show increases of 4%, 17% and 111% respectively and reduction of 45% in RSP (tailpipe) emissions. The Composite Air Score is 1.14. The contribution to pollutant emissions by different types of vehicle is very similar to that in 2011. Heavy Goods Vehicles and Private Cars are the main contributors to $NO_x$ and VOC emissions (ref. Figure 5.2f) and Heavy Goods and Light Goods Vehicles are the main contributors to RSP (tailpipe) emissions.

5.2.45 Four sensitivity analyses were conducted on the fleet size of cars and goods vehicles (Runs 7, 8, 10 and 12). These analyses assumed the same transport infrastructure but the vehicle fleet sizes are varied. The vkt varies between 215% for the High Car and High Goods Fleet scenario (Run 7) to 174% for the Medium Car and Medium Goods Fleet scenario (Run 10). The $NO_x$ emissions vary from 105% for Run 7 to 90% for Run 43. The VOC emissions vary from 119% for Run 7 to 97% for Run 10. The RSP (tailpipe) and RSP (prd) emissions vary from 57% and 216% for Run 7 to 49% and 191% for Run 10 respectively. The Composite Air Score for High Car High Goods Vehicle Fleet is 1.16 and the Composite Air Score for Medium Car Medium Goods Vehicle Fleet is 0.99. The results show that the pollutant emissions for VOC exceed the levels in 1997 except the Medium fleet sizes. $NO_x$ emission exceed the 1997 level under the High Car High Goods Fleet scenario and is within 10% of the 1997 level for the other three fleet sizes.

**High Cross Boundary Scenario**

5.2.46 A scenario was developed for 2016 to test the traffic conditions when the cross boundary traffic is assumed high (Run 75). Run 75 shows increases relative to 1997 in vkt (119%) and most pollutants ($NO_x$ 7%; VOC 21%; RSP (prd) 121%). Table 5.2p shows the results of the transport scenario with the high cross boundary traffic as a percentage of the scenario with normal cross boundary traffic (Run 18) in 2016.

**Table 5.2p**
**Comparison of Scenario (High Cross Boundary Traffic)**

| District | Run 75/18 % vkt | Run 75/18 % NOx | Run 75/18 % VOC | Run 75/18 % RSP | |
|---|---|---|---|---|---|
| | | | | Tailpipe | prd |
| Central & Western | 102.0% | 101.5% | 102.4% | 101.5% | 104.1% |
| Wan Chai | 100.7% | 100.8% | 100.7% | 101.0% | 102.8% |
| Eastern | 101.3% | 101.4% | 101.4% | 101.9% | 103.3% |
| Southern | 101.1% | 101.1% | 101.3% | 101.3% | 103.2% |
| Yau Tsim Mong | 100.6% | 100.0% | 100.5% | 99.6% | 102.7% |
| Sham Shui Po | 102.3% | 101.6% | 102.3% | 101.3% | 104.4% |
| Kowloon City | 101.3% | 101.2% | 101.4% | 101.4% | 103.3% |
| Kwun Tong | 100.6% | 101.2% | 100.8% | 102.1% | 102.7% |
| Wong Tai Sin | 101.1% | 101.7% | 101.5% | 102.7% | 103.2% |
| Kwai Tsing | 102.4% | 102.2% | 102.5% | 102.4% | 104.5% |
| Tuen Mun | 107.7% | 106.6% | 108.2% | 106.7% | 109.9% |
| Island | 100.6% | 101.1% | 101.0% | 101.5% | 102.7% |
| Yuen Long | 106.2% | 107.7% | 107.5% | 108.6% | 108.4% |
| Tai Po | 104.0% | 105.9% | 104.7% | 107.3% | 106.1% |

| District | Run 75/18 % vkt | Run 75/18 % NOx | Run 75/18 % VOC | Run 75/18 % RSP | |
|---|---|---|---|---|---|
| | | | | Tailpipe | prd |
| North | 103.3% | 104.5% | 103.9% | 105.0% | 105.5% |
| Sha Tin | 102.5% | 103.6% | 102.9% | 104.5% | 104.6% |
| Sai Kung | 101.8% | 103.4% | 102.3% | 105.1% | 103.8% |
| Tsuen Wan | 103.7% | 104.1% | 104.5% | 104.9% | 105.9% |
| **Total** | **102.9%** | **103.6%** | **103.5%** | **104.3%** | **105.0%** |

5.2.47 To identify the contribution by cross boundary traffic, a scenario is developed to test the contribution of cross boundary traffic alone. Table 5.2q shows the pollutant emissions in each district by cross boundary traffic.

**Table 5.2q**
**Contribution by Cross Boundary Traffic**

| District | % vkt | % NOx | % VOC | % RSP | |
|---|---|---|---|---|---|
| | | | | Tailpipe | prd |
| Central & Western | 5% | 9% | 6% | 14% | 5% |
| Wan Chai | 1% | 1% | 1% | 1% | 1% |
| Eastern | 2% | 1% | 1% | 1% | 2% |
| Southern | 1% | 1% | 1% | 1% | 1% |
| Yau Tsim Mong | 1% | 1% | 1% | 1% | 1% |
| Sham Shui Po | 2% | 2% | 2% | 3% | 2% |
| Kowloon City | 1% | 3% | 2% | 4% | 2% |
| Kwun Tong | 1% | 2% | 1% | 3% | 1% |
| Wong Tai Sin | 3% | 4% | 3% | 5% | 3% |
| Kwai Tsing | 6% | 9% | 7% | 11% | 6% |
| Tuen Mun | 12% | 18% | 14% | 22% | 12% |
| Island | 8% | 11% | 9% | 13% | 8% |
| Yuen Long | 20% | 37% | 29% | 45% | 21% |
| Tai Po | 5% | 13% | 8% | 18% | 5% |
| North | 17% | 35% | 26% | 43% | 18% |
| Sha Tin | 2% | 6% | 3% | 8% | 2% |
| Sai Kung | 2% | 5% | 3% | 8% | 2% |
| Tsuen Wan | 4% | 6% | 5% | 9% | 4% |

5.2.48 The results given in Table 5.2p showed that when the cross boundary traffic is high, vkt and pollutant emissions showed increases in all districts (except for RSP (tailpipe) in Yau Tsim Mong). Increases are most evident in districts with a high percentage of cross boundary traffic (Tuen Mun, Yuen Long and North) as shown in Table 5.2q. These scenarios demonstrated that the variation of cross boundary traffic could have notable effect on air pollutant emissions both locally and territory-wide.

**Recommended Transport Strategy**

5.2.49 Various input variables are modified for sensitivity tests for the Recommended Transport Strategy for 2016. The variation in terms of their environmental