

95 Bothwell Street
Glasgow, Scotland G2 7HX
United Kingdom
T +44 (0)141 243 8000
F +44 (0)141 226 3109
www.jacobs.com

Date 6 October 2016
Subject **A904 Traffic Patterns Post M9 Junction 1A Opening**

Introduction

The purpose of this note is to demonstrate the changes in traffic flows on the A904, M9 and M9 Spur following the opening of the west facing slip roads at M9 Junction 1A. All information included within this note has been extracted directly from the published reports. The slip roads opened on 4th February 2013. There are five counters that demonstrate the change in traffic flow as a result of the new slip roads. These are:

- JTC00395 – A904 East of Newton (Section 4 of the Annual Report);
- JTC00439 – M9 South of Junction 2 (Section 3 of the Annual Report);
- JTC00599 – B8046 Old Philpstoun (Section 4 of the Annual Report);
- JTC00589 – M90 Spur (M9 Spur) Southbound (Section 3 of the Annual Report); and
- JTC00590 – M90 Spur (M9 Spur) Northbound (Section 3 of the Annual Report).

Monthly average traffic flow information has been extracted for each direction from the counters from the beginning of the monitoring process in August 2011, until September 2015, which is the end of the last monitoring period. In addition, two way HGV flows have been extracted from the counters, for the same period with the exception of the M90 Spur (M9 Spur), where the data is by direction as it is recorded on separate counters.

In addition to these counters, four new counters have been included on the slip roads at Junction 1A following the opening of the west facing slip roads. These four counters cover individual parts of the junction and are therefore separate datasets. Data for these counters have been included from August 2013 onwards. These are:

- NTC01270 – M90 Spur (M9 Spur) Northbound from M9 Westbound (Section 3 of the Annual Report);
- NTC01271 – M90 Spur (M9 Spur) Northbound from M9 Eastbound (Section 3 of the Annual Report);
- NTC01272 – M90 Spur (M9 Spur) Southbound from M9 Eastbound (Section 3 of the Annual Report); and
- NTC01274 – M90 Spur (M9 Spur) Southbound from M9 Westbound (Section 3 of the Annual Report).

The locations of the counters are shown in Figure 1.

There are a number of gaps within the traffic data due to technical issues with certain counters, particularly on the M9, where there are a number of months with missing data. However, the general trend in traffic flows can be seen from the graphs shown in Figure 2 to Figure 19.

Automatic Traffic Count (ATC) Data

In the annual report, the breakdown of traffic flow is reported based on the following ATC classification system*:

- CCE1 - Motorbike
- CCE2 - Car/Van
- CCE3 - Car + Trailer
- CCE4 - LGV/Rigid OGV1
- CCE5 - HGV (Articulated)
- CCE6 - Bus

*Classification system used for the majority of counters and all five used in this analysis

The annual report details the total traffic flow as well as the number of HGVs. To determine the number of HGVs, classifications CCE5 (HGV) and CCE6 (Bus) are used. CCE4 (LGV/Rigid OGV1) is not included in the classification of total HGV flow because, at the majority of locations, this class is made up of a high percentage of Light Goods Vehicles (LGVs), which would result in the over reporting of the HGV flows across all the network monitoring sites.

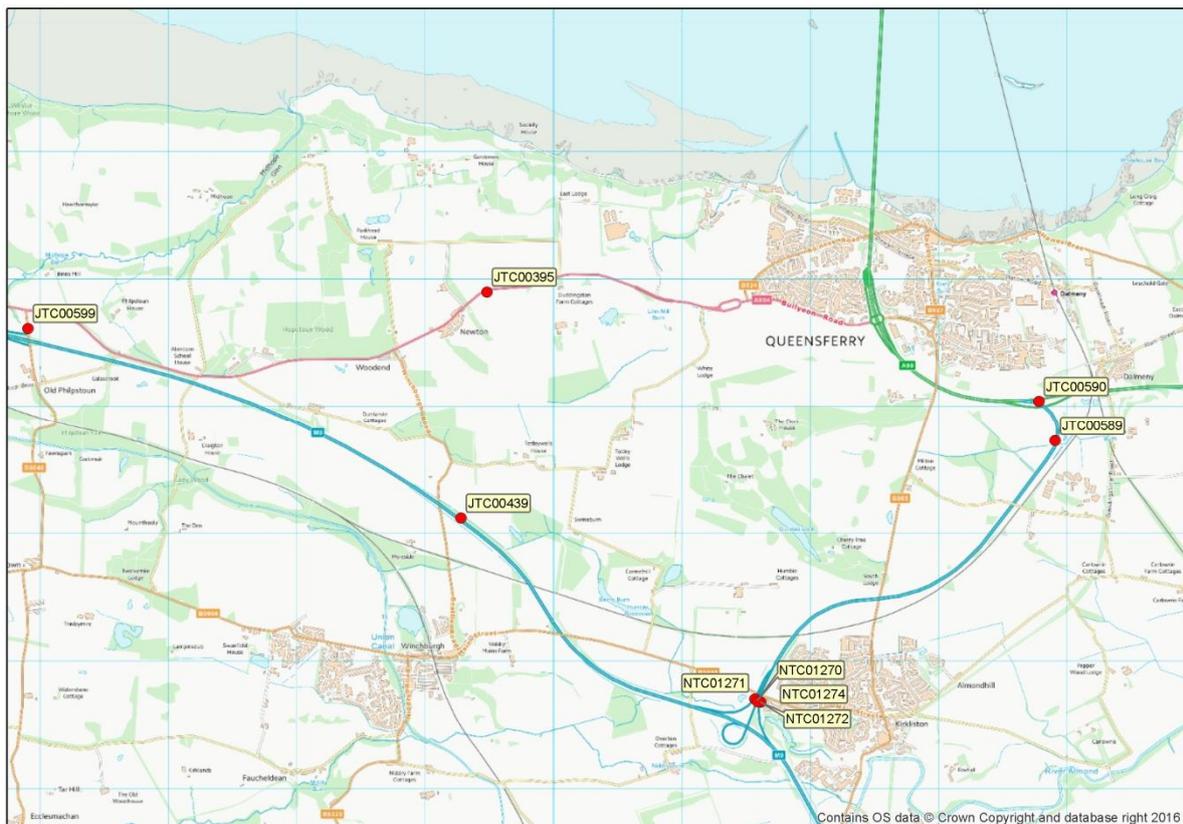


Figure 1 Counter Locations

As shown in Figure 2 and Figure 11, general traffic and HGV flow levels on the A904 have decreased in both directions since the slip roads opened in February 2013. This is also the case on the B8046 (Figure 3), which connects the M9 to the A904 at Junction 2, where a reduction in traffic following the

opening of the slip roads is evident. There is also a significant reduction in the number of HGVs recorded at both of these counters (Figure 11 and Figure 12).

In addition, an increase in both general traffic and HGV traffic levels is evident on the M9 to the west of Junction 1A and on the M90 Spur (M9 Spur). The traffic data is very sporadic at the M9 Counter (Figure 4), however an increasing trend can be seen, with traffic flows being between 11,000 and 14,000 before the slip roads opened, increasing to between 14,000 and 17,000 once the slip roads are operational. This is comparative to the reduction on the A904, where traffic levels have reduced by approximately 2,000 vehicles.

There is also an increase in HGVs at this counter, increasing from around 1000 to around 1,200 to 1,400 once the slip roads are operational (Figure 13). This is consistent with the average reduction of approximately 300 HGVs experienced on the A904.

Similar patterns can be seen on the M90 Spur (M9 Spur) in both general traffic (Figure 4 and Figure 5) and HGV flows (Figure 14 and Figure 15). The traffic counters on the new west facing slip roads, NTC01271 (Figure 8 and Figure 17) and NTC01274 (Figure 10 and Figure 19) show a level of traffic that is greater than the reduction of traffic on the A904. This indicates that traffic is transferring from the A904 onto the M90 Spur (M9 Spur), however it also indicates that the west facing slip roads may also be encouraging traffic to transfer from other routes, such as the A985 and Kincardine Bridge.

