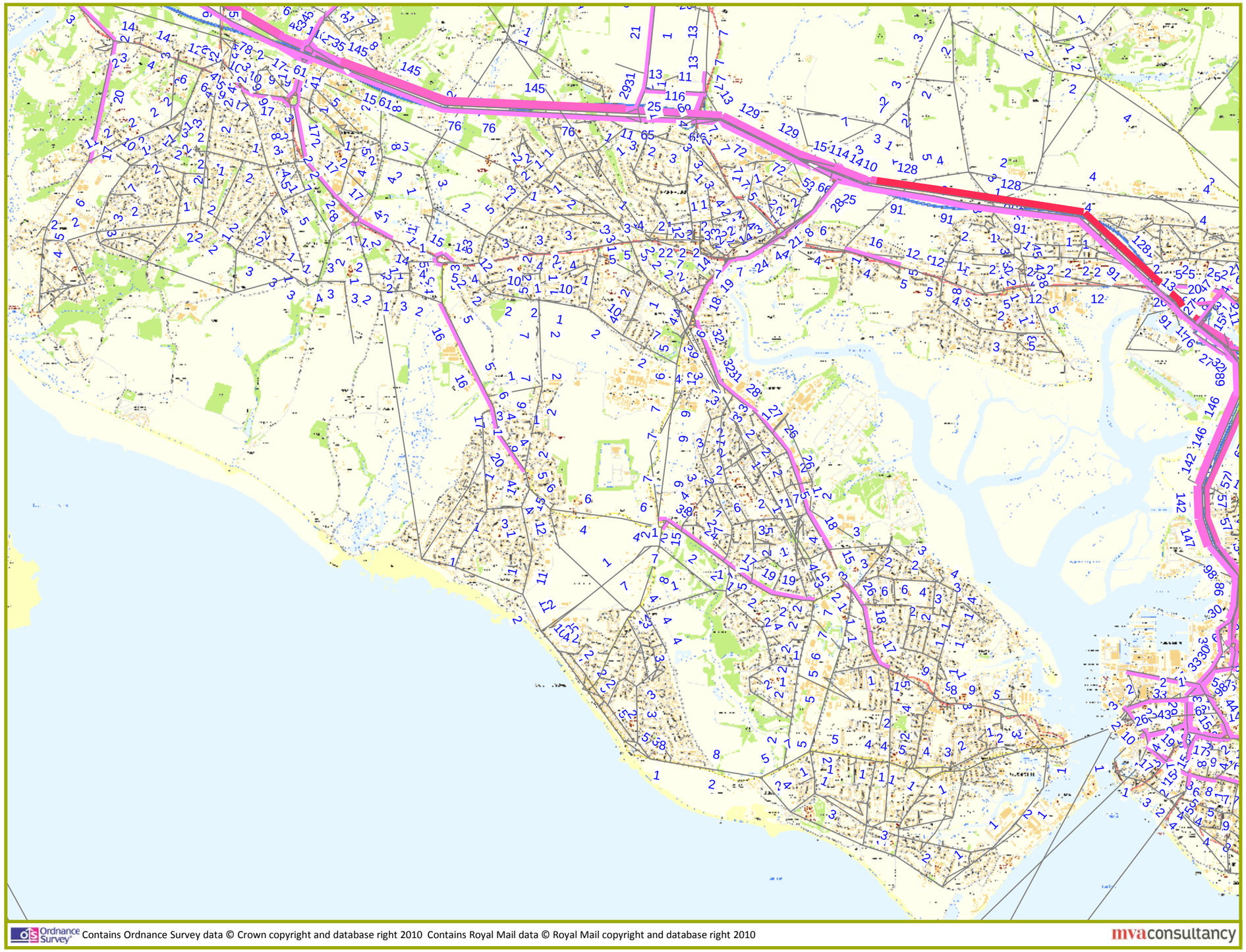


Figure 4.41 - PM Peak Supressed Flow (Scenario 2)

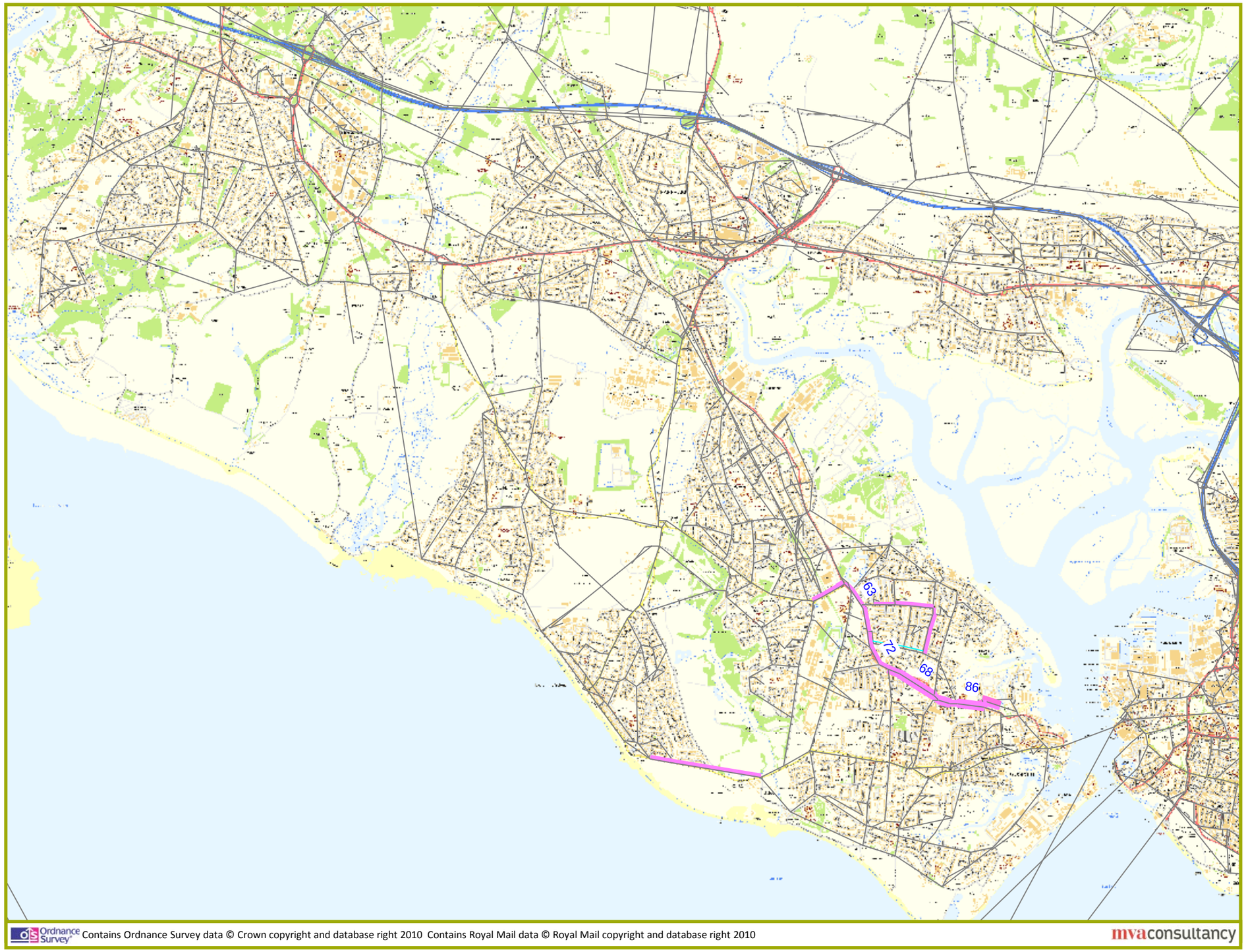


Figure 4.42 - PM Peak Flow Difference (Scenario 2 v Scenario 3)

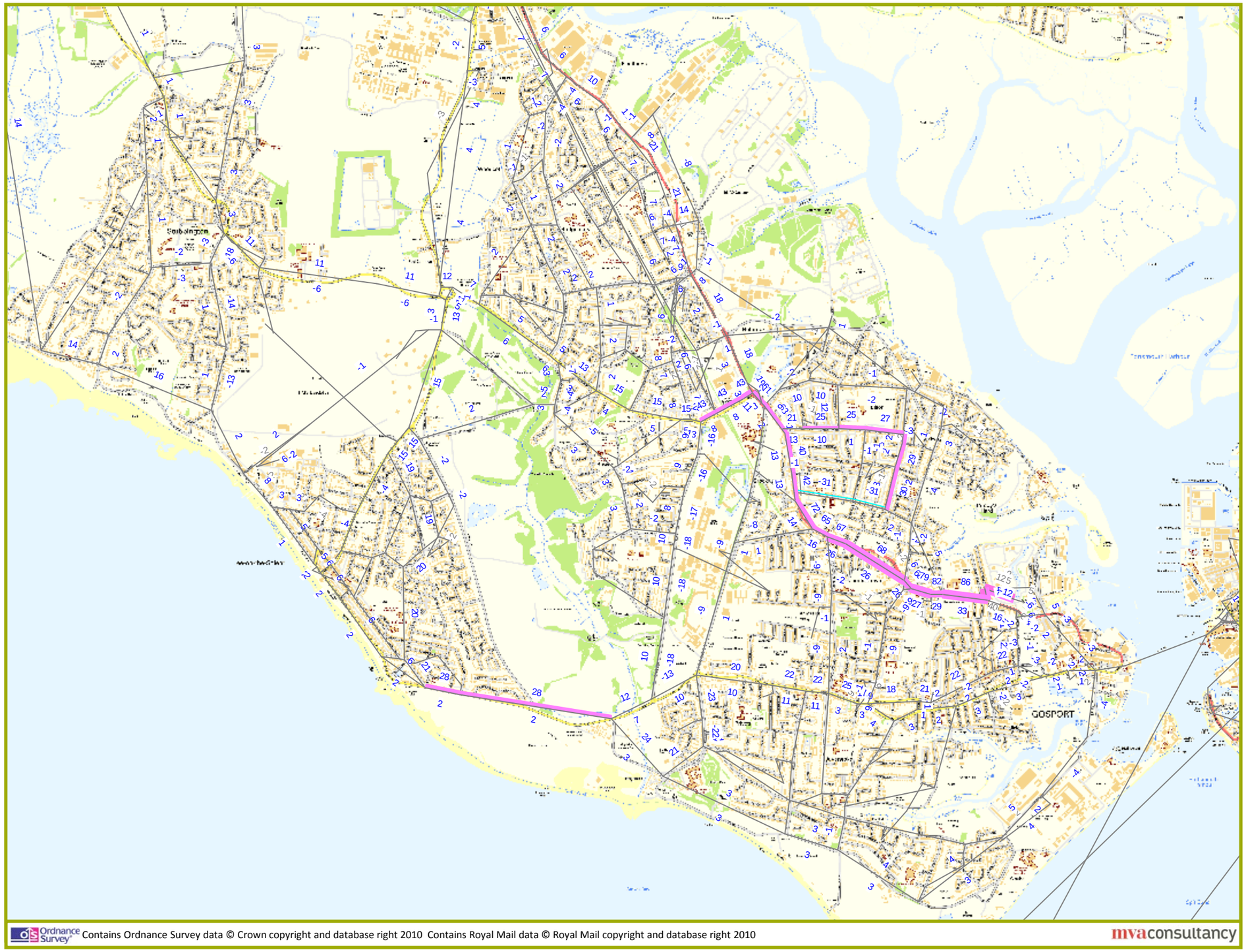


Figure 4.43 - PM Peak Flow Difference Gosport zoom (Scenario 2 v Scenario 3)

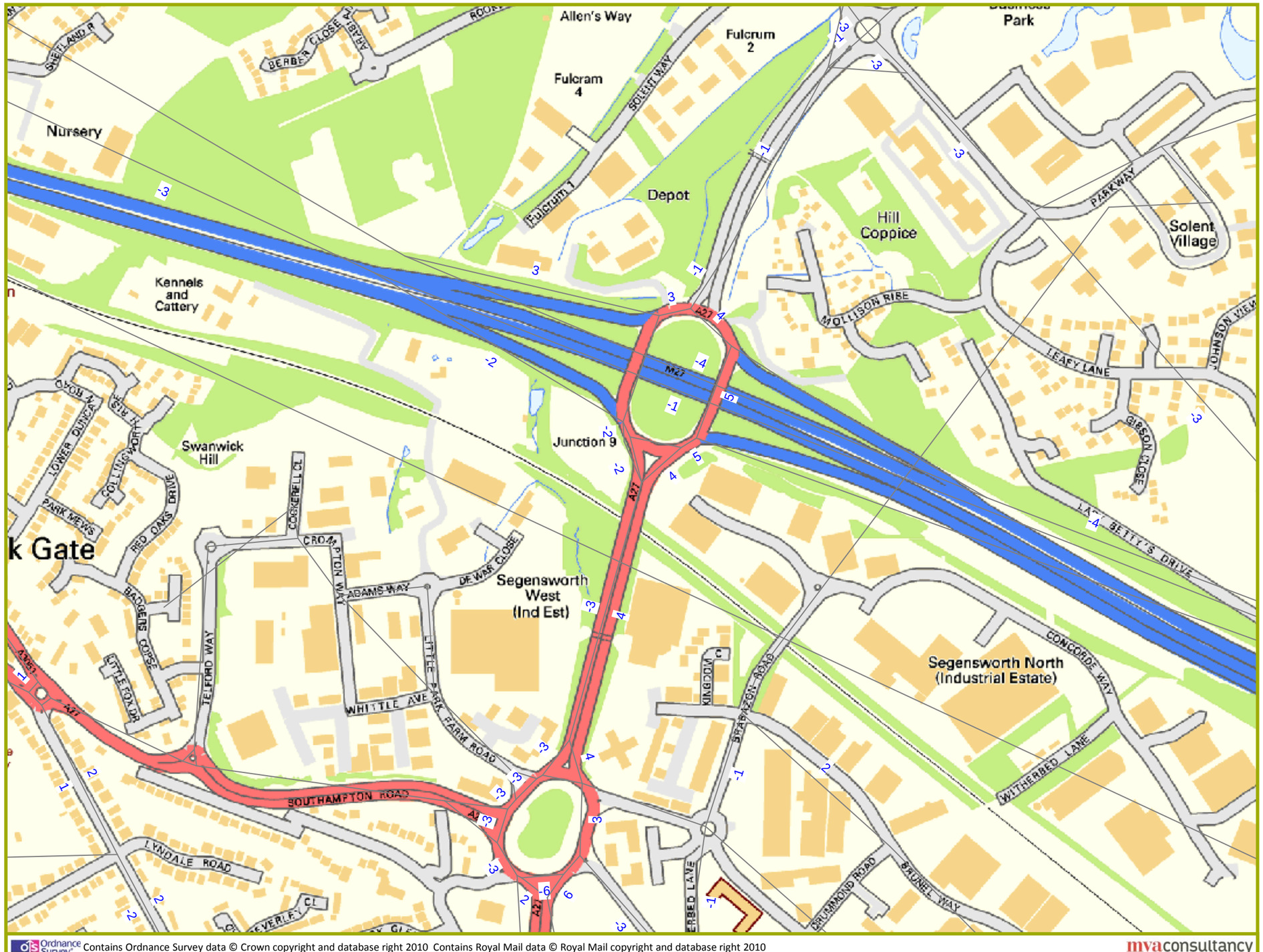


Figure 4.44 - PM Peak Flow Difference M27 J9 zoom (Scenario 2 v Scenario 3)

Figure 4.45 - PM Peak Flow Difference M27 J11 zoom (Scenario 2 v Scenario 3)

