or Road P1, thus the junctions of Castle Peak Road / Yick Yuen Road and Castle Peak Road / Road P1 have not been considered as critical junctions and will not be assessed in detail. Whereas the junction improvement works of Castle Peak Road/ Fuk Hang Tsuen Road proposed under HSK NDA study has also been taken into account of consideration and the interfacing issue will be discussed further in **Section 5.4**.

## 4.6 Development Traffic Generations

4.6.1 The Sites' trip generations will be added to the design years LATM matrices to produce the traffic flow assignments under the development scenario. The growth between the base year 2021 and future year 2034 will be checked against the base year flows to ensure that such change and growth are reasonable and are commensurate with the change in the road network and development data.

4.6.2 In order to estimate the traffic generation of the proposed Development, reference have been made to latest trip generation and attraction rates as extracted from Transport Planning and Design Manual (TPDM). The adopted trip rates are summarized in ***Table 4.4***.

**Table 4.4 – Adopted Trip Rate for the Proposed Development**

| Reference | Adopted Trip Rates | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | Generation | Attraction | Generation | Attraction |
| TPDM (PRH) (Average Flat Size: 40m²) (1) (pcu/hr/flat) | 0.0432 | 0.0326 | 0.0237 | 0.0301 |
| TPDM (SSF) (Average Flat Size: 50m²) (1) (pcu/hr/flat) | 0.0622 | 0.0426 | 0.0297 | 0.0401 |
| Welfare (pcu/hr/100m² GFA) (2) | 0.1703 | 0.2452 | 0.1573 | 0.1175 |
| Kindergarten (pcu/classroom) (3) | 1.6429 | 1.6429 | 0.9286 | 0.9286 |
| Primary School (pcu / classroom) (4) | 1.3462 | 1.3846 | 0.6154 | 0.6154 |
| Retail (pcu/hr/100m² GFA) (5) | 0.2296 | 0.2432 | 0.3100 | 0.3563 |
| Office (pcu/hr/100m² GFA) (5) | 0.1703 | 0.2452 | 0.1573 | 0.1175 |

Sources:
(1) TPDM Volume 1, Chapter 3, Appendix, Table 1
(2) Trip rates for Welfare Facilities are based on "Office" from TPDM Volume 1, Chapter 3, Appendix, Table 2
(3) Trip rates for Kindergarten are based on in-house database
(4) TD 05/2006 Trip Generation Survey 2006 Report Table 6.9 primary school in New Territories West
(5) TPDM Volume 1, Chapter 3, Appendix, Table 2

4.6.3 Based on the latest development parameters as listed in ***Table 3.1*** and the adopted trip rates as shown in ***Table 4.4***, the total traffic generations of the proposed housing Development and proposed public transport services are computed and summarized in ***Table 4.5*** to ***Table 4.7*** respectively.

**Table 4.5 – Traffic Generation for the Proposed Housing Development**

| Proposed Land Use | Flat Nos. | Traffic Generations (pcu/hr) | | | |
|---|---|---|---|---|---|
| | | AM Peak | | PM Peak | |
| | | Generation | Attraction | Generation | Attraction |
| PRH | 5,450 flats | 236 | 178 | 130 | 165 |
| SSF | 1,970 flats | 123 | 84 | 59 | 79 |
| | Sub-total | 359 | 262 | 189 | 244 |
| Retail | 5,912m² GFA | 14 | 15 | 19 | 22 |
| Welfare | 15,856m² GFA | 27 | 39 | 25 | 19 |
| Kindergarten | 15 classrooms | 25 | 25 | 14 | 14 |
| Primary School | 30 classrooms | 41 | 42 | 19 | 19 |
| Office (1) | 1,098m² GFA | 2 | 3 | 2 | 2 |
| **Total** | | **465** | **386** | **268** | **320** |

(1) Ancillary facilities such as District Councillor's Office and Estate Management Office, etc. are considered as office uses for conservative estimate of the traffic impact.

**Table 4.6 – Traffic Generation for the Proposed Public Transport Interchange**

| PT Mode | No. of Route | Frequency | No. of Bus/GMB per hour | Traffic Generations (pcus/hr) | | | |
|---|---|---|---|---|---|---|---|
| | | | | AM Peak | | PM Peak | |
| | | | | Generation | Attraction | Generation | Attraction |
| Bus | 5 | 5-15 minutes | 37 | 95 | 95 | 95 | 95 |
| Green Minibus (1) | 1 | 6 minutes | 10 | 15 | 15 | 15 | 15 |
| **Total** | | | | **110** | **110** | **110** | **110** |

Note: 1. For conservative approach, a green minibus route with 6 minutes frequency have been assumed.

**Table 4.7 – Estimated Traffic Generation for the Proposed Development**

| Site | Traffic Generations (pcus/hr) | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | Generation | Attraction | Generation | Attraction |
| The Development near TKT | **575** | **496** | **378** | **430** |

4.6.4 As shown in ***Table 4.7***, it is estimated that the proposed Development will generate and attract about 575 pcu/hr and 496 pcu/hr in the AM peak hour and generate and attract about 378 pcu/hr and 430 pcu/hr in the PM peak hour respectively under the current proposed development parameters. The development traffic flows along the affected road network is shown in ***Figure 4.3***.

4.6.5 A comparison on the total traffic generation for the proposed development adopted in the previously approved TTIA and this application is presented in **Table 4.8**. As

shown in the table, the net increase in the total traffic generation in this application is considered minimal as compared with the previously approved TTIA.