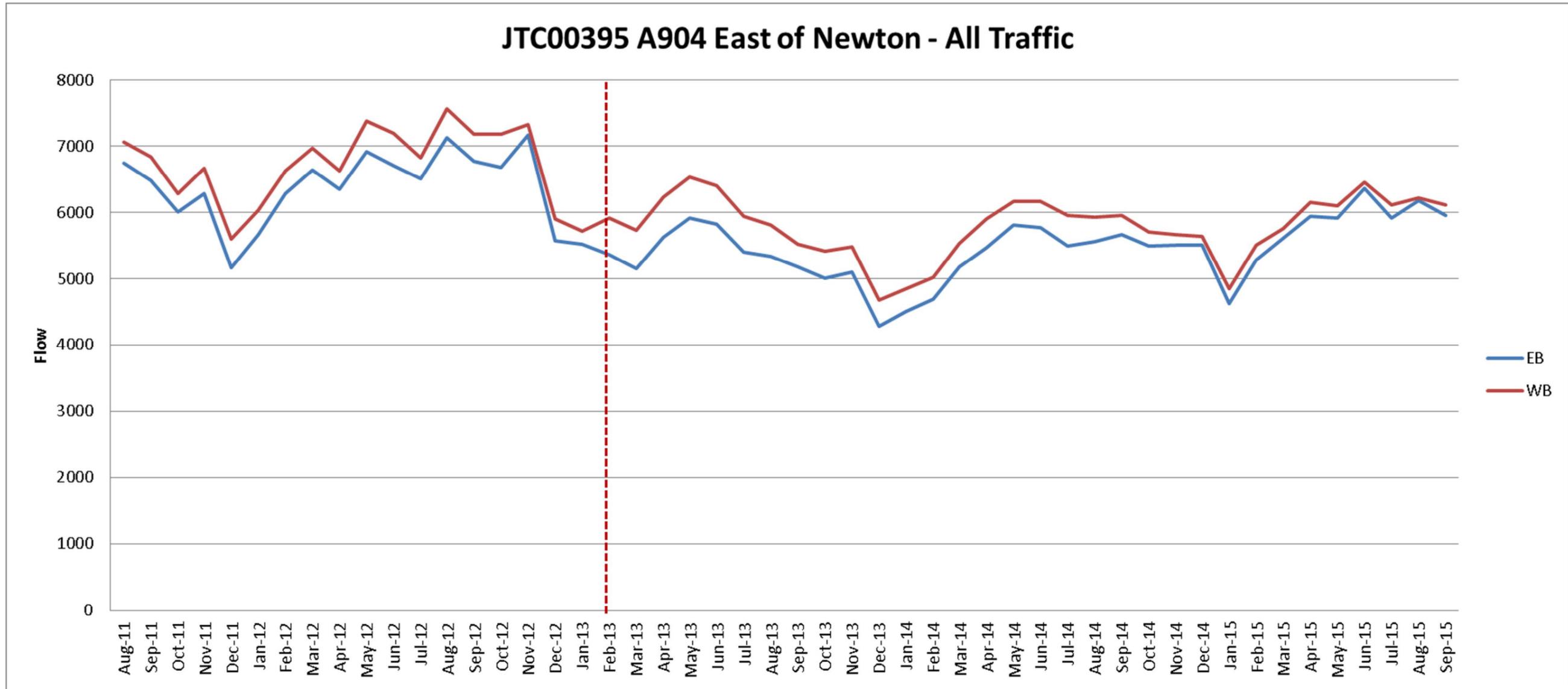


Figure 2 JTC00395 - A904 East of Newton All Traffic

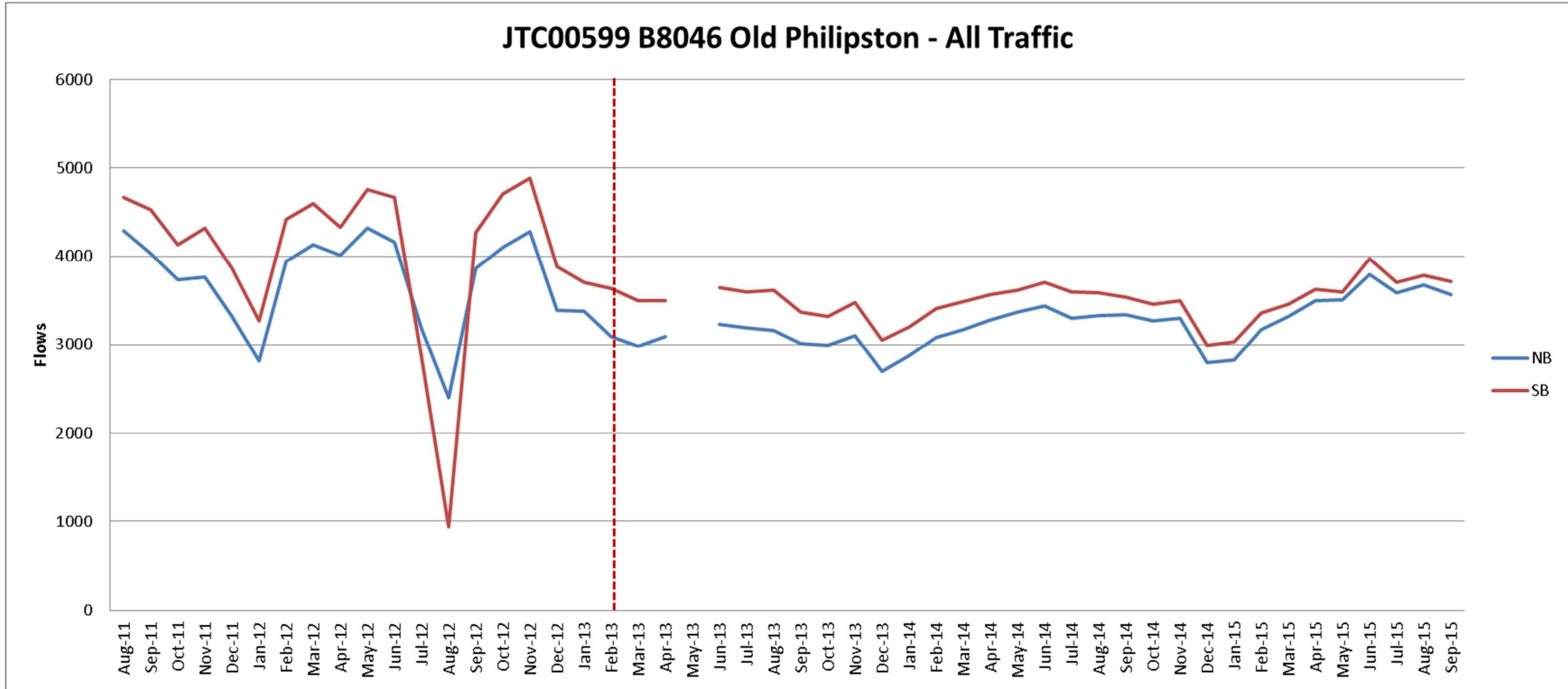


Figure 3 JTC00599 B8046 Old Philipstoun All Traffic

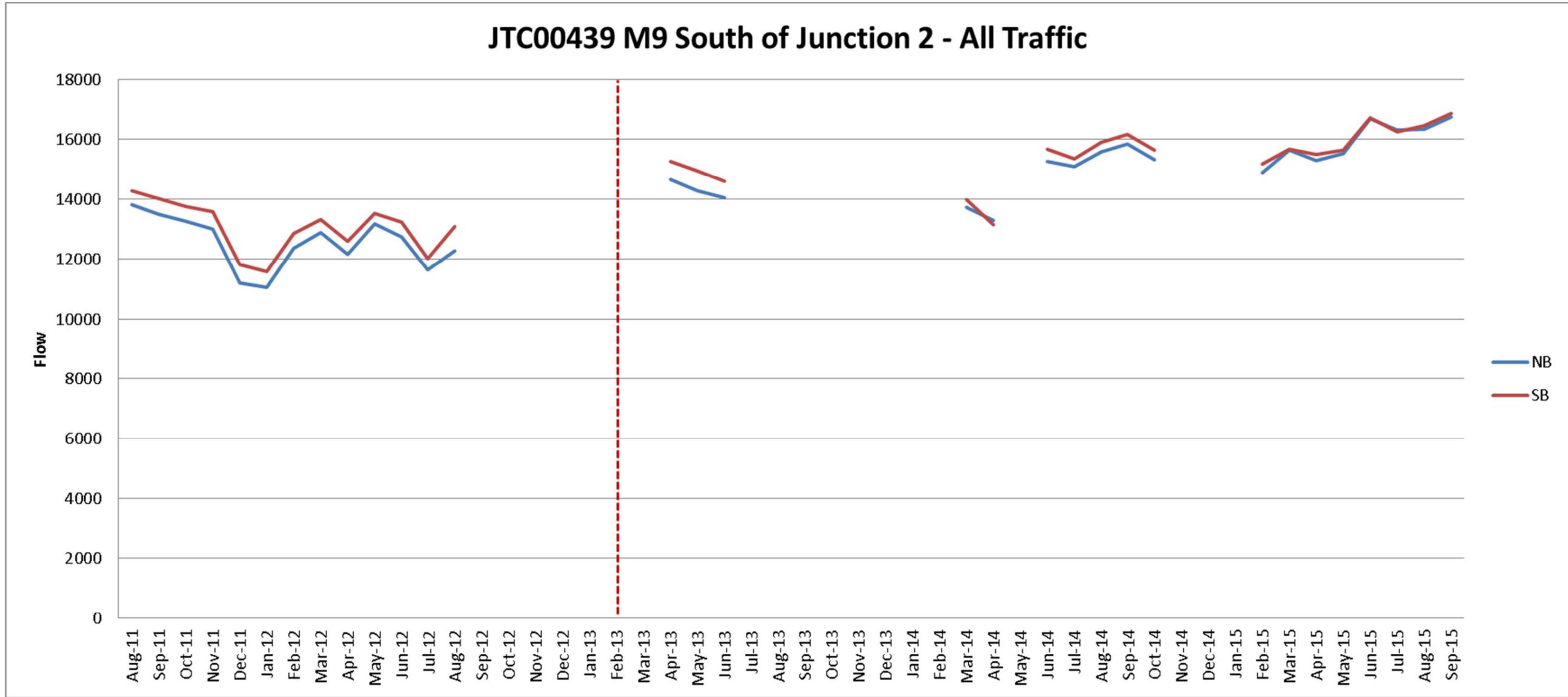


Figure 4 JTC00439 M9 South of Junction 2 All Traffic