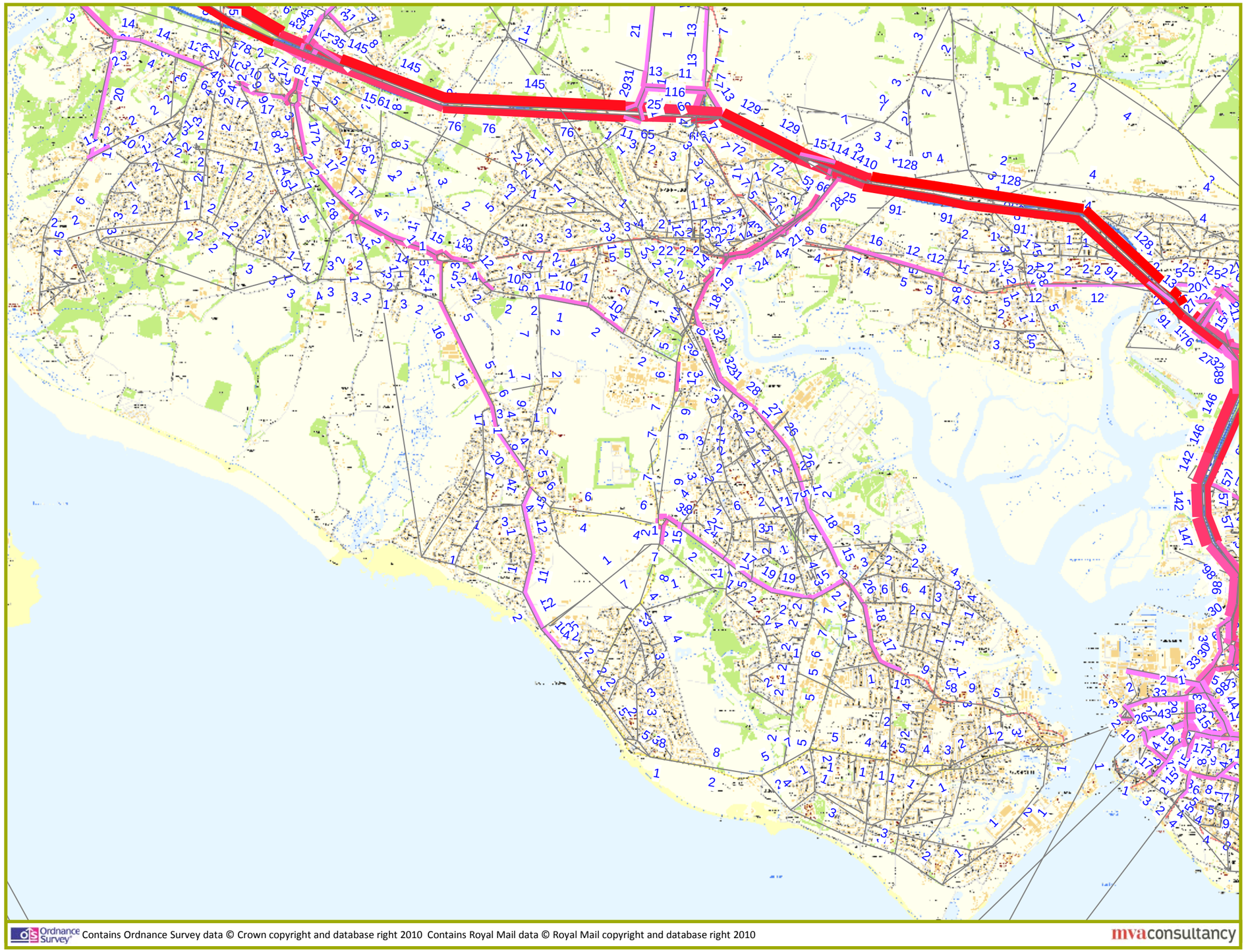


Figure 4.46 - PM Peak Supressed Flow (Scenario 3)

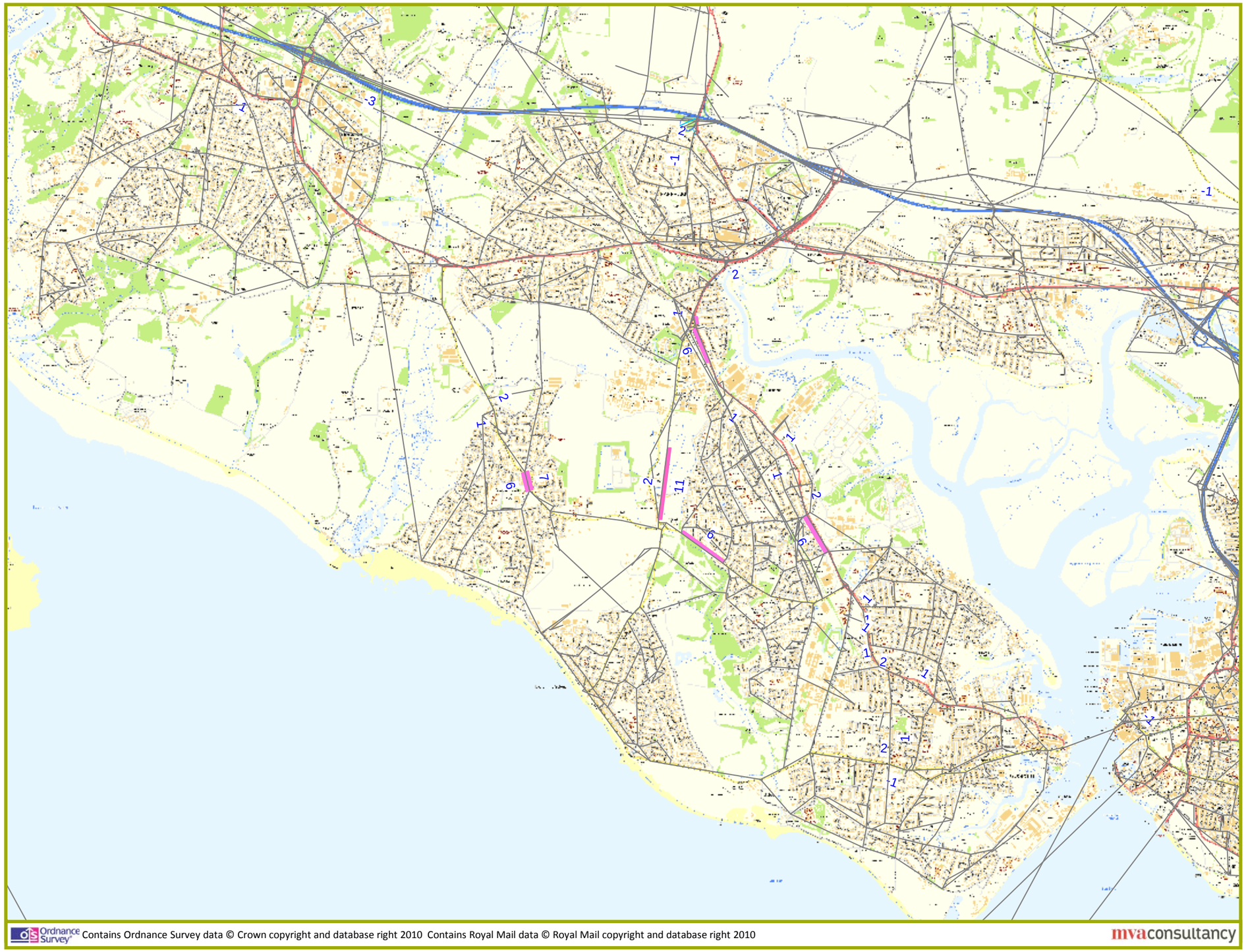


Figure 4.47 - PM Peak Delay Difference (Scenario 2 v Scenario 1)

Figure 4.48 - PM Peak Delay Difference Gosport zoom (Scenario 2 v Scenario 1)

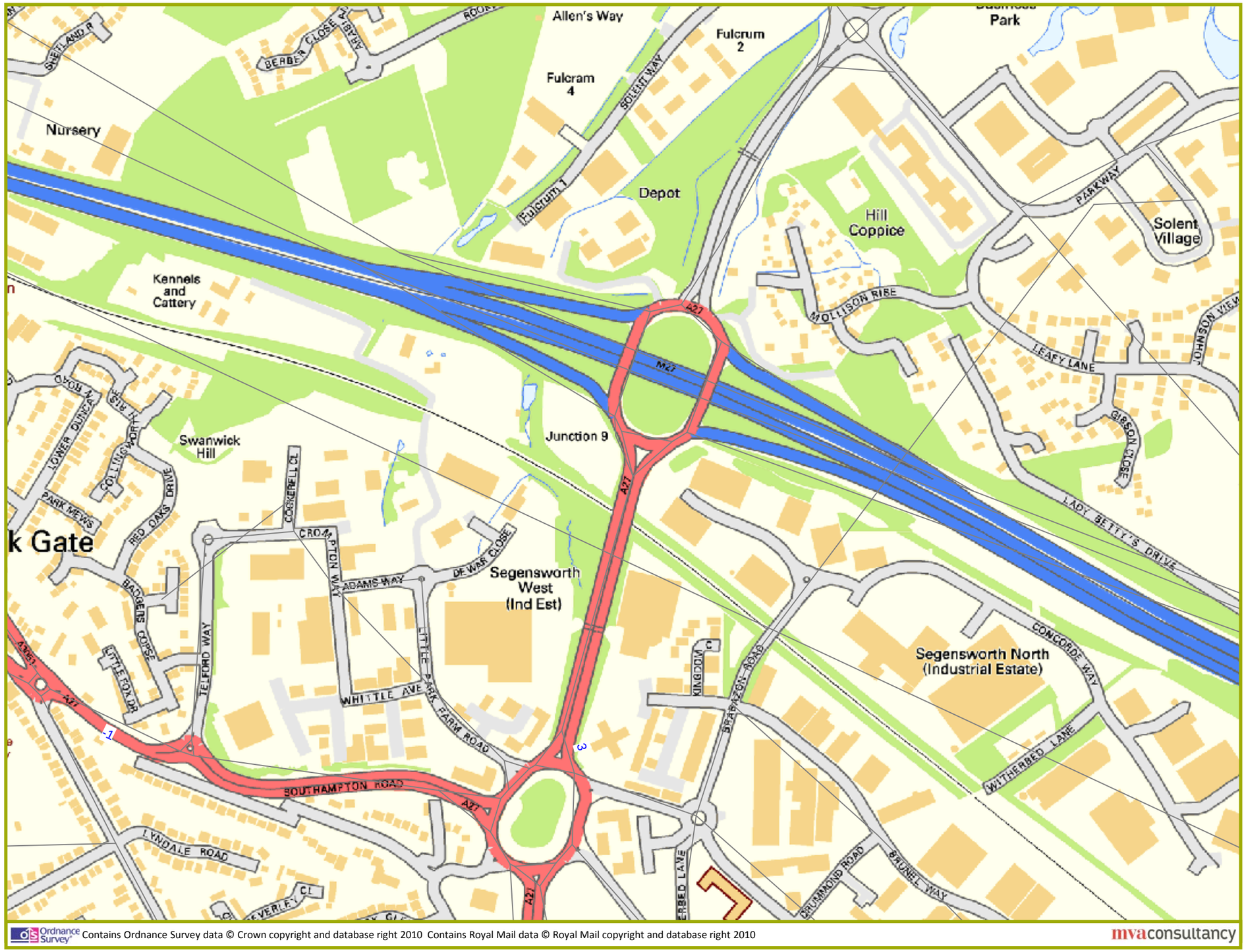


Figure 4.49 - PM Peak Delay Difference M27 J9 zoom (Scenario 2 v Scenario 1)

Figure 4.50 - PM Peak Delay Difference M27 J11 zoom (Scenario 2 v Scenario 1)

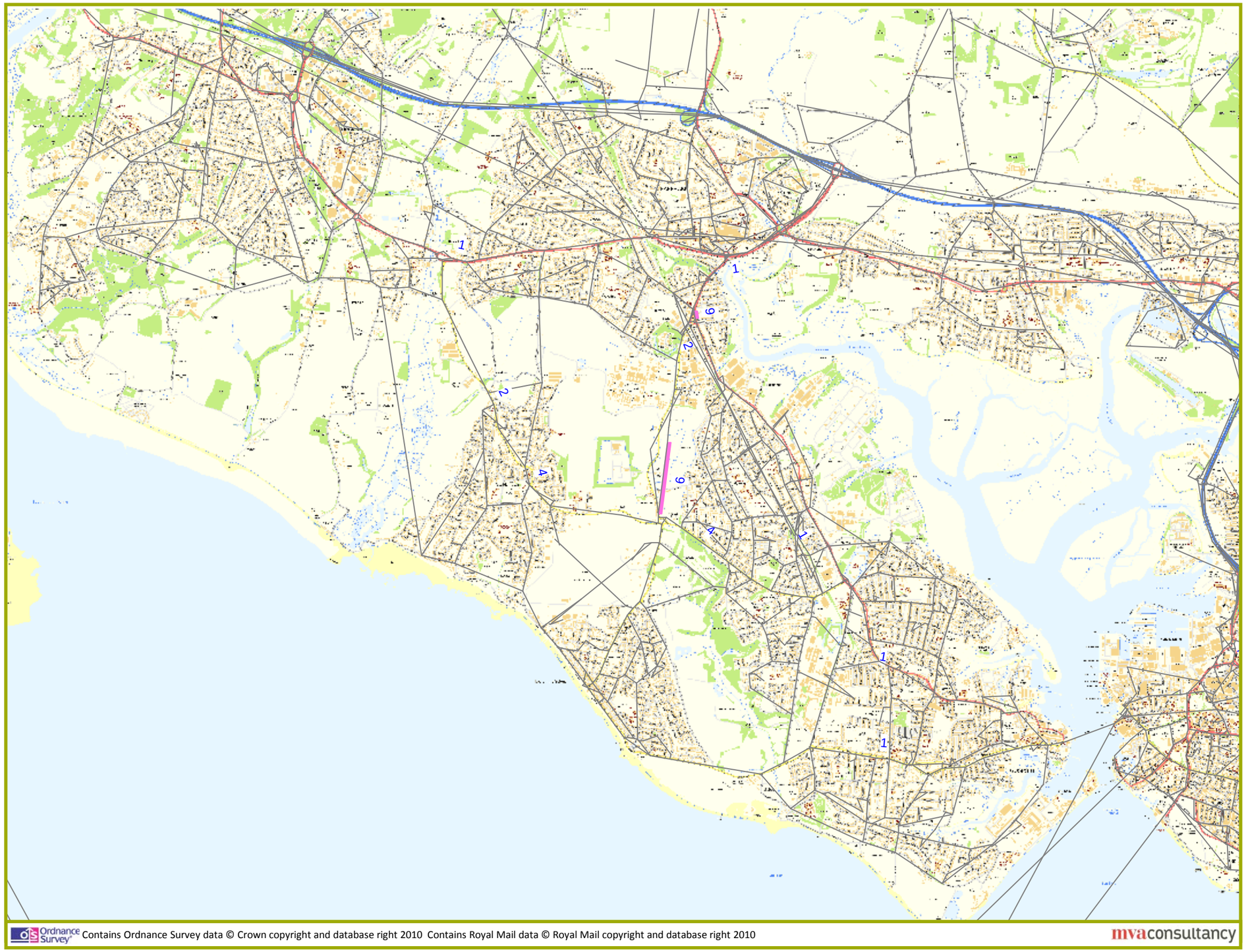


Figure 4.51 - PM Peak Delay Difference (Scenario 2 v Scenario 3)

Figure 4.52 - PM Peak Delay Difference Gosport zoom (Scenario 2 v Scenario 3)

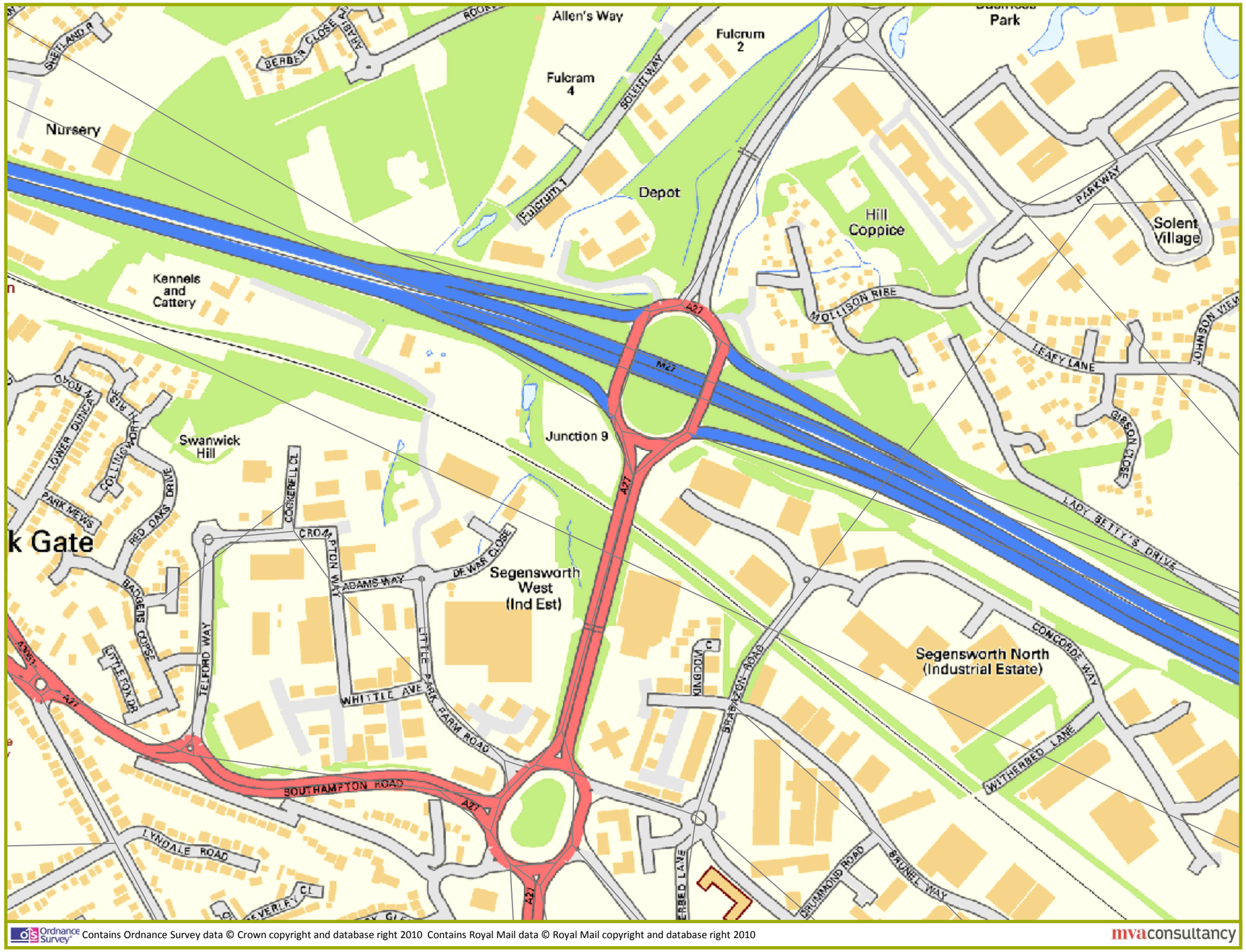


Figure 4.53 - PM Peak Delay Difference M27 J9 zoom (Scenario 2 v Scenario 3)

Figure 4.54 - PM Peak Delay Difference M27 J11 zoom (Scenario 2 v Scenario 3)

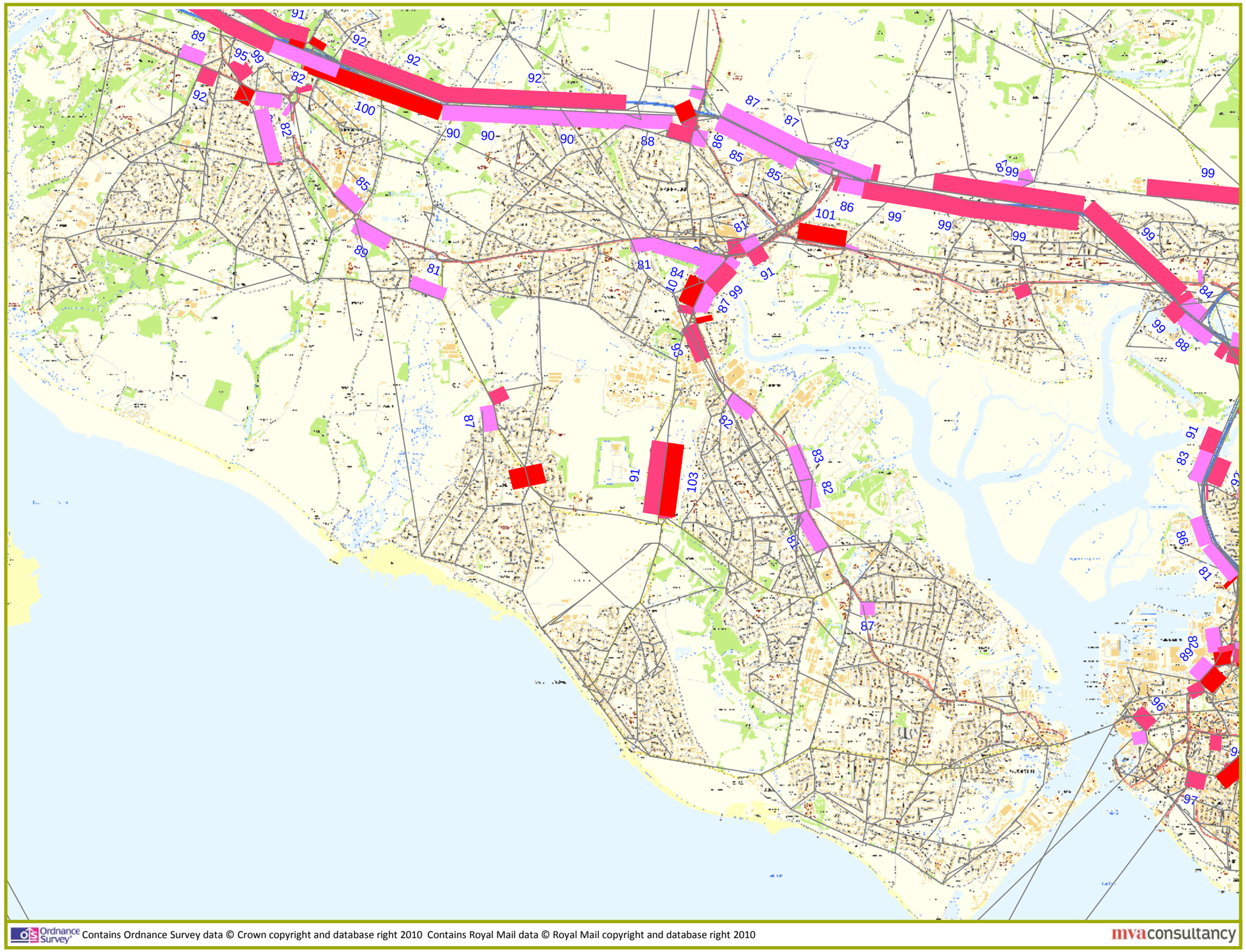


Figure 4.55 - PM Peak Volume over Capacity (Scenario 1)

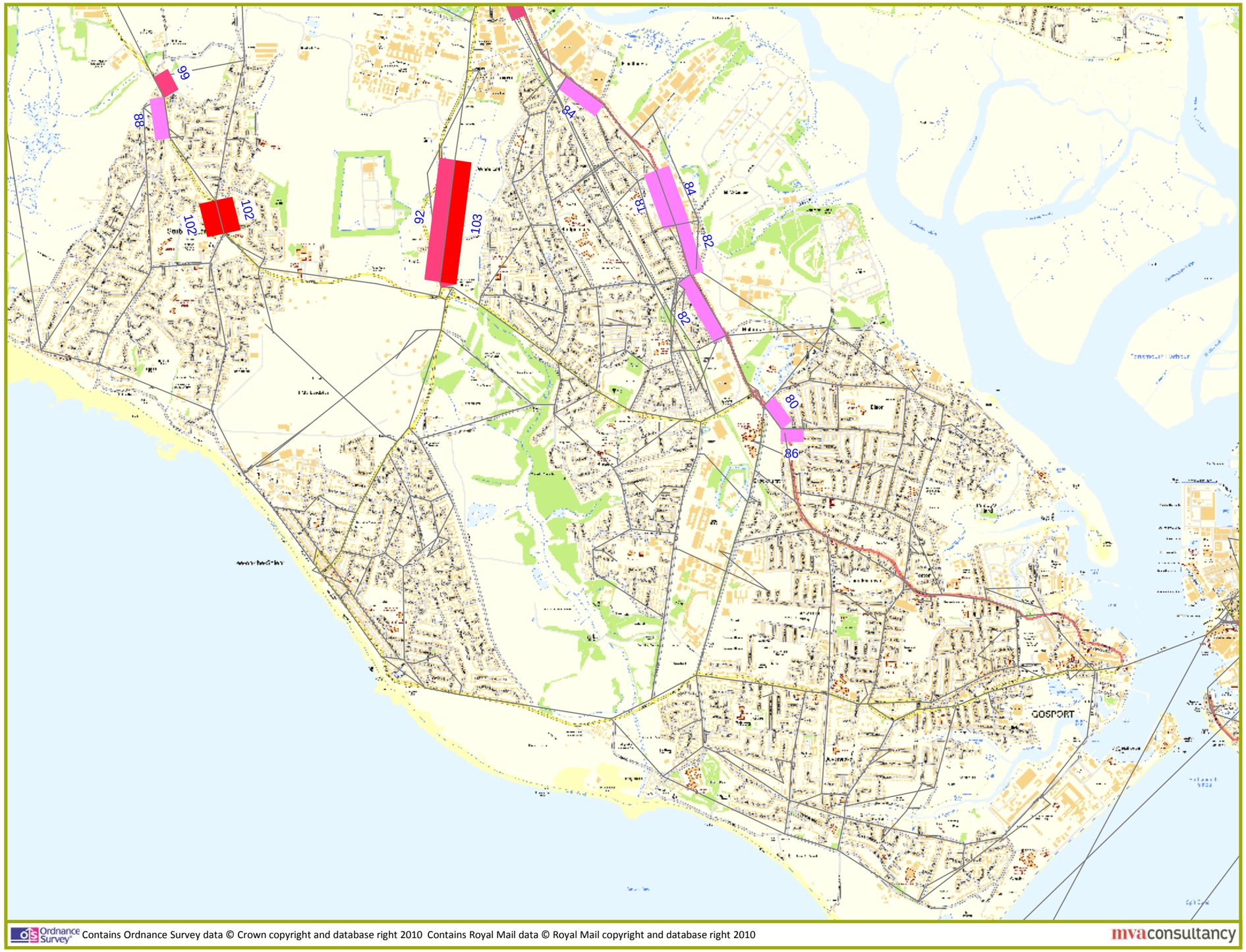


Figure 4.56 - PM Peak Volume over Capacity Gosport zoom (Scenario 1)

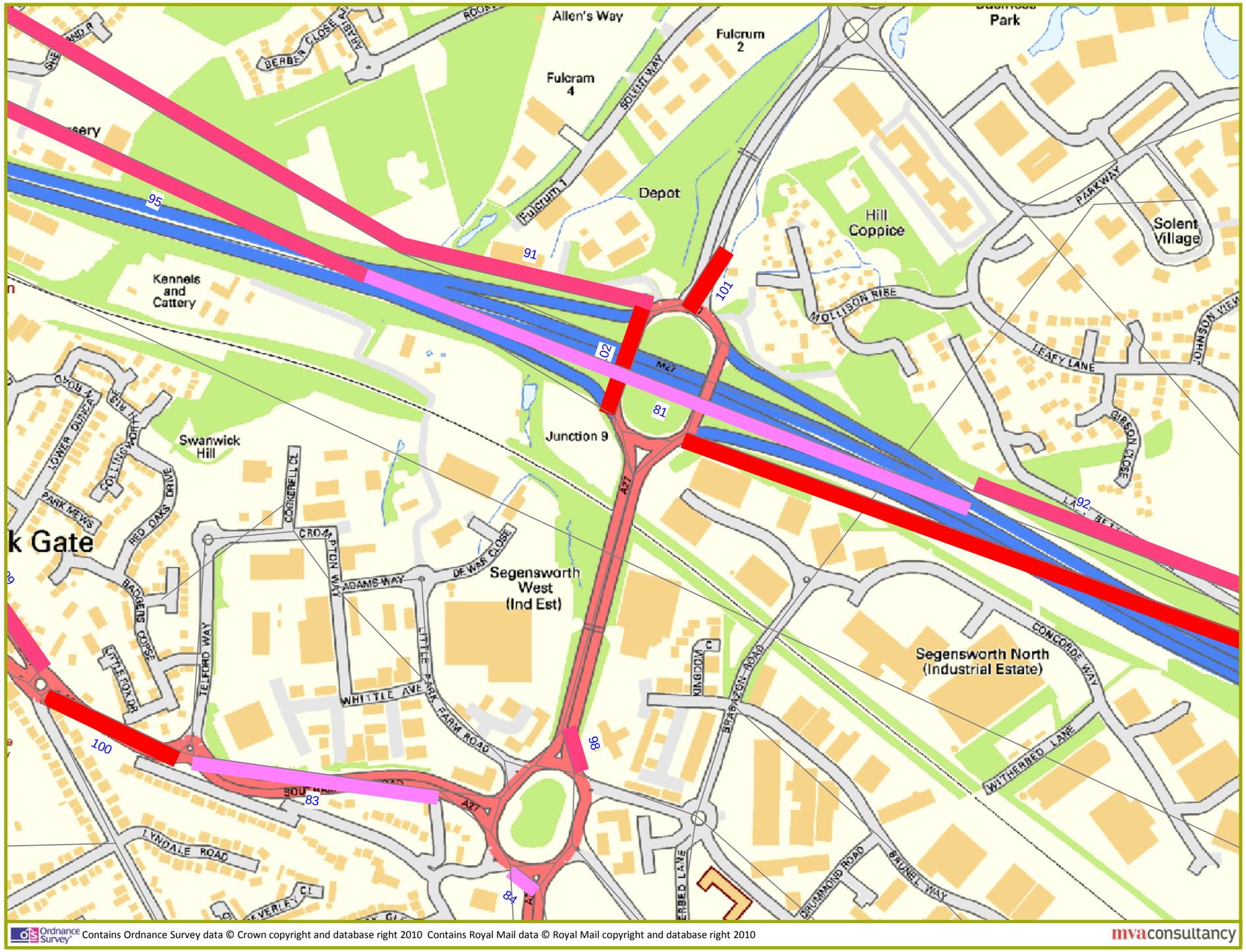


Figure 4.57 - PM Peak Volume over Capacity M27 J9 zoom (Scenario 1)