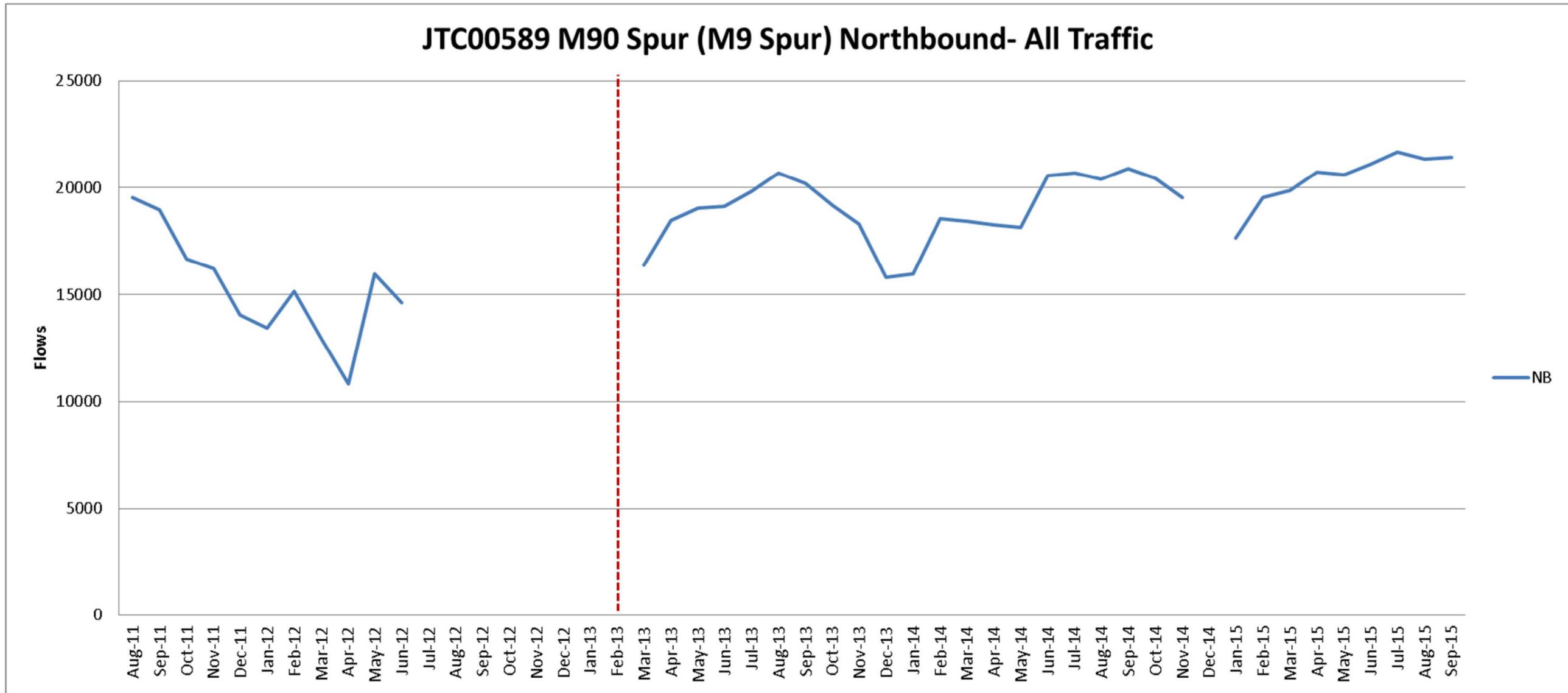


Figure 5 JTC00589 M90 Spur Northbound All Traffic

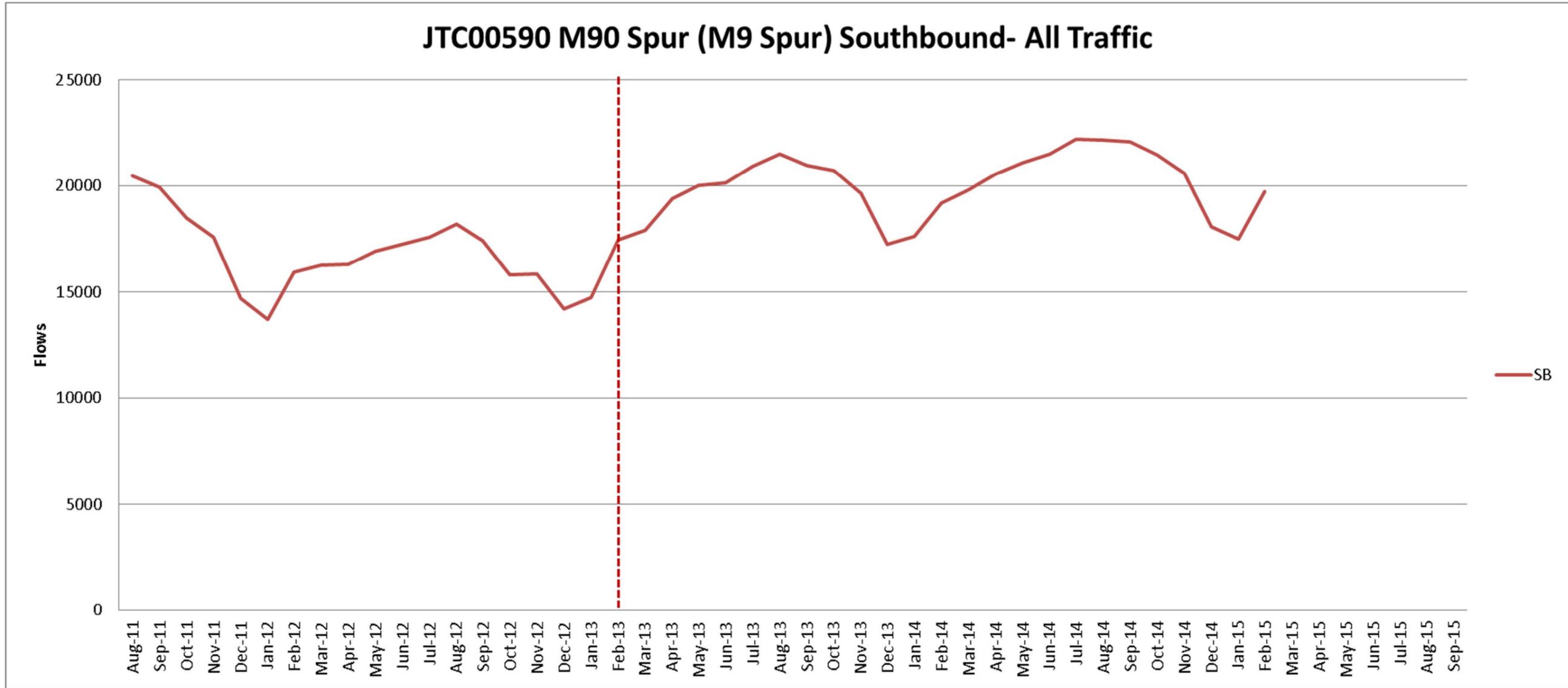


Figure 6 JTC00590 M90 Spur Southbound All Traffic

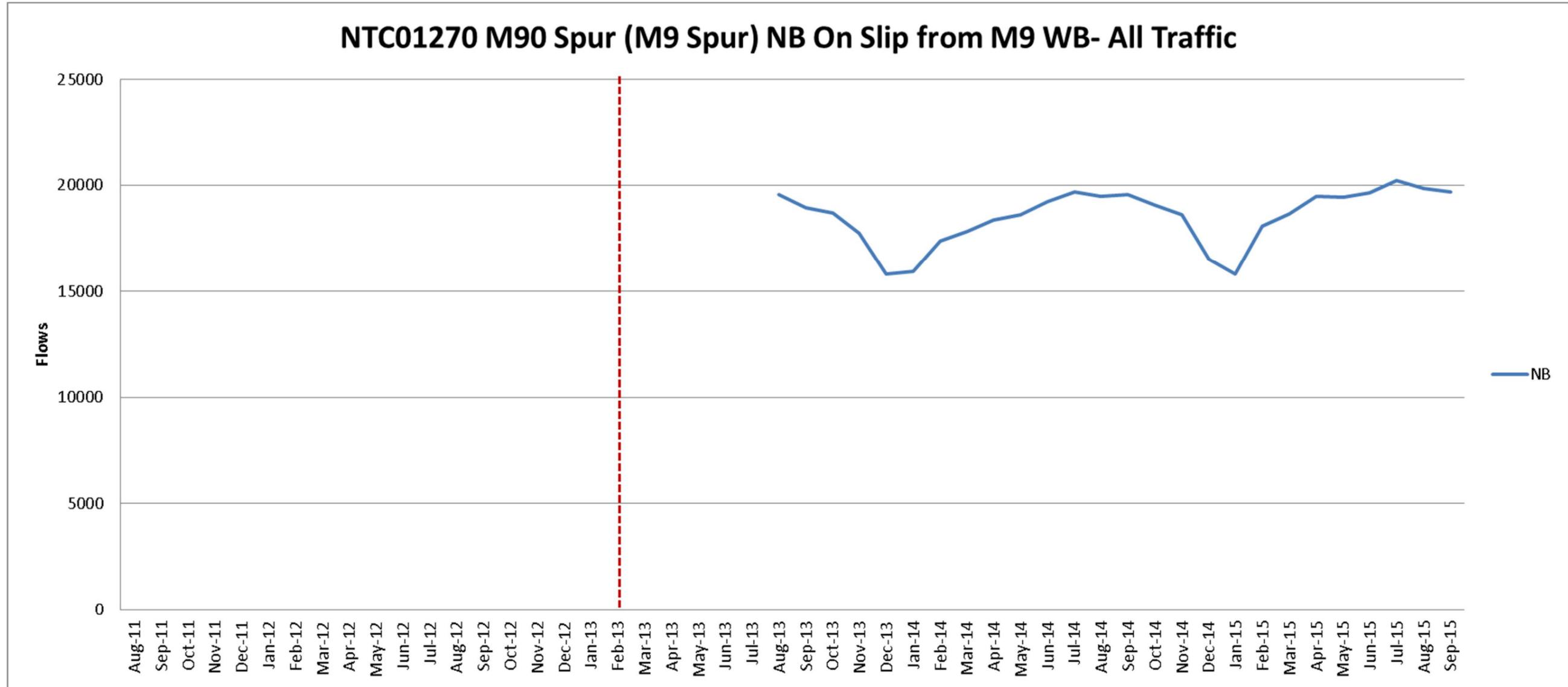