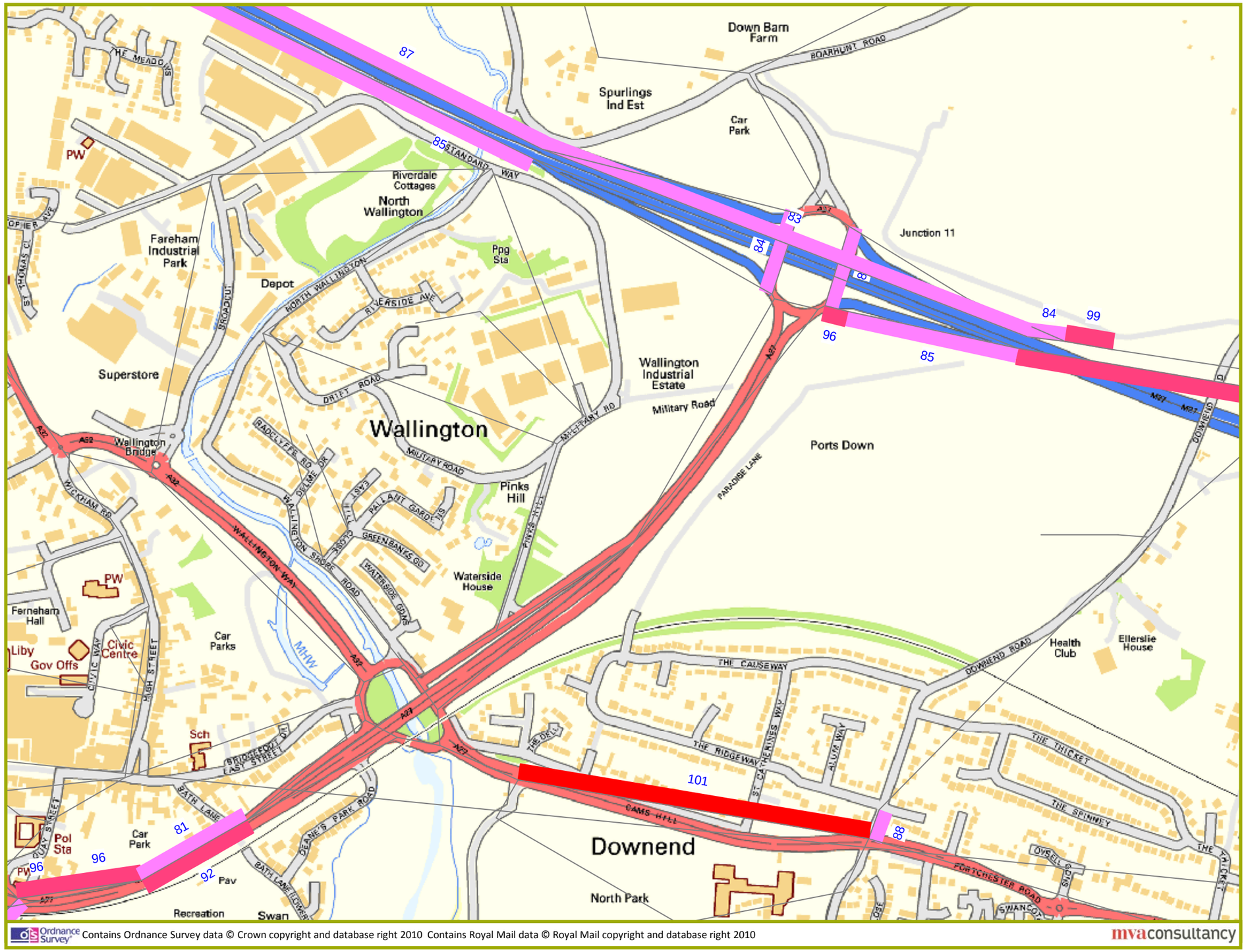


Figure 4.58 - PM Peak Volume over Capacity M27 J11 zoom (Scenario 1)

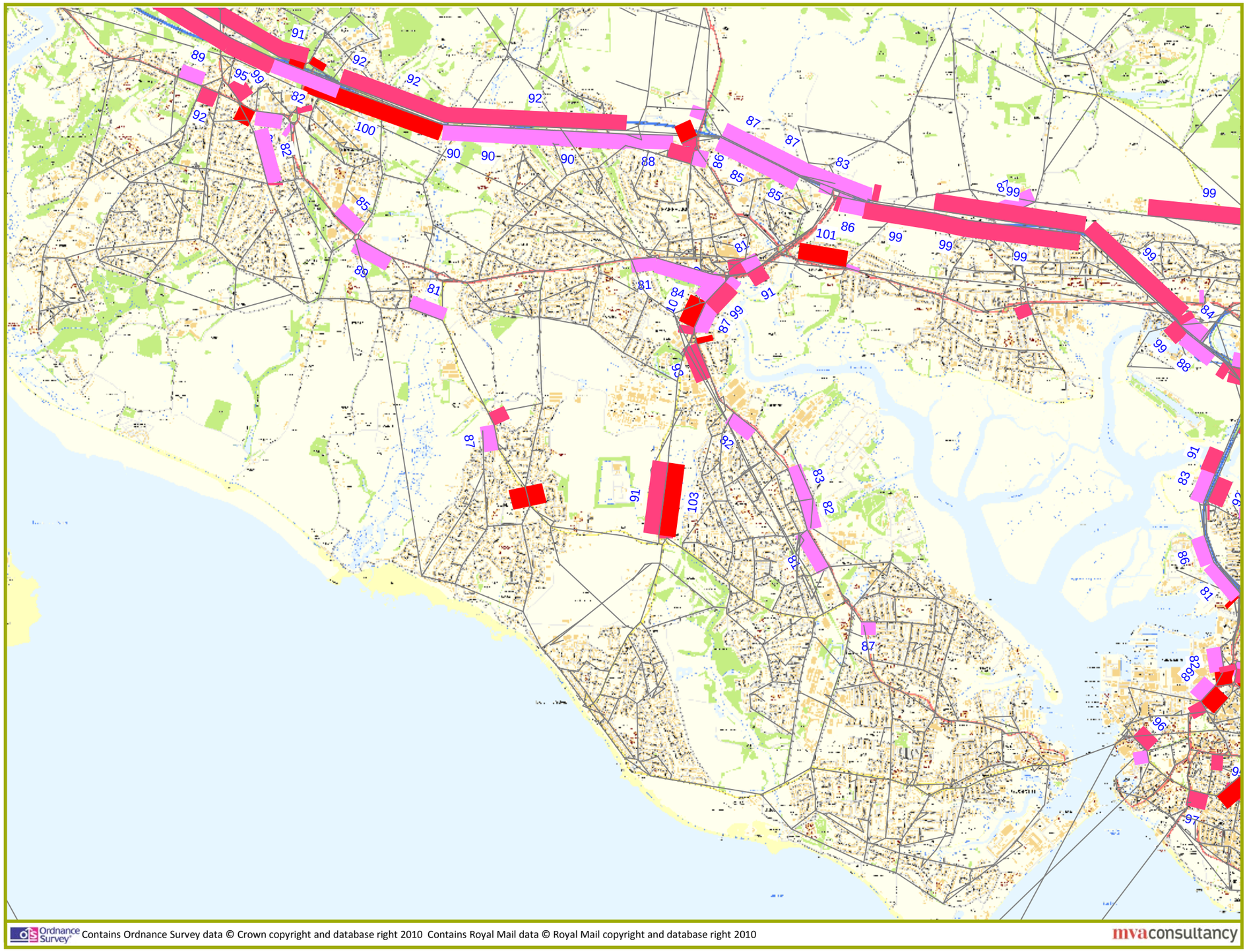


Figure 4.59 - PM Peak Volume over Capacity (Scenario 2)

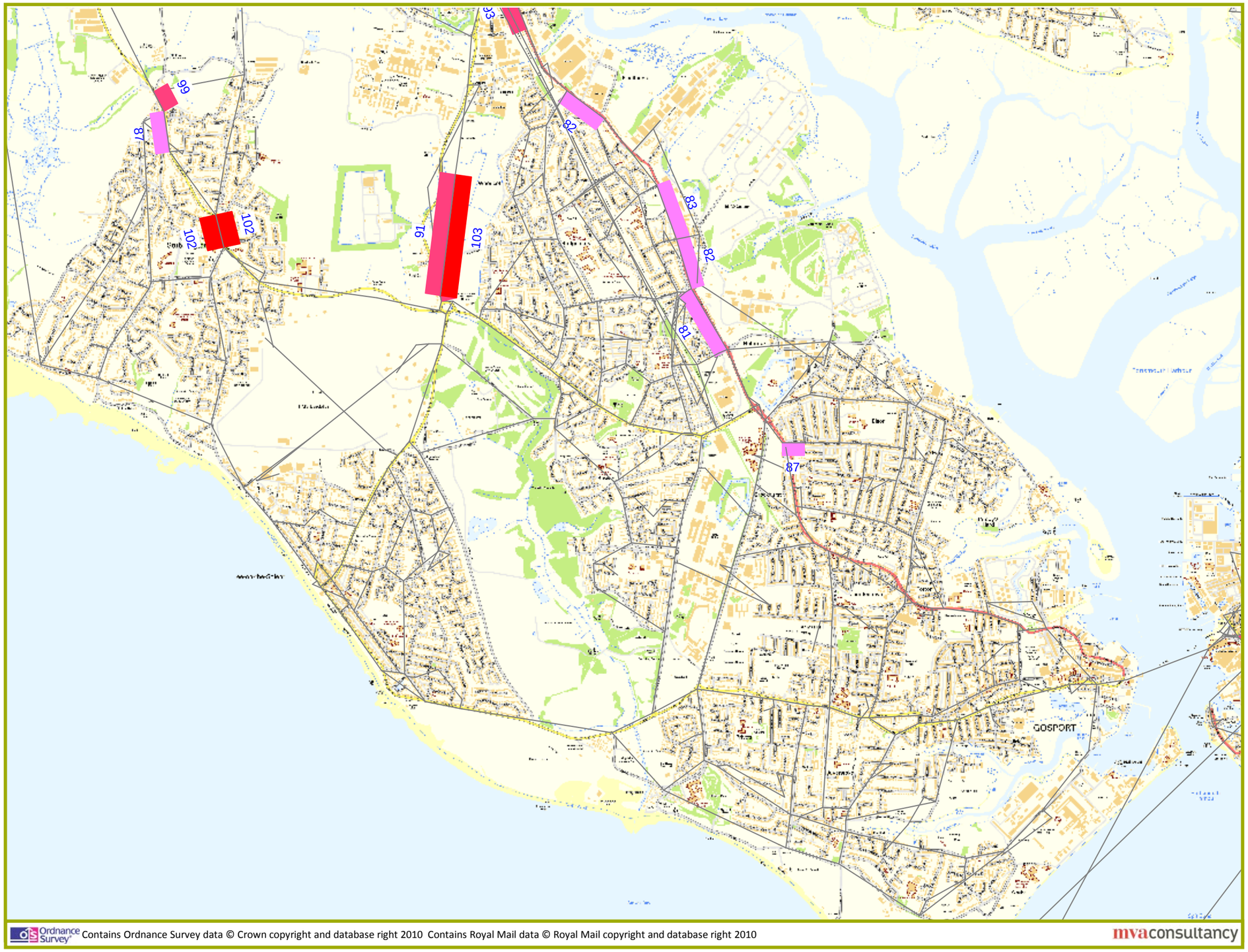


Figure 4.60 - PM Peak Volume over Capacity Gosport zoom (Scenario 2)

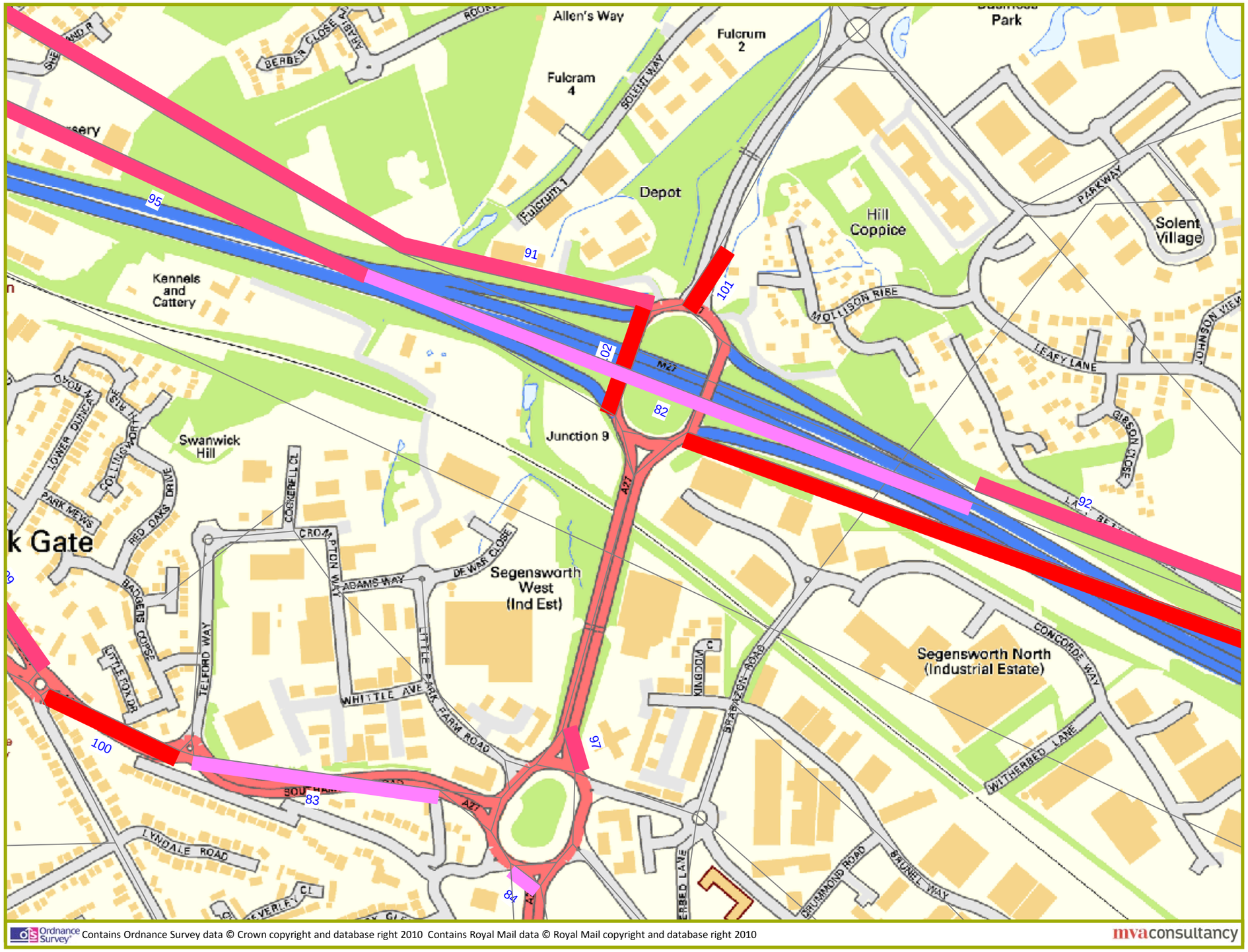


Figure 4.61 - PM Peak Volume over Capacity M27 J9 zoom (Scenario 2)