Figure 7 NTC01270 M90 Spur Northbound On Slip from M9 Westbound All Traffic

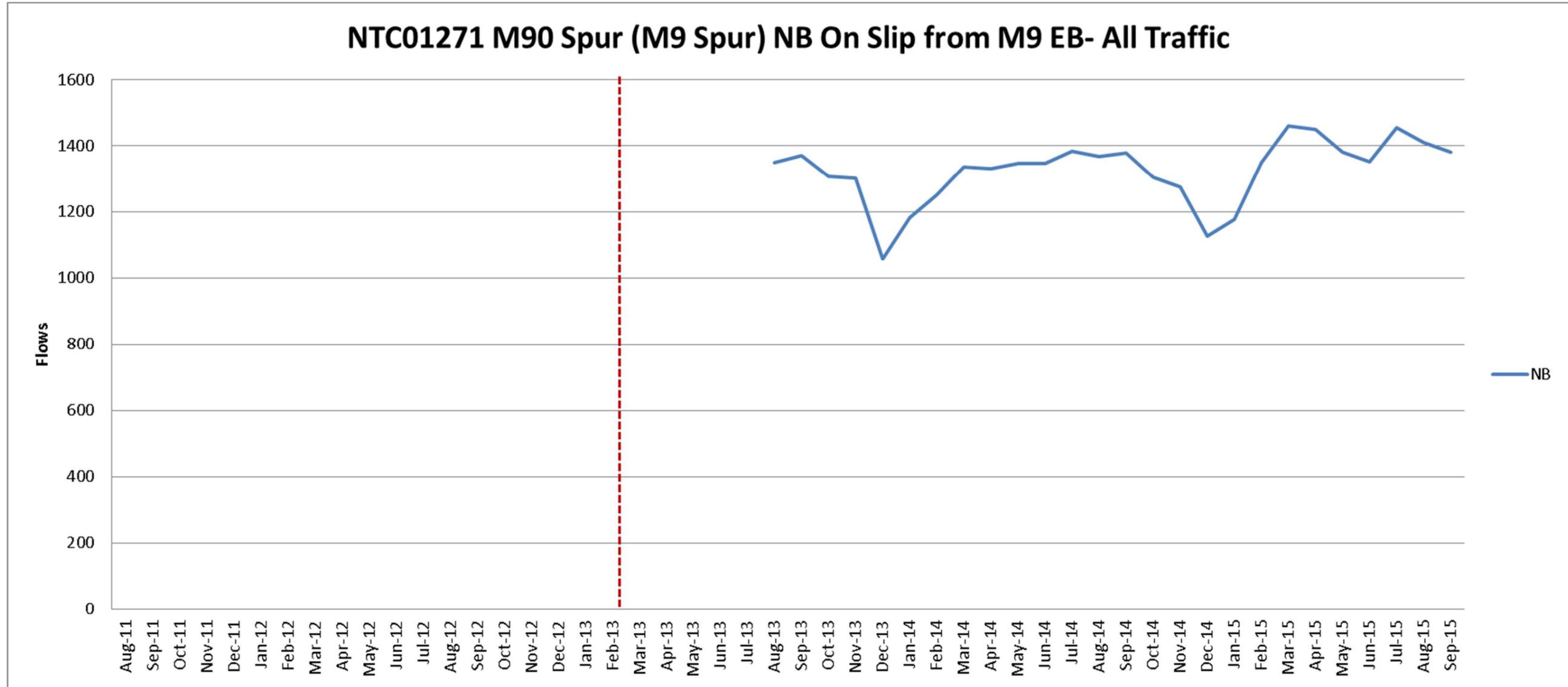


Figure 8 NTC01271 M90 Spur Northbound On Slip from M9 Eastbound All Traffic

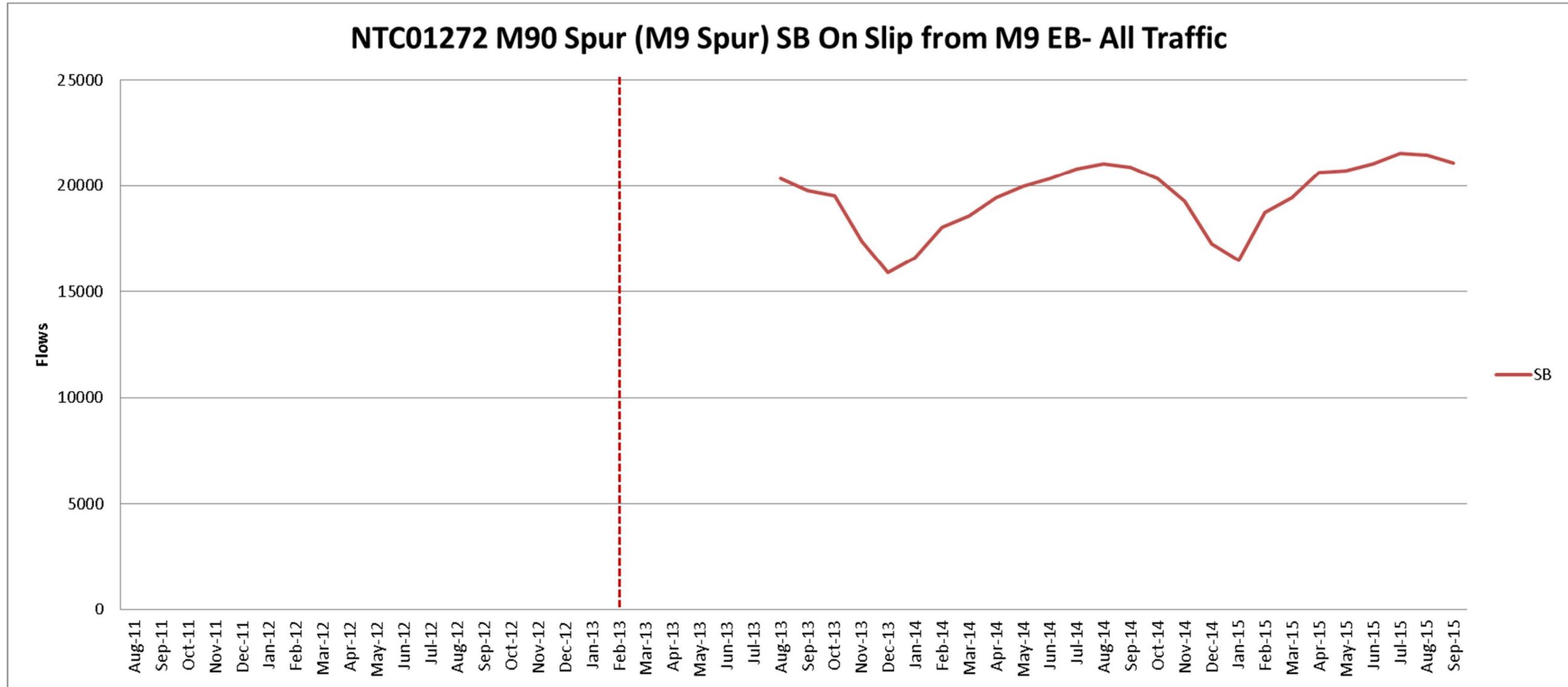