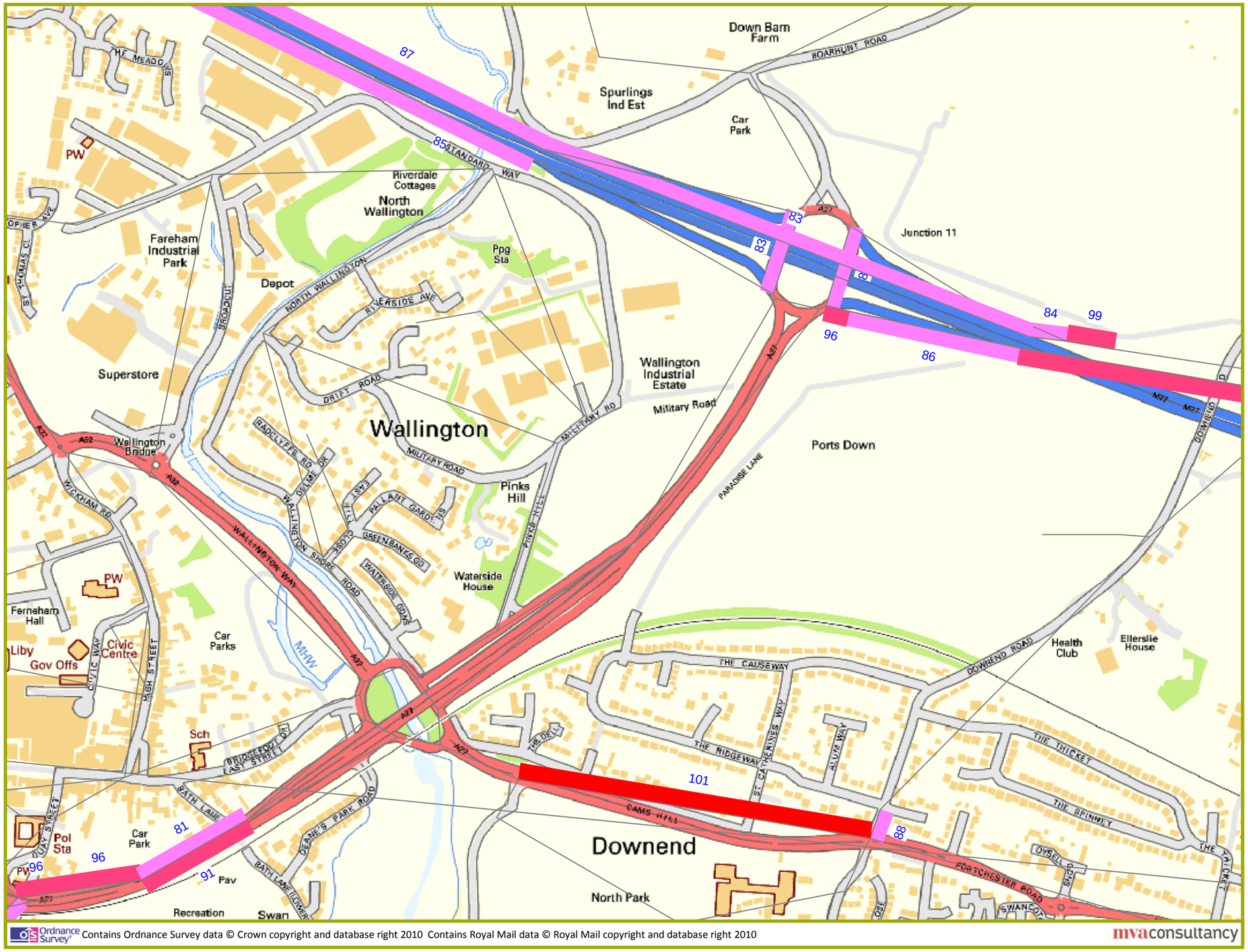


Figure 4.62 - PM Peak Volume over Capacity M27 J11 zoom (Scenario 2)

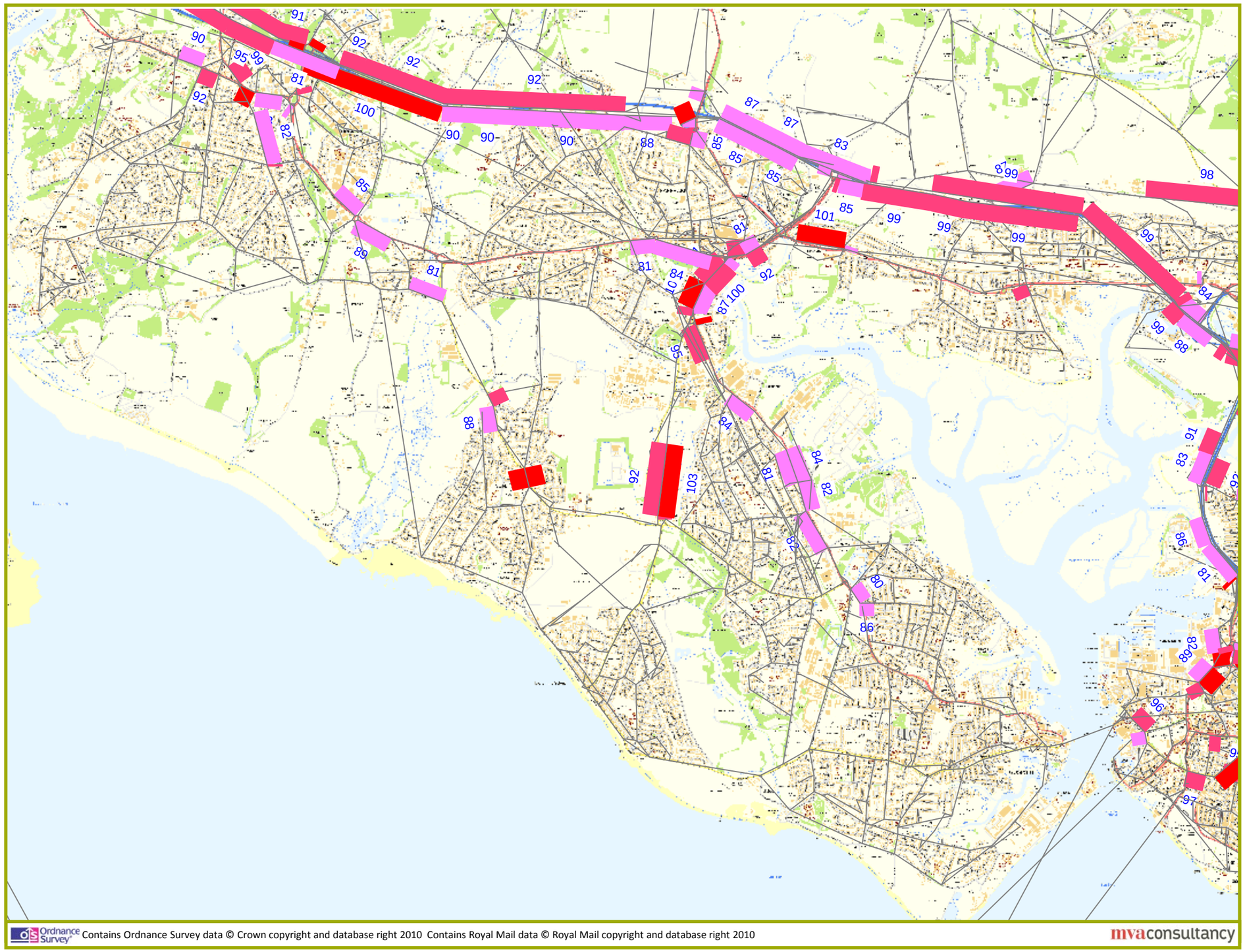


Figure 4.63 - PM Peak Volume over Capacity (Scenario 3)

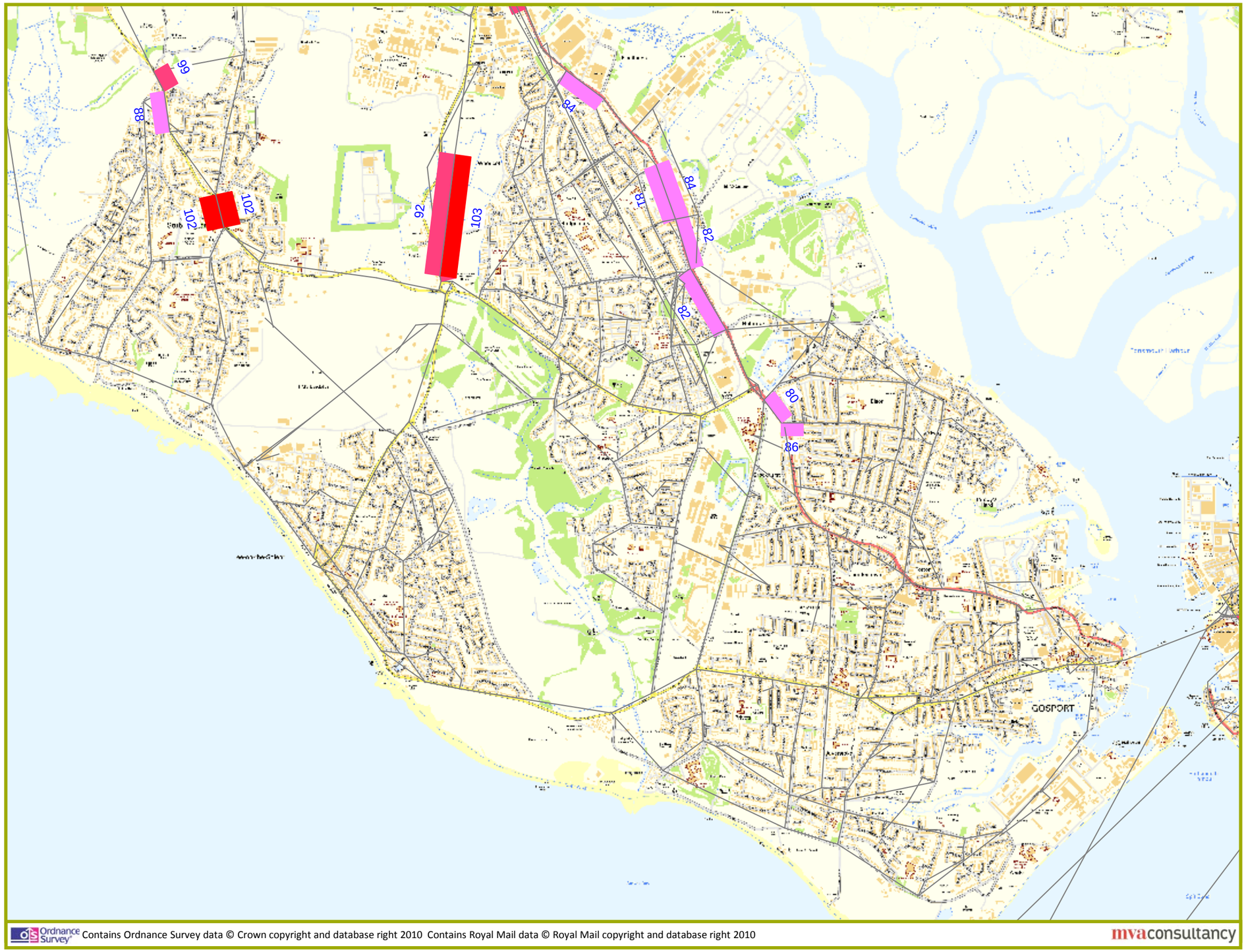


Figure 4.64 - PM Peak Volume over Capacity Gosport zoom (Scenario 3)

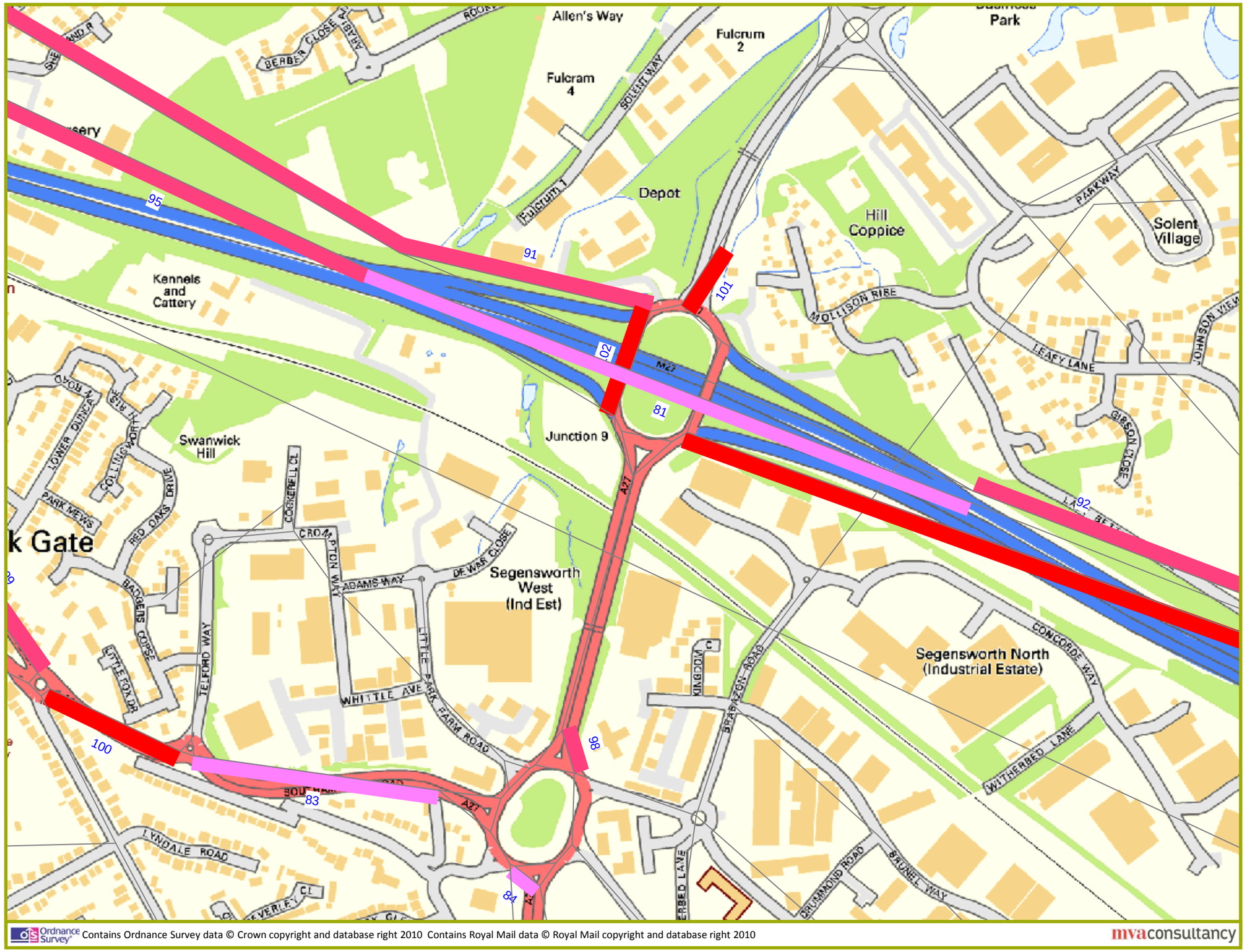


Figure 4.65 - PM Peak Volume over Capacity M27 J9 zoom (Scenario 3)