Figure 9 NTC01272 M90 Spur Southbound On Slip from M9 Eastbound All Traffic

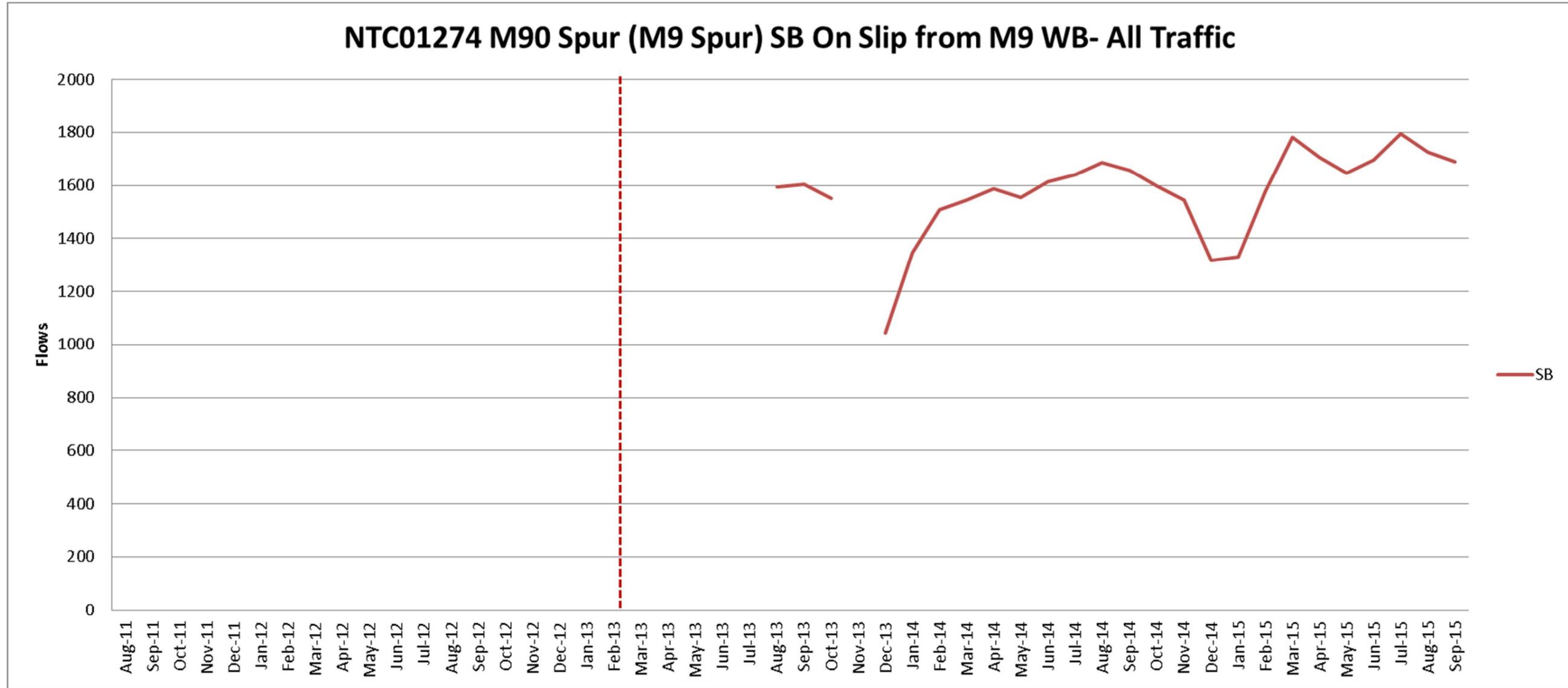


Figure 10 NTC01274 M90 Spur Southbound On Slip from M9 Westbound All Traffic

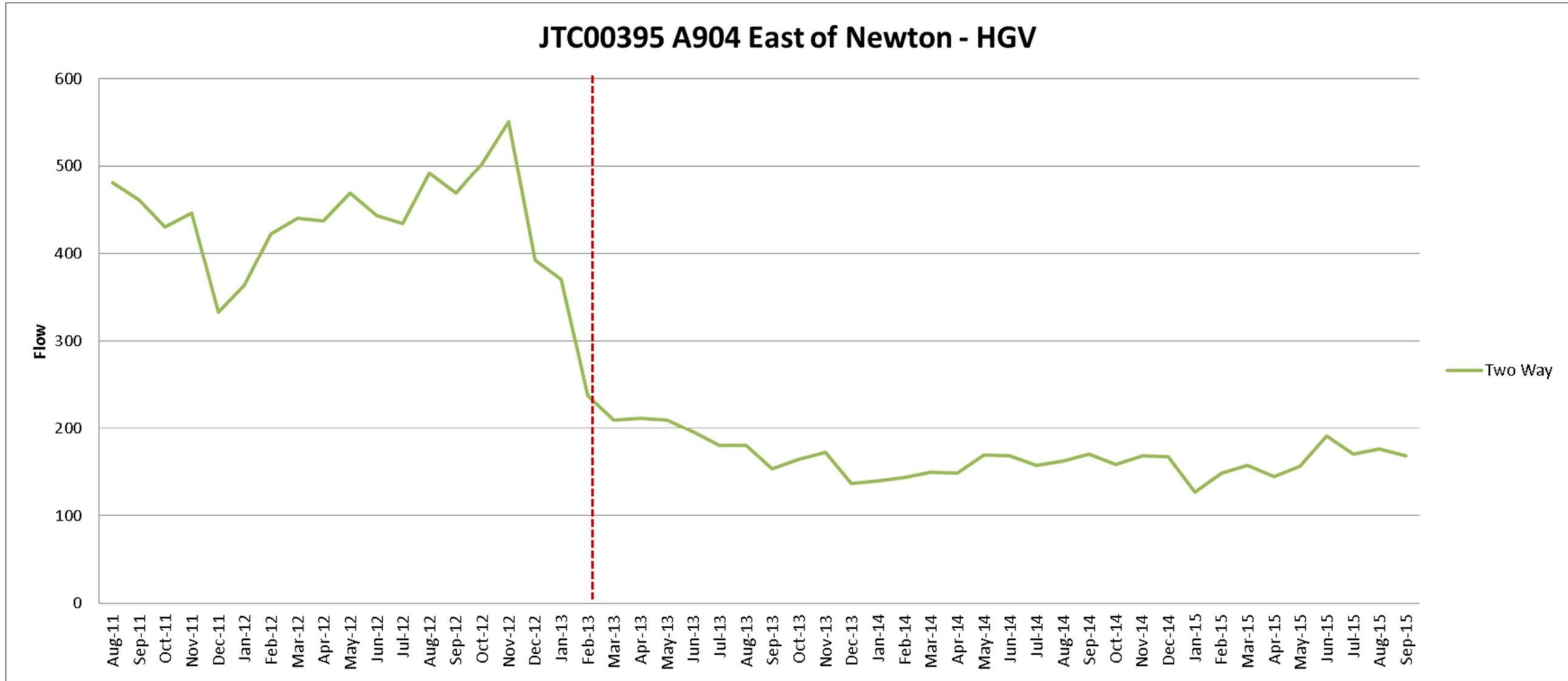


Figure 11 JTC00395 A904 East of Newton HGV