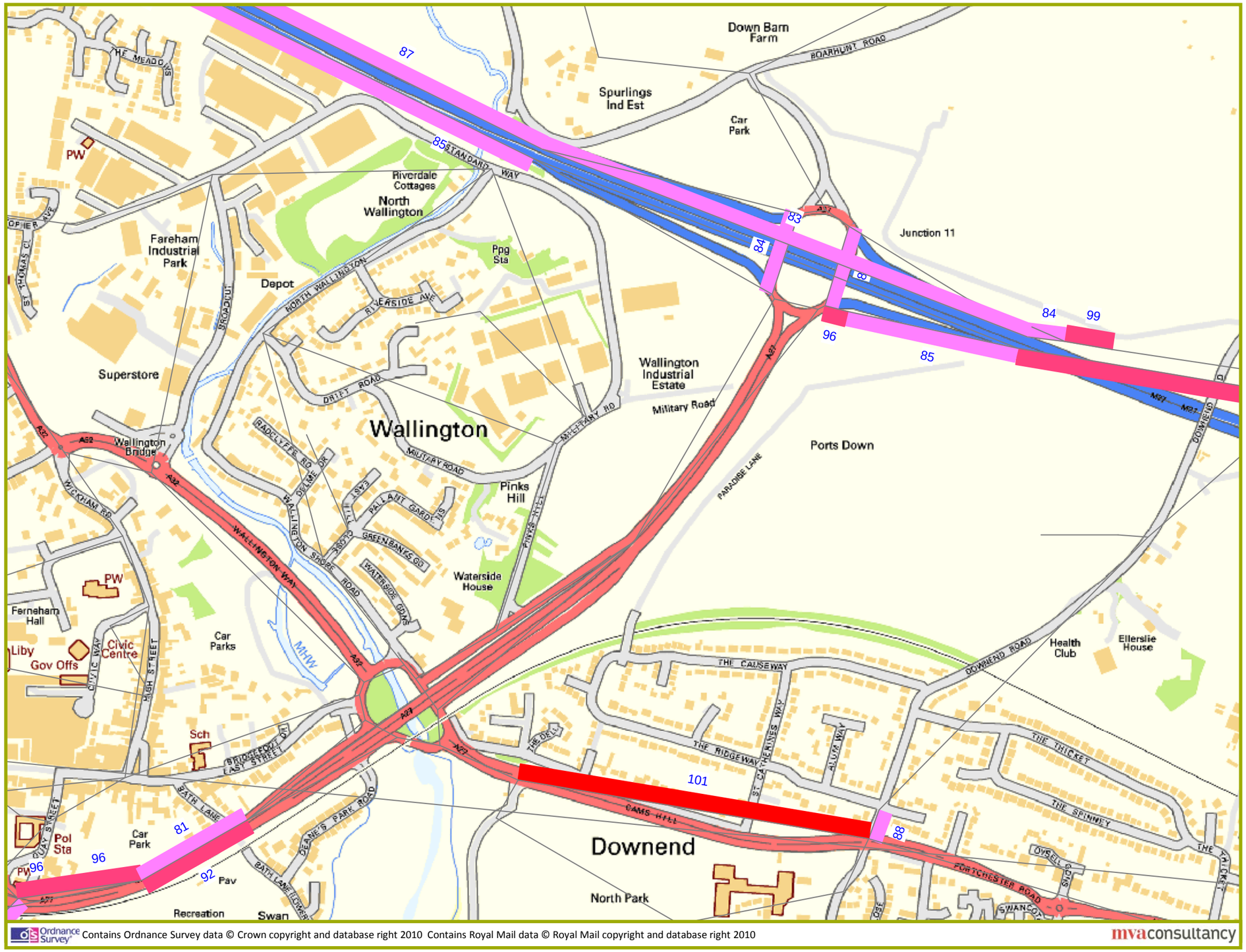


Figure 4.66 - PM Peak Volume over Capacity M27 J11 zoom (Scenario 3)

5 Public Transport Model Results

5.1 Introduction

5.1.1 This chapter summarises the Public Transport outputs for the Local Plan SRTM tests across the Borough as a whole and also for the test isolating the impact of the Waterfront development. All outputs relate to a forecast year of 2031.

5.1.2 Each output provides a comparison of the forecast highway performance in 2031 with and without the draft development allocations:

- Scenario 1 - Do Minimum 2031 – Without Gosport Local Plan Development
- Scenario 2 - Do Something 2031 – With Gosport Local Plan Development
- Scenario 3 - Waterfront Do Minimum 2031 – With Gosport Local Plan Development excluding Waterfront

5.2 Public Transport Network Performance

5.2.1 Table 5.1 and Table 5.2 summarise key PT network statistics for the full SRTM core study area and for Gosport Borough for both peak periods.

5.2.2 The changes to Bus Passenger Hours and Kilometres across the wider SRTM core highway network are negligible. However, within Gosport both parameters increase by 7-8% in Scenario 2 compared to Scenario 1 (i.e. impact of all Gosport Local Plan Development) and by 1-2% in Scenario 3 compared to Scenario 2 (i.e. impact of just Waterfront Development). Passengers on the ferry between Gosport and Portsmouth increase by approximately 10% in Scenario 2 (approximately 3% in Scenario 3) towards Portsmouth in the AM and towards Gosport in the PM.

Table 5.1 AM Period (07:00-10:00) Core & Gosport Borough PT Network Statistics

Core Area	Scenario1 No GBC Plan	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
Bus Boardings	15976	15990	15972	14	0.09%	18	0.11%
Bus Pass Hrs	7170	12241	12223	10	0.1%	18	0.2%
Bus Pass Kms	577329	577634	577070	305	0.1%	564	0.1%
Gosport							
Bus Boardings	856	915	904	59	6.45%	11	1.20%
Bus Pass Hrs	162	175	172	13	8.0%	3	1.8%
Bus Pass Kms	4077	4394	4318	317	7.7%	76	1.8%
Gosport to Portsmouth Ferry Pax	347	385	371	38	10.9%	13	3.5%
Portsmouth to Gosport to Ferry Pax	93	97	97	4	4.3%	0	0.0%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

Table 5.2 PM Period (16:00-19:00) Core & Gosport Borough PT Network Statistics

Core Area	Scenario1 No GBC Plan	Scenario2 GBC Plan	Scenario3 Exc Wft	Diff (S2 - S1)		Diff (S2 - S3)	
				Abs	%	Abs	%
Bus Boardings	15533	15576	15571	43	0.28%	5	0.03%
Bus Pass Hrs	12024	12022	12016	-2	-0.01%	6	0.05%
Bus Pass Kms	564548	56417	564461	169	0.03%	256	0.04%
Gosport							
Bus Boardings	753	792	792	39	4.92%	0	0.00%
Bus Pass Hrs	223	240	236	17	7.6%	4	1.7%
Bus Pass Kms	5550	5950	5863	400	7.3%	87	1.5%
Gosport to Portsmouth Ferry Pax	170	175	175	5	2.9%	0	0.00%
Portsmouth to Gosport to Ferry Pax	350	383	371	33	9.4%	12	3.2%

SRTM Ref: S1 ADK, S2 ADL, S3 ADM.

5.3 Change in Public Transport Flows

5.3.1 Figures 5.1 and 5.2 identify the change in public transport flow in the AM between Scenarios 1 and 2 and between Scenarios 2 and 3 respectively (Figures 5.3 and 5.4 for the PM peak). These plots identify where the net change to passenger flow is most pronounced.

5.3.2 For the flow difference plots, the absolute difference in passengers is identified adjacent to the appropriate link. Blue lines identify a reduction compared to the non-development scenario and pink/red lines an increase. In addition, the scale of the change is represented graphically with the coloured lines of varying bandwidth. Only flow differences of 5 passengers or greater are displayed in the plots.

5.3.3 Given the forecast congested nature of the wider highway network it is expected that some of the observed increase in public transport patronage (predominantly bus and ferry as there is no Gosport Rail Station) is a result of the PT offer becoming more appealing.

5.3.4 For Scenario 2 the largest change in passenger flows (an increase of 38 passengers) is observed in the AM peak for those using the ferry to cross between Gosport and Portsmouth. For Bus travel in the AM peak the changes in Gosport are mostly occurring on the northbound BRT routes out of the borough.

5.3.5 The greatest change in the PM for Scenario 2 is also seen on the ferry crossing (33 passengers). In contrast to the AM peak the main changes in passenger flows in the PM peak are inbound (south) to Gosport with an increase of around 30 passengers on the BRT route on the northern part of the A32.

5.3.6 For Scenario 3 compared to Scenario 2 the Waterfront development results in an additional 10 trips on the BRT route in the AM peak that uses the A32 / busway. There are also an additional 14 trips on the ferry from Gosport to Portsmouth in the AM peak.

5.3.7 During the PM peak the Waterfront development (Scenario 2 vs Scenario 3) results in a similar number of additional passengers as during the AM peak – 10 passengers on the A32 / busway BRT route. There are also an additional 12 passengers using the ferry from Portsmouth to Gosport.

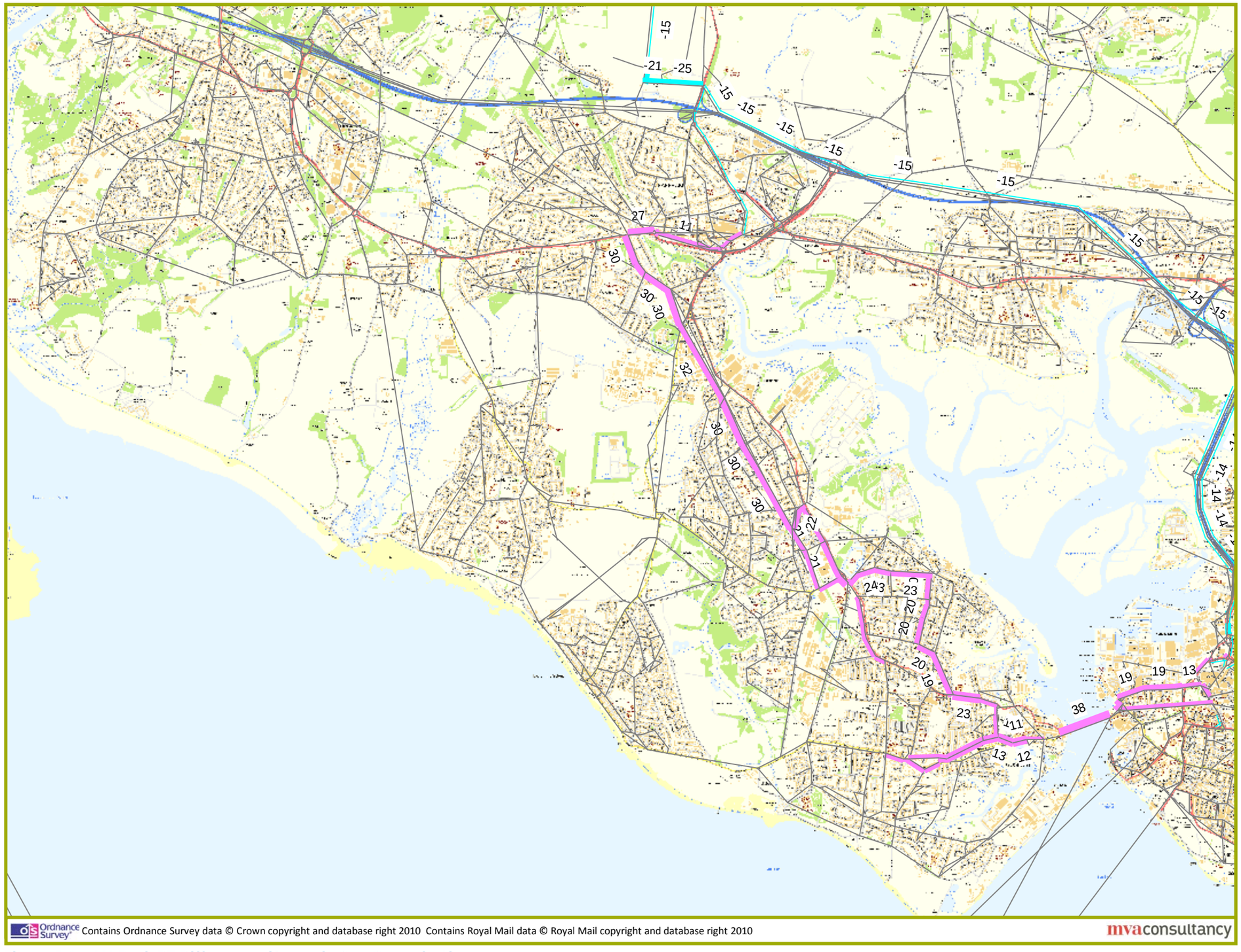


Figure 5.1 - AM Peak PT Differences (Scenario 2 vs Scenario 1)

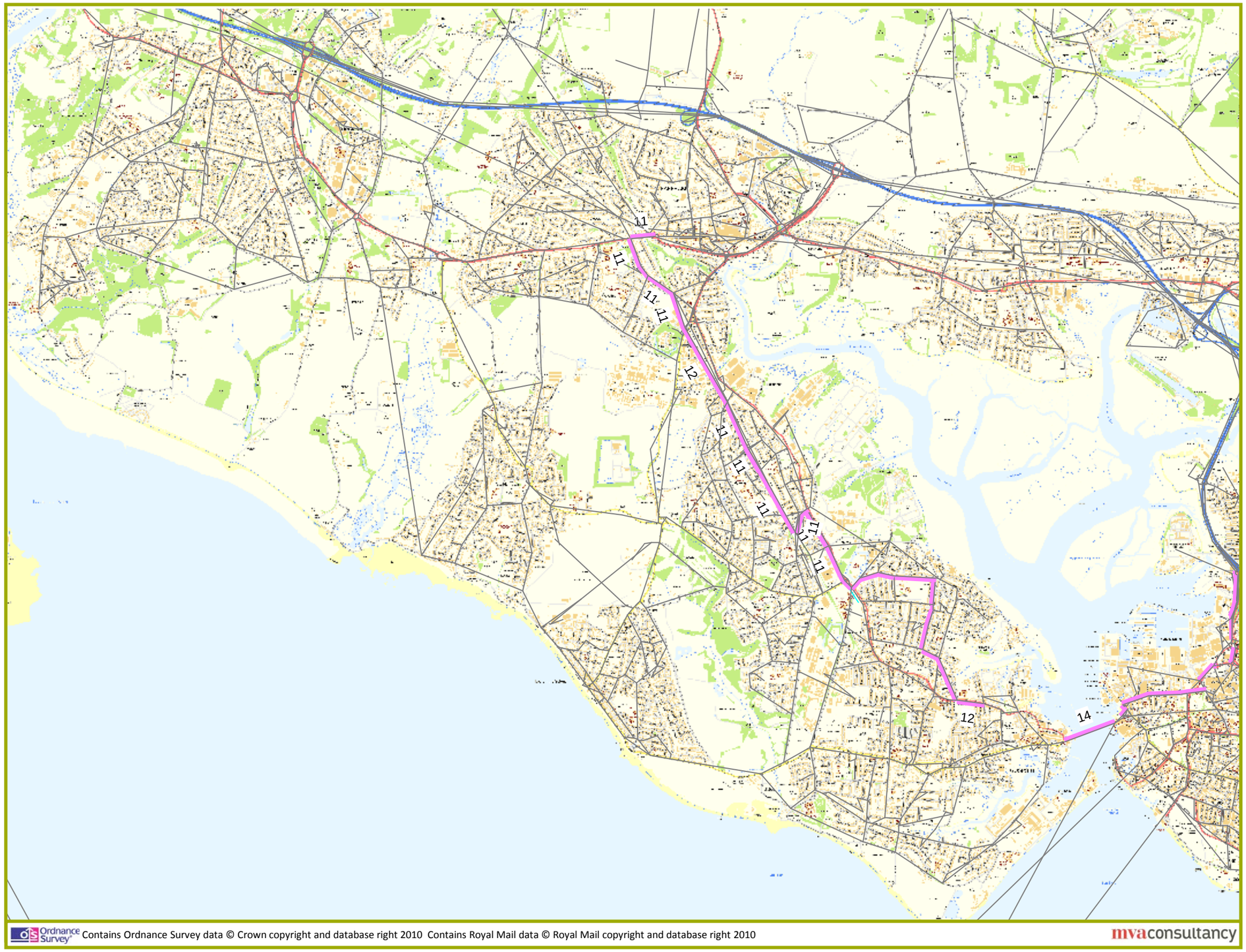


Figure 5.2 - AM Peak PT Differences (Scenario 2 vs Scenario 3)

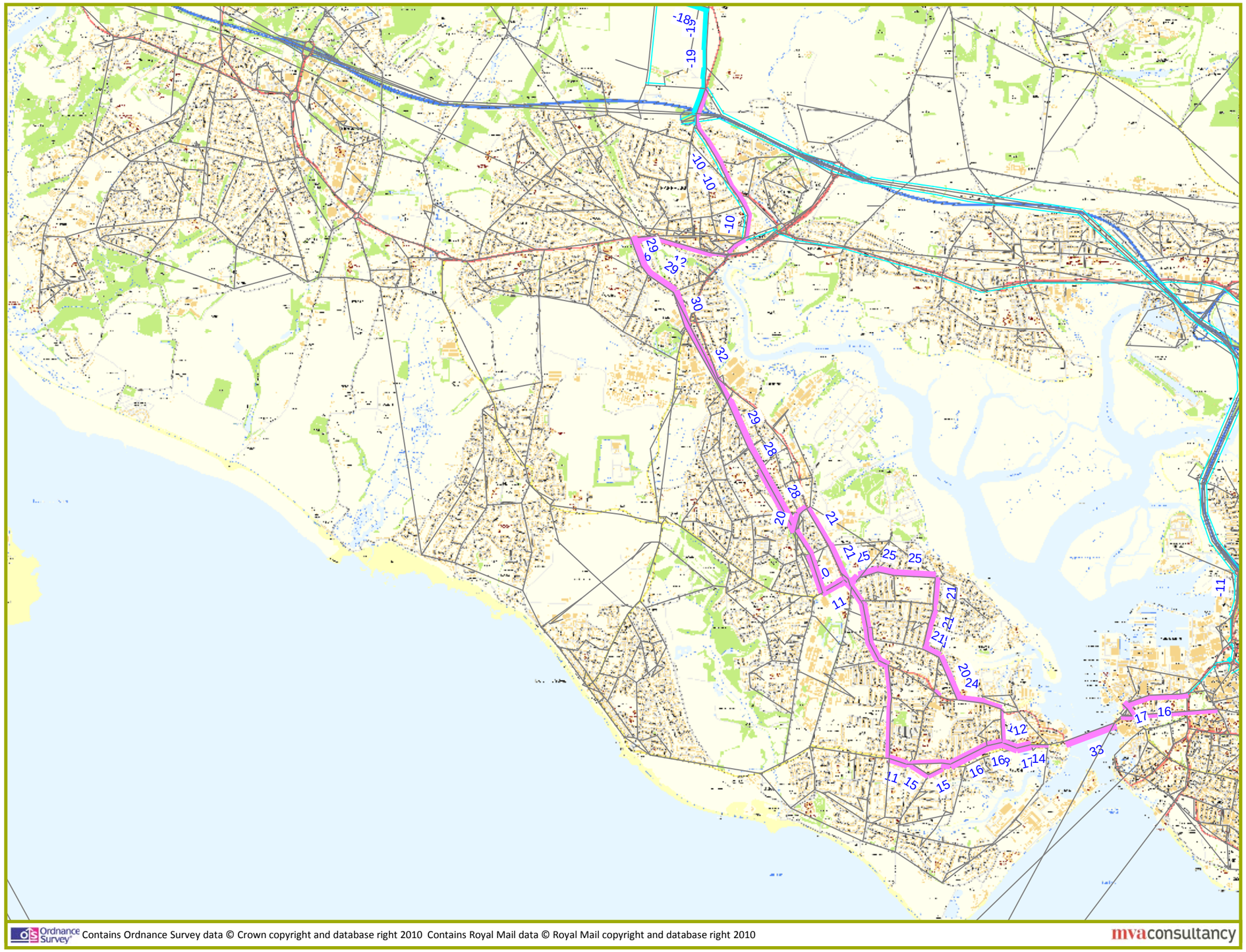


Figure 5.3 - PM Peak PT Differences (Scenario 2 vs Scenario 1)

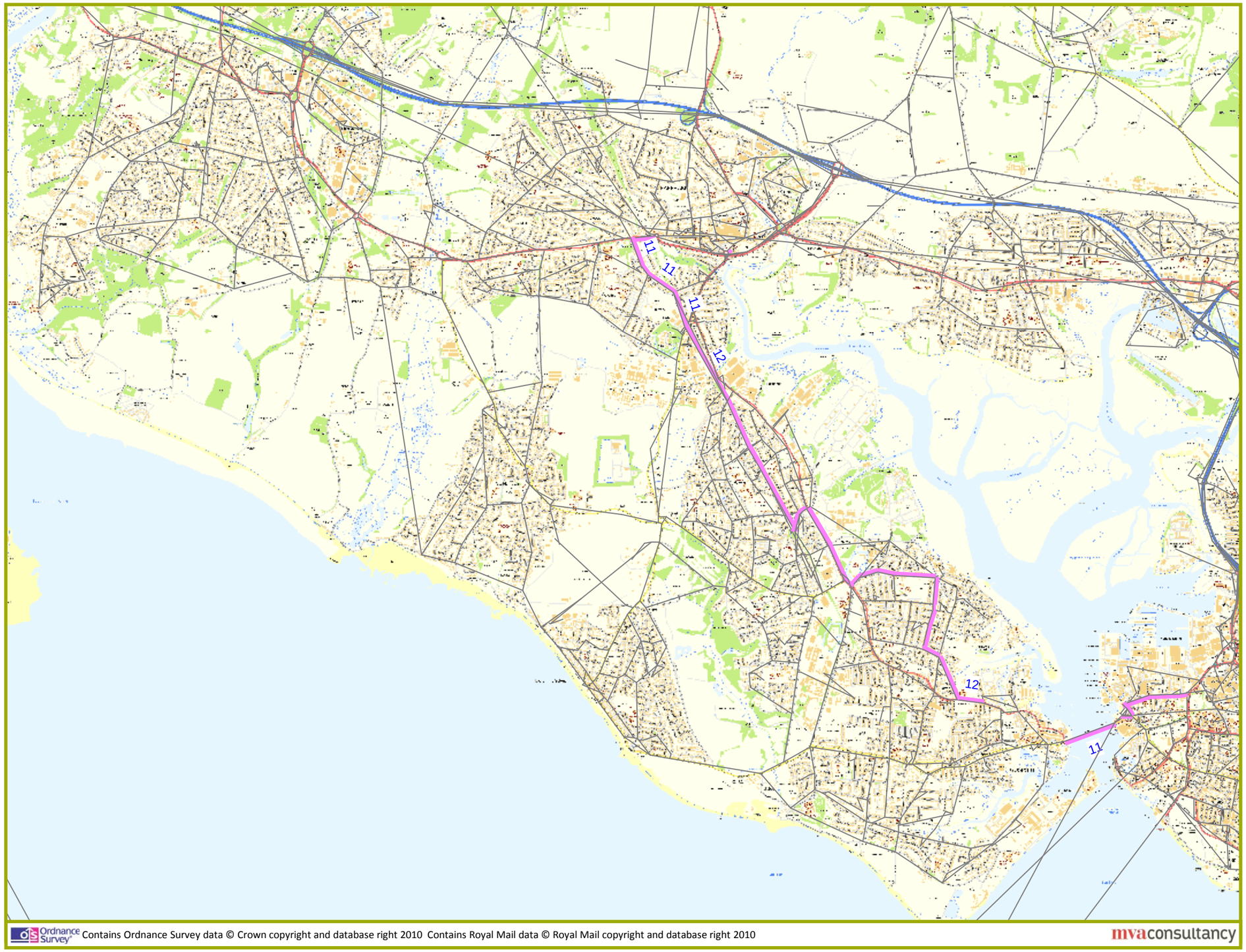


Figure 5.4 - PM Peak PT Differences (Scenario 2 vs Scenario 3)

6 Summary

6.1 Summary

6.1.1 Gosport Borough Council is preparing its Local Plan for adoption in 2014. To help inform and evidence the Plan, TfSHIoW's SRTM has been used to assess the transport implications of the proposed land allocations for the period up to 2031.

6.1.2 Three scenarios have been modelled within SRTM to enable the impact of the potential development sites can be isolated and assessed:

- **Scenario 1 – Do Minimum 2031 – Without Gosport Local Plan Development.** All completed and committed developments in Gosport as at 31st March 2013, plus Daedalus and Welborne (September 2013 assumptions) and all other development in accordance with the reference case.
- **Scenario 2 – Do Something 2031 – With Gosport Local Plan Development.** As scenario 1 plus permissible developments planned in Gosport.
- **Scenario 3 – Waterfront Do Minimum 2031 – With Gosport Local Plan Development excluding Waterfront.** As scenario 2 with Waterfront omitted to enable impacts of Waterfront to be separately identified by comparison of scenarios 2 and 3.

6.1.3 From analysis of Scenario 1, without Gosport Local Plan development, it is apparent that by 2031 the highway network is already forecast to experience capacity problems particularly on the routes towards and including M27, as a result of forecast development prior to inclusion of the Gosport Local Plan. These capacity limitations supress the ability and demand for travel to some degree, even before the demand for additional trips from the Gosport Local Plan development are included in Scenario 2.

6.1.4 The actual flow changes resulting from the Local Plan development are relatively modest with the largest increases in traffic flow shown as 75 and 78 vehicles in the AM and PM peaks respectively. Due to existing highway congestion the flow changes are largely limited to the Gosport and South Fareham areas with little (up to 20 and 15 vehicles in the AM and PM peaks respectively) additional traffic reaching the A27 and M27. As would be expected the level of supressed highway demand is forecast to increase as a result of the Local Plan development but it is also likely that the level of containment within Gosport is greater than if there was less congestion on the wider network (i.e. local jobs, e.g. Daedalus, are filled by local residents). Consistent with the modest flow changes the actual performance of key junctions is not significantly worsened by the Local Plan traffic albeit a number of junctions are already at capacity. There are only 3 junctions that experience a measurable increase in volume over capacity and these increases never exceed 2%.

6.1.5 Public Transport patronage is forecast to increase with a 10% increase in passengers on the Gosport-Portsmouth ferry, an 8% increase in bus passenger hours and kilometres and a 5% to 6% increase in bus boardings. It would be expected that PT patronage is also influenced by the general highway congestion that supresses highway trips.

6.1.6 The Local Plan proposals produce a modest (2.9%) increase in the proportion of Gosport journeys that are made internally within the borough (up to 47.2% from 45.8%). The mode

share of journeys to, from and within Gosport shifts with the highway absolute proportion dropping by 0.5% and both PT and active modes increasing. This approximately equates to a relative 1% fall in the Highway share, a 1% relative increase in PT share, and a 1.6% increase in Active mode share.

6.1.7 The impact of the Local Plan on M27 Junctions 9 and 11 is small. As noted in 6.1.4 above the volume of traffic reaching M27 as a result of the Local Plan development is minimal (less than 25 vehicles) due to existing highway congestion between Gosport and the Motorway. The small flow changes have minimal impact on vehicle delay and capacity at Junctions 9 and 11.

6.1.8 Isolating the Waterfront development identifies a similar pattern of impacts to the full local plan but at a smaller scale with congestion beyond Gosport again restricting the wider impacts of Waterfront. At M27 Junctions 9 and 11 the change in traffic flow as a result of Waterfront is in the range of 10-15 vehicles in the peak hour. Similarly to the full Local Plan the impacts to delay and capacity at the two motorway junctions are minimal.

Appendix A – Glossary

Term	Description
Completed Development	Development that has been built and is now occupied. Within SRTM these will be included as 100% developed within all scenarios
Committed Development	Sites where planning approval has been granted and the development funded and programmed. Within SRTM these will be included as 100% developed within all scenarios in accordance with expected development timeframe.
Permissible Development	Those locations identified (by Local Planning Authorities) as suitable for future development but have not yet been subject to planning approval. The location and maximum land use quantum of the permissible sites are tied to the inputs originally provided by each Local Planning Authority during model development (2010). In SRTM Reference Cases the take up of permissible developments is determined by LEIM based on the local conditions (the relative 'attractiveness' of the development). In scheme specific SRTM scenarios the actual take up of permissible development can be specified.
Actual Traffic Flow	**Actual** traffic flow relates to the volume of traffic that can physically progress along a modelled link in the time period modelled taking account link and junction capacities. If a proportion of demand cannot negotiate queues at junction approaches within the one hour assignment period then it does not appear on any downstream links beyond that point.
Demand Traffic Flow	**Demand** traffic flow is the volume of traffic representing the full demand of desired movements between all origins and destinations, assigned to a particular link regardless of whether the links and junctions along the route are in excess of capacity.
Suppressed (highway) Demand	The difference between Actual and Demand traffic volumes is referred to as "suppressed" demand and is the volume of traffic wishing to use a link that cannot due to upstream capacity problems. The traffic is therefore suppressed from completing the full journey and would not appear on any downstream link or junction flows nor influence downstream delays. This is distinct from 'suppression' of highway demand catered for in the demand model calculations such as shifting mode, changing time period of travel or changing destination.
Assignment Period	The SRTM determines demand across a full 24hr (weekday) timeframe and split by AM period (07:00-10:00), IP (10:00-16:00), PM (16:00-19:00) OP (19:00-07:00). However, only the peak hour of each period is actually assigned to the Highway and PT networks:

Term	Description
LEIM	**L**ocal **E**conomic **I**mpact **M**odel (part of the SRTM model suite) Uses inputs including transport costs to forecast the quantum and location of households, populations and jobs.
MDM	**M**ain **D**emand **M**odel (part of the SRTM model suite) Predicts when (time of day), where (destination choice) and how (choice of mode) journeys are made.
RTM	**R**oad **T**raffic **M**odel (part of the SRTM model suite) Determines the routes taken by vehicles through the road network and journey times, accounting for congestion.
GDM	**G**ateway **D**emand **M**odel (part of the SRTM model suite) Predicts demand for travel from ports and airports.
PTM	**P**ublic **T**ransport **M**odel (part of the SRTM model suite) Determines routes and services chosen by public transport passengers.
WebTAG	**Web T**ransport **A**nalysis **G**uidance Is the Department for Transport's website for guidance on the conduct of transport studies. The guidance is a requirement for all projects/studies that require government approval. For projects/studies that do not require government approval TAG serves as a best practice guide**.**
TEMPRO	**T**rip **E**nd **M**odel Presentation **Pro**gram Provides pre-processed trip-end, journey mileage, car ownership and population/workforce planning data from the National Trip End Model (NTEM). The pre-processed data is itself the output from a series of models developed and run by the TASM division of DfT. TEMPRO can also be used to provide summaries of traffic growth using data from the National Transport Model (NTM).