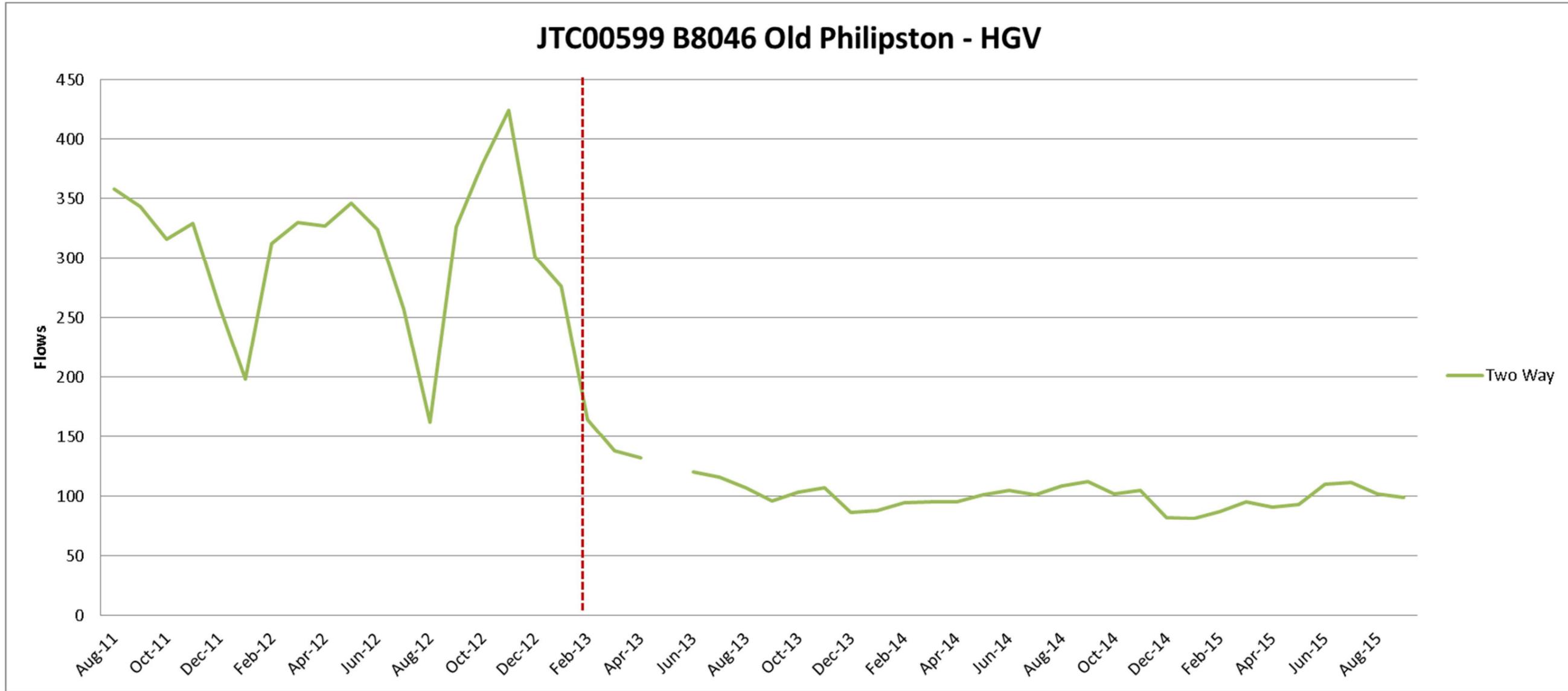


Figure 12 JTC00599 B8046 Old Philipstoun HGV

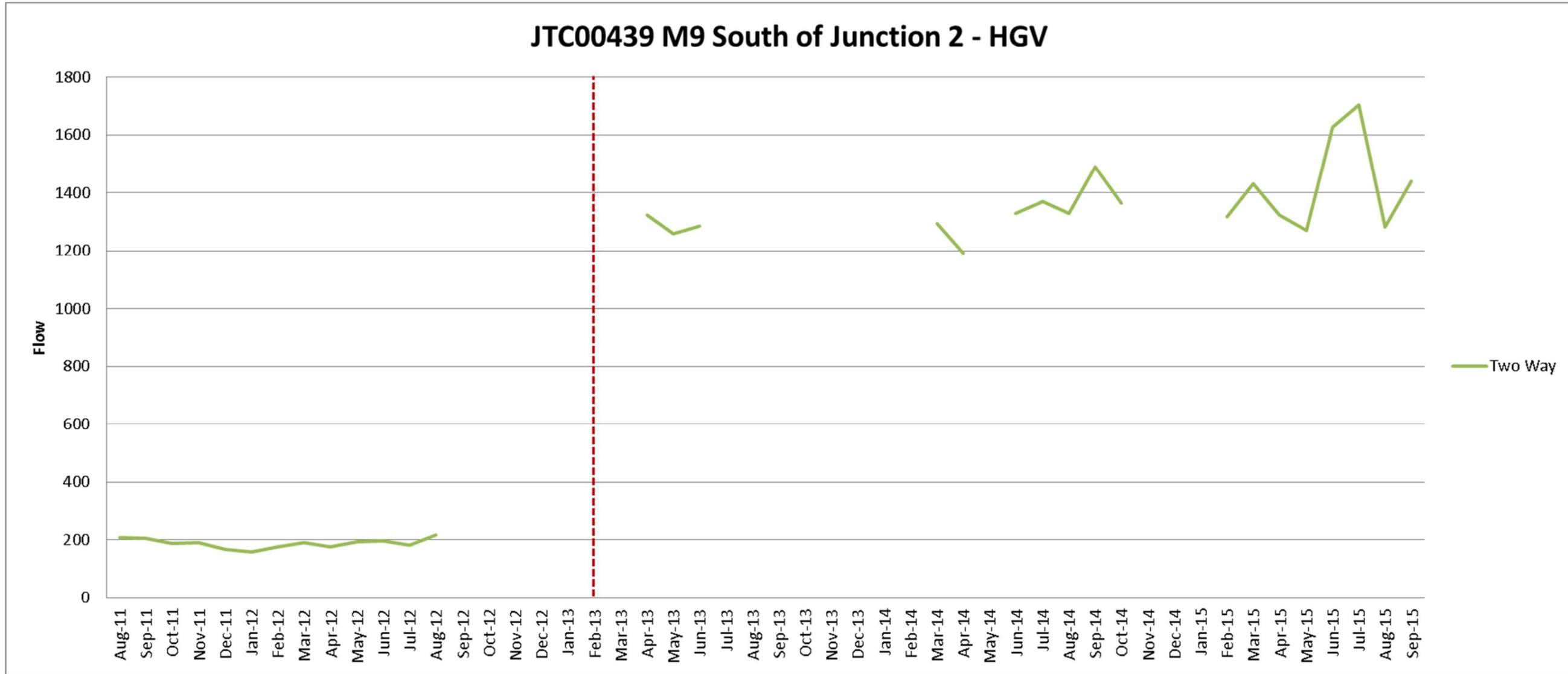


Figure 13 JTC00439 M9 South of Junction 2 HGV

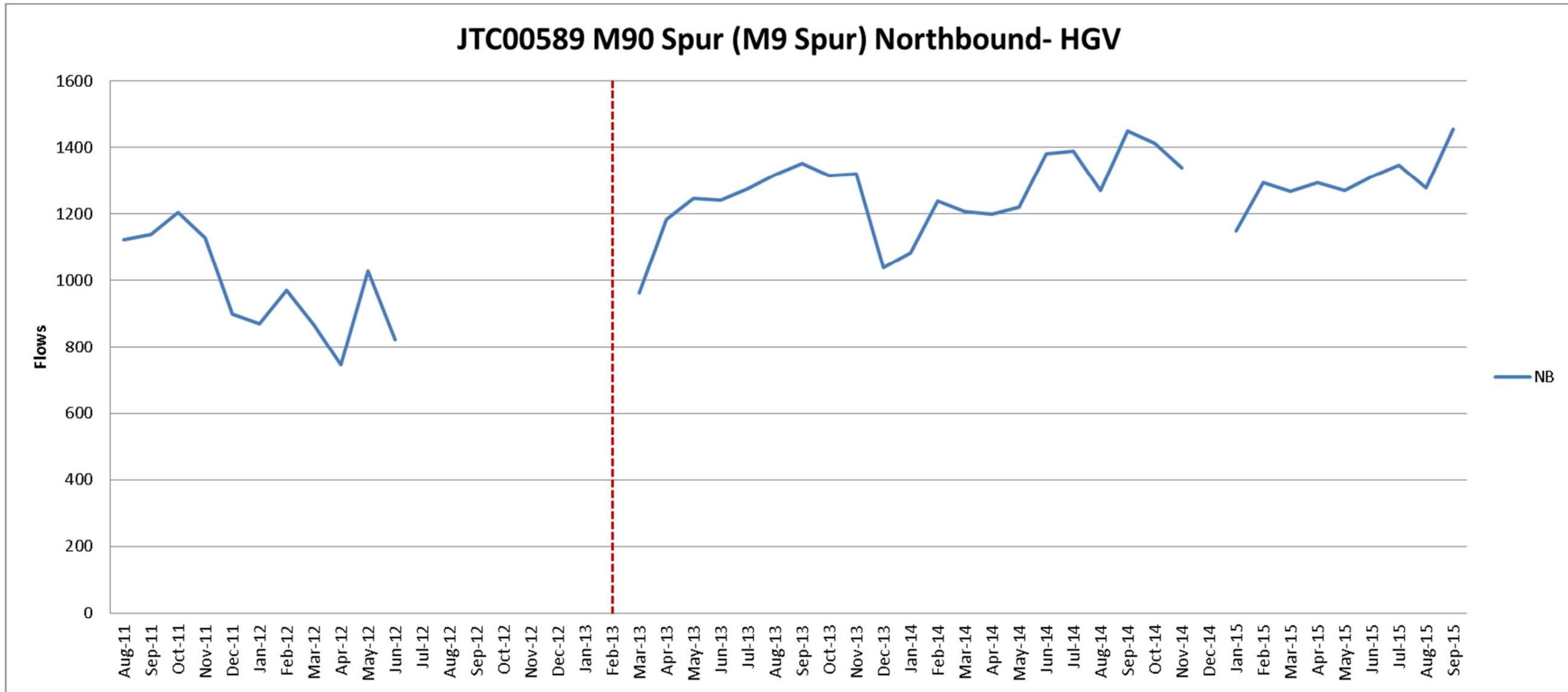


Figure 14 JTC00589 M90 Spur Northbound HGV

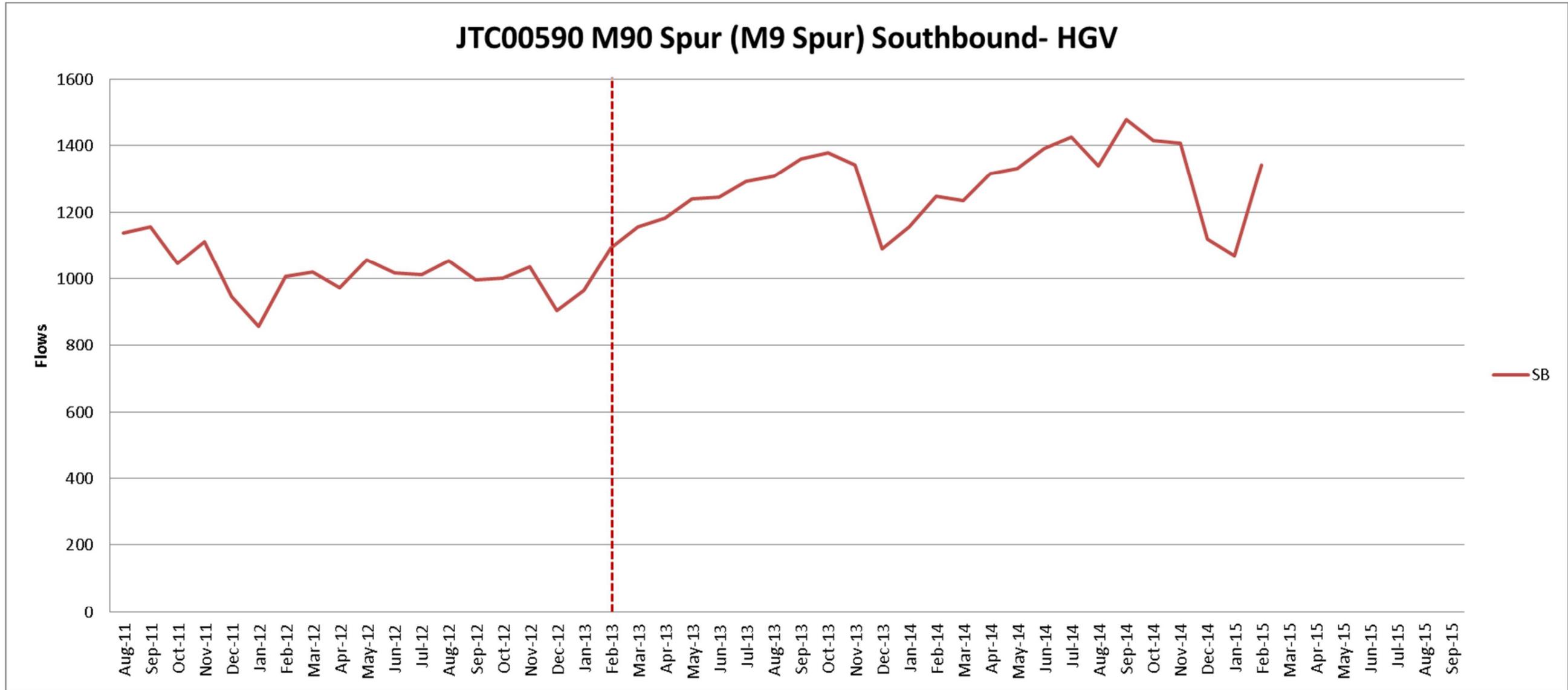


Figure 15 JTC00590 M90 Spur Southbound HGV

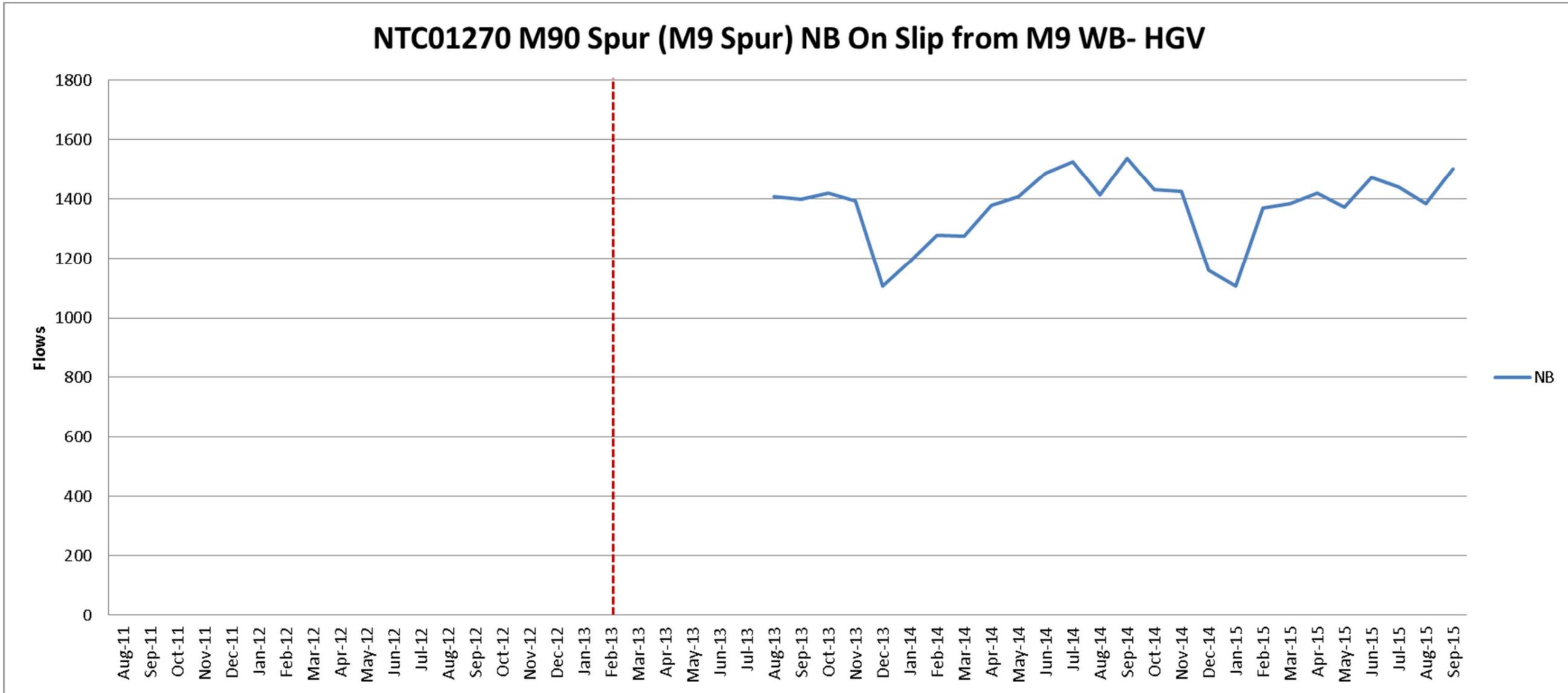


Figure 16 NTC01270 M90 Spur Northbound On Slip from M9 Westbound HGVs

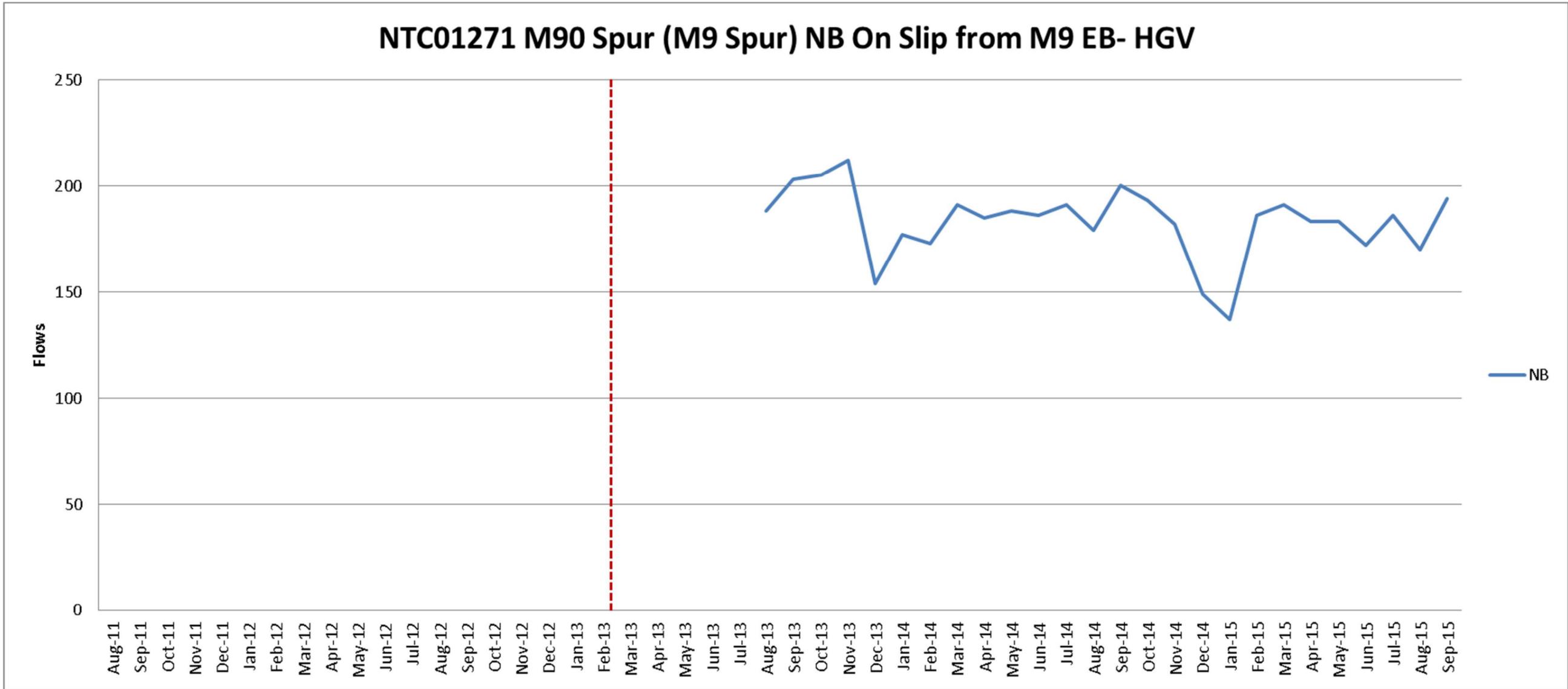