Appendix B – SRTM Committed Schemes

Current Reference Cases as at October 2013:

Note: Only committed (funded) Highway/ PT schemes are included in the Reference Cases

Model	Major Developments	Major Highway Schemes	Major PT Schemes
2010 Base	Existing 2010	Existing 2010	Existing 2010
2014 Ref	As 2010 Base plus: 1. Initial Whitehill / Bordon Eco-Town 2. Initial West of Waterlooville MDA 3. Initial Bushfield Camp, Winchester 4. Initial Daedalus 5. Initial North Whiteley 6. Initial Tipner 7. Initial Fareham SDA 8. Initial Eastleigh Riverside	As 2010 Base plus: 1. Quay Street Roundabout (Fareham) – Full signalisation of roundabout and 'through lane' from A32 to A27. 2. Newgate Lane (Fareham) - Widening (to 7.3m) from Speedfield Retail Park access roundabout southwards to Peel Common roundabout. 3. Totton Western Bypass / A326 – Existing roundabout at junction of A326/A336 converted to traffic signal control. 4. A3M J5 Bedhampton Road Junction (Rusty Cutter) – Junction improvement including additional lanes on A3M S/B Off Slip; Bedhampton Hill W/B; Havant Rd E/B; A27 E/B link; North, East and South circulating arms on the roundabout. 5. Trafalgar Gate Link Road – New highway link between A3 Mile End Road to Trafalgar Gate (naval base). 6. M27 J3 – W/B off-slip and corresponding circulating lane flared to 3 lanes, M271 S/B approach flared to 3 lanes, M271 N/B flare lengthened. 7. M3 J12 – Additional lane on S/B off-slip. 8. Eastern Rd/ Fitzherbert Rd/ Grove Rd junctions – Revised signal timings to improve capacity. 9. New Road/ Tangier Road area improvement scheme – Speeds on Tangier Rd and New Rd reduced to 20mph.	As 2010 Base plus: 1. Fareham – Gosport BRT Phase 1A 2. Isambard Brunel Rd Bus Priority – S/B bus lane between Station Rd and Winston Churchill Ave. 3. TfSH LSTF Schemes 4. TfSH Better Bus Area Fund Schemes (BBAF)

Model	Major Developments	Major Highway Schemes	Major PT Schemes
		10. Copnor Road area improvement scheme (Portsmouth) – Pedestrian facilities at Copnor Road/ Stubbington Ave junction. Reduce speed to 20mph on section of Copnor Road. 11. Elm Grove/ Albert Road junction - Pedestrian facilities provided at junction. 12. Eastern Road (Portsmouth) congestion improvement scheme – Additional S/B lane between Hayling Ave and Kirpal Rd, amendments to signal junction with Milton Rd. 13. Portswood Rd/ St Denys Rd/ Highfield Ln junction modifications – Improved pedestrian crossing facilities and signal timing changes associated to Sainsburys development. 14. Maybush Corner (Junction of Romsey Rd/ Wimpson Ln/ Rownhams Ln) – Additional approach lane added to Wimpson Lane and traffic signal timing adjustments. 15. Civic Centre Place – Access to Civic Centre Rd between Portland Terr and Above Bar St restricted to bus only. Increased pedestrian provision at Havelock Rd/ Western Esplanade and Portland Terr/ Civic Centre Rd signal junctions. 16. M271 Redbridge Roundabout – Pedestrian crossing facility incorporated into existing signal junction where A33 E/B off slip joins roundabout. Assumed small reduction in highway capacity at roundabout due to provision of cycle facilities. 17. LSTF Corridors 3, 4 and 6 bus priority signal changes. 18. A27 Western Way Bus Lane (Fareham) 19. A32 Brockhurst Roundabout (BBAF Scheme) 20. M27 J5 (HA scheme Phases 1 and 2)	

Model	Major Developments	Major Highway Schemes	Major PT Schemes
		21. M3 J9 Easton Lane Signals 22. M275 Tipner Interchange	
2019 Ref	As Central 2014 Reference plus: 1. Additional Whitehill / Bordon Eco-Town 2. Additional West of Waterlooville MDA 3. Additional Bushfield Camp, Winchester 4. Additional Daedalus 5. Additional North Whiteley 6. Additional Tipner 7. Additional Fareham SDA 8. Additional Eastleigh Riverside 9. Initial other Eastleigh strategic sites	As Central 2014 Reference plus: 1. Platform Road (Southampton) – Platform Rd, Orchard Place and Queens Terrace converted to two-way operation; Queens Terrace closed at eastern end. New signal junction at Platform Rd/ Dock Gate 4.	As Central 2014 Reference
2026 Ref	As Central 2019 Reference plus: 1. Additional Whitehill / Bordon Eco-Town 2. Additional West of Waterlooville MDA 3. Additional Bushfield Camp, Winchester 4. Additional Daedalus 5. Additional North Whiteley 6. Additional Tipner 7. Additional Fareham SDA 8. Additional Eastleigh Riverside 9. Additional other Eastleigh strategic	As Central 2019 Reference	As Central 2019 Reference

Model	Major Developments	Major Highway Schemes	Major PT Schemes
	sites		
2036 Ref	As Central 2026 Reference	As Central 2026 Reference	As Central 2026 Reference

Appendix C – GBC Local Plan Site Details

		A										B									
		SRTM Base (2010)										SRTM Reference Case Inputs (2031-2010)									
Sequential Zone Number	Hierachial Zone Number	Residential	Retail	Office	Industrial	Warehousing	Education	Education	Hotel	Healthcare	Leisure	Residential	Retail	Office	Industrial	Warehousing	Education	Education	Hotel	Healthcare	Leisure
		hhds	flsp2	flsp3	flsp4	flsp5	flsp6	flsp7	flsp8	flsp9	flsp10	hhds	flsp2	flsp3	flsp4	flsp5	flsp6	flsp7	flsp8	flsp9	flsp10
Gosport Total		34856	88240	73720	140270	49460	28720	4366	1622	29682	9294	1755	10999	75185	9372	19328			1029	4000	11270
364	**500**	386	311	931	568	125	143	54	9	1478	74	60									
365	**501**	261	1788	5368	3273	730	822	305	52	8520	425	10								4000	
366	**502**	706	165	496	301	67	75	29	5	786	39										
367	**503**	545	443	415	560	269	409	25	30	634	50										
368	**504**	717	1237	646	887	38	147	48	8	468	106	14									
369	**505**	937	6493	2235	4129	0	609	192	28	430	475	17		1159							
370	**506**	870	22016	8702	13979	0	2055	647	94	1308	1608	18	3145	5000							1000
371	**507**	1285	5064	2020	3293	29	495	158	24	588	380	46		221	32	62					
372	**508**	676	2116	3007	2036	0	198	62	9	126	155	344	5163	9744	1150	2300					1000
373	**509**	845	324	168	1046	192	147	14	3	63	25	159	1254	664	95	190			1029		625
374	**510**	266	1149	1681	4888	1547	548	46	24	137	150	10									
375	**511**	1406	938	1122	3843	1163	443	39	17	123	115	3									
376	**512**	851	571	516	2127	557	267	25	9	91	60	28									
377	**513**	955	791	1039	3361	1067	377	32	16	94	102										
378	**514**	358	791	1039	3361	1067	377	32	16	94	102										
379	**515**	241	1733	3989	11017	5968	827	70	35	208	225										
380	**516**	389	2169	4598	12828	9672	780	102	50	356	517	21		425	61	122					
381	**517**	630	379	638	819	569	427	18	5	154	63	42									
382	**518**	544	644	930	1484	945	609	30	9	223	118										
383	**519**	501	745	497	2096	1012	268	36	17	121	178										
384	**520**	964	1115	743	3133	1512	400	52	25	183	266										
385	**521**	579	474	322	1295	510	202	18	9	98	91	29									
386	**522**	234	1868	1309	5817	1385	958	61	24	476	253			1730							
387	**523**	633	893	638	2328	422	517	23	8	264	80										
388	**524**	637	703	490	1889	558	352	25	11	173	101										
389	**525**	402	159	263	339	231	177	7	2	63	25										
390	**526**	764	620	473	1696	838	268	30	13	117	141										
391	**527**	1163	455	768	986	685	513	21	6	186	76	29									
392	**528**	240	1044	3064	2255	4358	1173	50	14	423	173	17		1570	224	719					
393	**529**	116	2358	3975	5103	3529	2657	114	32	959	391			3014	431	861					
394	**530**	829	2453	1178	2533	1451	458	100	139	820	217		284								78
395	**531**	697	3339	1763	3449	1980	624	136	189	1116	296	74	531								
396	**532**	991	1436	690	1482	855	267	59	82	479	128	45									
397	**533**	2107	1121	539	1156	663	210	46	65	375	99	13									7947
398	**534**	842	569	408	1490	269	331	14	5	168	52	101									
399	**535**	1126	706	505	1844	336	409	18	6	207	63	104									
400	**536**	158	187	516	574	0	104	61	3	28	33	22									
401	**537**	201	483	1324	1475	0	267	158	6	71	84			5880	840	1680					
402	**538**	116	9	26	27	0	5	4		2	2	8									
403	**539**	914	251	685	765	0	138	81	3	36	43	4									
404	**540**	575	1956	5361	5979	0	1077	636	27	288	339	3									
405	**541**	735	425	506	1347	183	206	56	5	77	46										
406	**542**	822	760	449	2438	442	348	41	8	147	63	7									
407	**543**	999	937	439	2351	413	331	37	8	148	72	29									
408	**544**	305	7256	2472	4611	0	677	213	31	431	530			280	40	395					
409	**545**	973	764	624	822	10	138	64	5	134	72	7									
410	**546**	684	1206	1729	1693	673	976	104	69	2691	173	50									
411	**547**	977	1692	851	1932	1098	1725	61	129	1235	146	20									
412	**548**	937	1720	863	1957	1117	1750	62	131	1253	148	7									
413	**549**	767	1414	711	1611	924	1441	50	107	1032	123										
746	**36**											417	620	45500	6500	13000					620
759	**49**																				
Non Gosport																					
733	**23**											1452	140	11396	1878	4876	270			280	
734	**24**											1452	140	11396	1878	4876	270			280	
735	**25**											1452	140	11396	1878	4876	270			280	
736	**26**											1452	140	11396	1878	4876	270			280	
737	**27**											1452	140	11396	1878	4876	270			280	
745	**35**												1233	4000	6250	6250					
747	**37**												1233	4000	6250	6250					

		C										D									
		Completions (up to 2013)										Committed (beyond 2013)									
Sequential Zone Number	Hierachial Zone Number	Residential	Retail	Office	Industrial	Warehousing	Education	Education	Hotel	Healthcare	Leisure	Residential	Retail	Office	Industrial	Warehousing	Education	Education	Hotel	Healthcare	Leisure
		hhds	flsp2	flsp3	flsp4	flsp5	flsp6	flsp7	flsp8	flsp9	flsp10	hhds	flsp2	flsp3	flsp4	flsp5	flsp6	flsp7	flsp8	flsp9	flsp10
Gosport Total		457	556		1521		1053			692	3844	838	8176	14453	41673	13048	338		10736	1839	2611
364	**500**	9										26									
365	**501**	1										1									
366	**502**	2										1									
367	**503**																				
368	**504**	4										4									
369	**505**	2										16	788								
370	**506**	13										4							391		
371	**507**	40										20									
372	**508**	206	223									112	1397	392							
373	**509**	43										15									
374	**510**																				
375	**511**																				
376	**512**	5										2									
377	**513**																				
378	**514**											4									
379	**515**										203	4	459								
380	**516**	9																			
381	**517**	50										1									
382	**518**																				
383	**519**																				
384	**520**	6																			
385	**521**	1										3									
386	**522**										3641		690						2025		
387	**523**	2										1									
388	**524**																				
389	**525**																				
390	**526**	1																			
391	**527**						1053														
392	**528**	9			1521																
393	**529**														3590						
394	**530**	4										1									
395	**531**	35	333									7									
396	**532**	30										4									
397	**533**																				
398	**534**	51										249	3767				338				290
399	**535**	3																			
400	**536**	6																			
401	**537**	2																			
402	**538**																				
403	**539**	4										1									
404	**540**	1																			
405	**541**	1																			
406	**542**	1										1									
407	**543**	2										2									
408	**544**											1									
409	**545**											3									
410	**546**	7								692		3									
411	**547**	15										1									
412	**548**	4										3									
413	**549**																				
746	**36**											350	1075	14061	38083	13048			8320	1839	2321
759	**49**																				
Non Gosport																					
733	**23**											1524									
734	**24**											1916	1000				750				
735	**25**											1275	500	7491	8740	9988	1500				
736	**26**											945	5500	18249	21291	24333	750				
737	**27**											840		4260	4969	5679					
745	**35**														18826	6275					855
747	**37**														18826	6275					855

		E										C+D+E									
		Development Sites (Local Plan Sites)										Development Sites (Local Plan Sites)									
Sequential Zone Number	Hierachial Zone Number	Residential	Retail	Office	Industrial	Warehousing	Education	Education	Hotel	Healthcare	Leisure	Residential	Retail	Office	Industrial	Warehousing	Education	Education	Hotel	Healthcare	Leisure
		hhds	flsp2	flsp3	flsp4	flsp5	flsp6	flsp7	flsp8	flsp9	flsp10	hhds	flsp2	flsp3	flsp4	flsp5	flsp6	flsp7	flsp8	flsp9	flsp10
Gosport Total		1794	500	2250	27115						500	3089	9232	15453	69059	13048	1391		10736	2531	6955
364	**500**	10										45									
365	**501**	300		1250	1250							302									
366	**502**	10										13									
367	**503**	10										10									
368	**504**	10										18									
369	**505**	12										26	788								
370	**506**	200										217							391		
371	**507**	11										71									
372	**508**											318	1620	392							
373	**509**	100	500	1000							500	158	500	1000							500
374	**510**	10										10									
375	**511**	12										12									
376	**512**	10										17									
377	**513**	12										12									
378	**514**	10										14									
379	**515**				10400							4	459		10400						203
380	**516**	5			2500							14			2500						
381	**517**	10										61									
382	**518**	8										8									
383	**519**	11										11									
384	**520**	12										18									
385	**521**	12										14									
386	**522**	12										12	690						2025		3641
387	**523**	12										11									
388	**524**	10										10									
389	**525**	12										12									
390	**526**	12										13									
391	**527**	43										43					1053				
392	**528**				500							9			2021						
393	**529**				3750										7340						
394	**530**	12										17									
395	**531**	12										54	333								
396	**532**	12										46									
397	**533**	23										23									
398	**534**	12										210	3767				338				290
399	**535**	12										15									
400	**536**											6									
401	**537**				8400							2			8400						
402	**538**																				
403	**539**	12										15									
404	**540**	10										11									
405	**541**	11										12									
406	**542**	10										12									
407	**543**	28										32									
408	**544**	12			315							13			315						
409	**545**	11										14									
410	**546**	12										22								692	
411	**547**	12										28									
412	**548**	12										19									
413	**549**	5										5									
746	**36**											350	1075	14061	38083	13048			8320	1839	2321
759	**49**	700										700									
Non Gosport																					
733	**23**											1524									
734	**24**											1916	1000				750				
735	**25**											1275	500	7491	8740	9988	1500				
736	**26**											945	5500	18249	21291	24333	750				
737	**27**											840		4260	4969	5679					
745	**35**														18826	6275					855
747	**37**														18826	6275					855

SYSTRA provides advice on transport, to central, regional and local government, agencies, developers, operators and financiers.
A diverse group of results-oriented people, we are part of a strong team of professionals worldwide. Through client business planning, customer research and strategy development we create solutions that work for real people in the real world.

For more information visit www.SYSTRA.com

Abu Dhabi
AS Business Centre, Suite 201, Al Ain Road, Umm al Nar, P.O. Box 129865, Abu Dhabi, UAE
T: +971 2 510 2402 F: +971 2 510 2403

Birmingham
Second Floor, 37a Waterloo Street
Birmingham B2 5TJ United Kingdom
T: +44 (0)121 233 7680 F: +44 (0)121 233 7681

Dublin
First Floor, 12/13 Exchange Place
Custom House Docks, IFSC, Dublin 1, Ireland
T: +353 (0)1 542 6000 F: +353 (0)1 542 6001

Edinburgh
Second Floor, Prospect House, 5 Thistle Street,
Edinburgh EH2 1DF United Kingdom
T: +44 (0)131 220 6966 F: +44 (0)131 220 6087

Glasgow
Seventh Floor, 78 St Vincent Street
Glasgow G2 5UB United Kingdom
T: +44 (0)141 225 4400 F: +44 (0)141 225 4401

London
Seventh Floor, 15 Old Bailey
London..EC4M 7EF T United Kingdom
T: +44 (0)20 7529 6500 F: +44 (0)20 7529 6556

Lyon
11, rue de la République, 69001 Lyon, France
T: +33 (0)4 72 10 29 29 F: +33 (0)4 72 10 29 28

Manchester
25th Floor, City Tower, Piccadilly Plaza
Manchester M1 4BT United Kingdom
T: +44 (0)161 236 0282 F: +44 (0)161 236 0095

Marseille
76, rue de la République, 13002 Marseille, France
T: +33 (0)4 91 37 35 15 F: +33 (0)4 91 91 90 14

Paris
12-14, rue Jules César, 75012 Paris, France
T: +33 (0)1 53 17 36 00 F: +33 (0)1 53 17 36 01

Woking
Dukes Court, Duke Street, Woking
Surrey GU21 5BH United Kingdom
T: +44 (0)1483 728051 F: +44 (0)1483 755207

Email: info@SYSTRA.com

Offices also in
Bangkok, Beijing, Hong Kong, Shenzhen and Singapore

SYSTRA