Figure 17 NTC01271 M90 Spur Northbound On Slip from M9 Eastbound HGVs

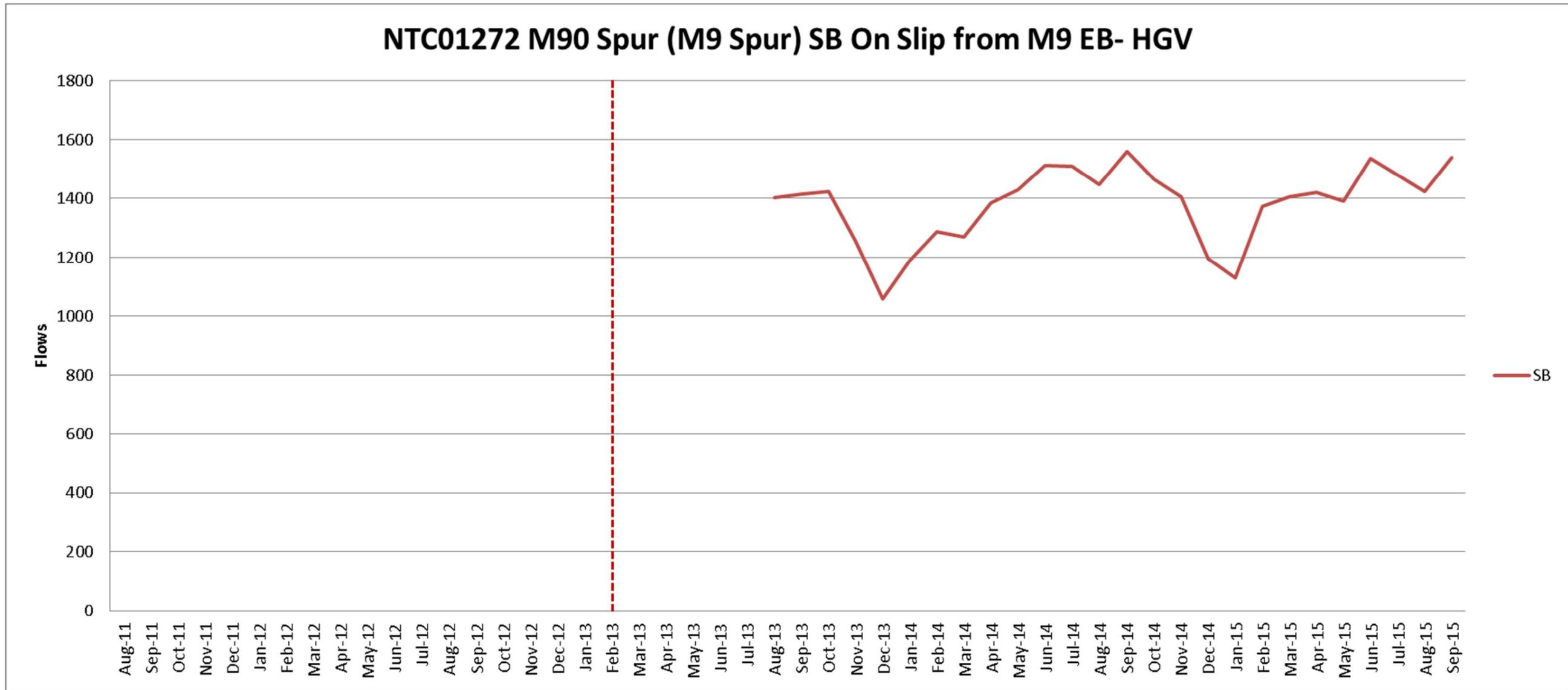


Figure 18 NTC01272 M90 Spur Southbound On Slip from M9 Eastbound HGVs

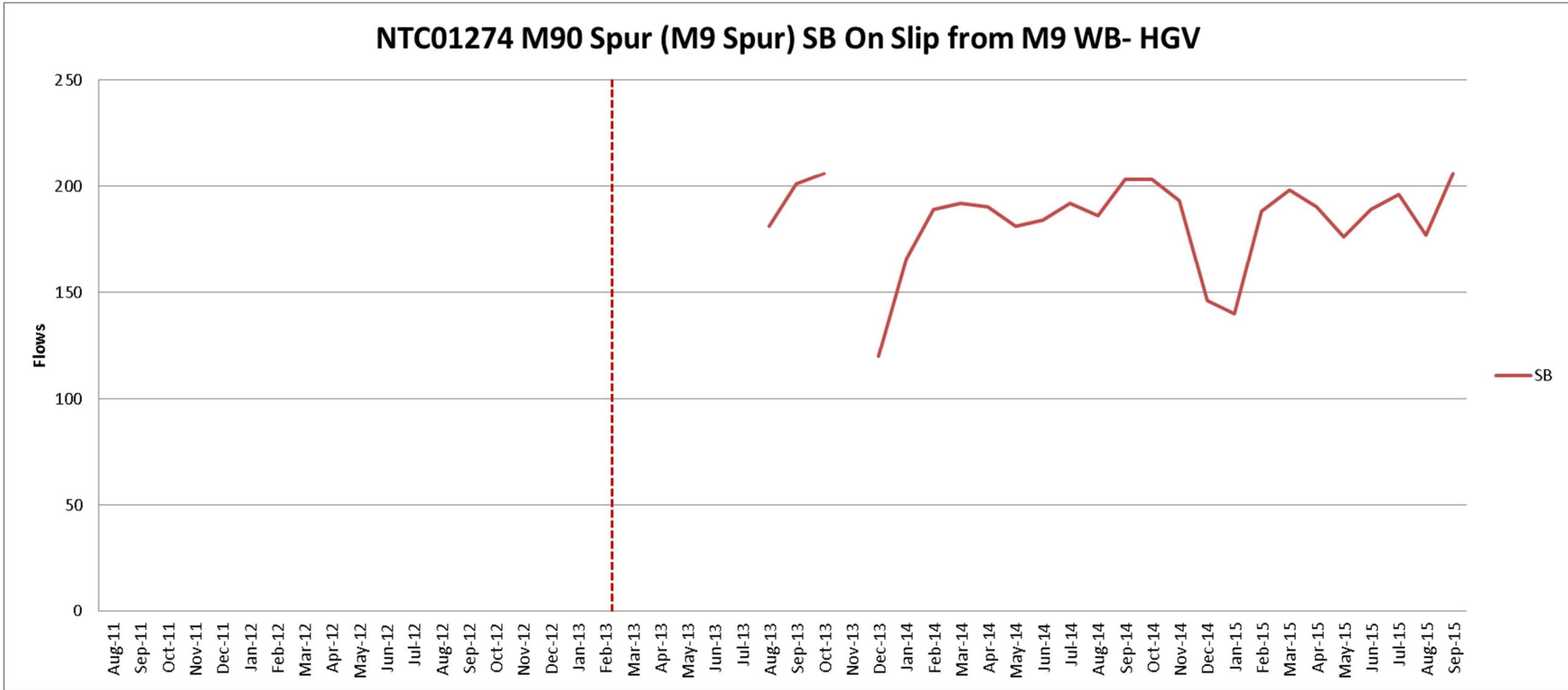


Figure 19 NTC01274 M90 Spur Southbound On Slip from M9 Westbound HGVs