**Table 4.8 – Comparison of Traffic Generation**

| Site | Traffic Generations (pcus/hr) | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | Generation | Attraction | Generation | Attraction |
| This application (A) | 575 | 496 | 378 | 430 |
| Previously approved TTIA (B) | 580 | 480 | 370 | 435 |
| **Net (A-B)** | **-5** | **16** | **8** | **-5** |

## 4.7 Design Traffic Forecasts

4.7.1 As mentioned in **Section 4.1**, year 2034 is adopted as the design year of this study. The year 2034 design traffic forecast (with development) is shown in ***Figure 4.4.***

# 5 OPERATIONAL TRAFFIC IMPACT ASSESSMENT

## 5.1 Overview

5.1.1 Traffic forecasts were developed for design year 2034. The operational TTIA would identify the critical issues and recommend any associated traffic improvement schemes to alleviate the identified traffic problem as necessary.

## 5.2 Critical Junction Assessment

5.2.1 It was understood that TD has proposals of modification works for three junctions along Castle Peak Road in Hung Shui Kiu, including Castle Peak Road – Hung Shui Kiu / Hung Tak Road (J2), Castle Peak Road – Hung Shui Kiu / Tan Kwai Tsuen Road (J3) and Castle Peak Road – Hung Shui Kiu / Shun Tat Street (J5). The layouts of the proposed improvement works are shown in ***Appendix D1, D2*** and ***D3*** respectively. It is anticipated that TD's proposed improvement works would be in place by 2034 and they had been taken into consideration in the junction assessment.

5.2.2 Under CE2/2011, it is proposed to modify the traffic lanes configuration to optimize the junction performance by converting the Castle Peak Road southbound left-turn-only lane to straight-ahead-and-left-turn shared lane as illustrated in ***Appendix C3***. According to the HSK NDA latest available information, the junction improvement works to J8 will be implemented by 2026 when the first stage of phased intake. The planned junction improvement by HSK NDA had been taken into consideration in the junction assessment.

5.2.3 The junction assessment result based on the forecasted peak hour traffic flows are summarized in ***Table 5.1***.

**Table 5.1 – 2034 Junction Assessment**

| Ref. | Junction | Method of Control | RC/DFC (1) | | | |
|---|---|---|---|---|---|---|
| | | | 2034 Reference Case | | 2034 Design Case | |
| | | | AM | PM | AM | PM |
| J1 | Hung Tin Road / Hung Chi Road | Signal | 30% | 28% | 24% | 25% |
| J2 | Castle Peak Road – Hung Shui Kiu / Hung Tak Road (2) | Signal | 69% | >100% | 47% | 83% |
| J3 | Castle Peak Road – Hung Shui Kiu / Tan Kwai Tsuen Road (2) | Signal | 47% | 66% | 32% | 59% |
| J4 | Tan Kwai Tsuen Road / Hung Shun Road | Priority | 0.50 | 0.39 | 0.69 | 0.53 |
| J5 | Castle Peak Road – Hung Shui Kiu / Shun Tat Street (2) | Signal | 24% | 17% | -10% | -8% |
| J6 | Shun Tat Street / Tat Fuk Road | Priority | 0.06 | 0.04 | 0.20 | 0.16 |
| J7 | Shun Tat Street / Tung Fuk Road (3) | Signal | >100% | >100% | 41% | 70% |
| J8 | Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road (4) | Signal | -5% | -1% | -12% | -8% |

| Ref. | Junction | Method of Control | RC/DFC (1) | | | |
|---|---|---|---|---|---|---|
| | | | 2034 Reference Case | | 2034 Design Case | |
| | | | AM | PM | AM | PM |
| J9 | Castle Peak Road – Hung Shui Kiu / Hung Tin Road | Signal | 27% | 42% | 27% | 42% |
| J10 | Tan Kwai Tsuen Road/ Shui Fu Road | Priority | 0.17 | 0.12 | 0.44 | 0.17 |
| J11 | Tin Shui Wai West Interchange | Round-about | 0.80 | 0.92 | 0.86 | 0.97 |
| J12 | Shui Fu Road / Proposed Access Road (5) | Signal | >100% | >100% | 17% | 86% |

Note:
(1) RC = Reserve Capacity for Signal-Controlled Junction, DFC = Design Flow to Capacity for Priority Junction and Roundabout
(2) Based on TD's planned improvement works (Appendix D1, D2 & D3 for J2, J3 & J5 respectively)
(3) Based on Proposed Junction Improvement (Figure No. 3.2)
(4) Based on Proposed Junction Improvement under CE2/2011 (Appendix C3)
(5) Based on Proposed Junction Improvement (Figure No. 3.5)

5.2.4 The assessment results indicate that all the critical junctions would be operated within their capacities except J5 – Castle Peak Road – Hung Shui Kiu / Shun Tat Street and J8 – Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road would be operated over its capacity and J11 – Tin Shui Wai West Interchange will be operating close to capacity in year 2034.

5.2.5 With reference to the Yuen Long South Development – Stages 2B and 3 Works – Design and Construction - TTIA Review Paper for the Stage 2B Work, the planned junction modification at Tin Shui Wai West Interchange will be implemented under Stage 2B Works which will be completed before Second Phase Development's population intake in 2033. It is expected that the roundabout will be operating within capacity in design year 2034 with the planned improvement works by Yuen Long South Development in place as shown in **Table 5.2** below.

**Table 5.2 – Performance of Tin Shui Wai West Interchange in 2036 with planned improvement by Yuen Long South Development**

| Ref. | Junction | Method of Control | RC/DFC (1) | |
|---|---|---|---|---|
| | | | 2036 Design Case (2) | |
| | | | AM | PM |
| J11 | Tin Shui Wai West Interchange | Roundabout | 0.66 | 0.35 |

Note:
(1) RC = Reserve Capacity for Signal-Controlled Junction, DFC = Design Flow to Capacity for Priority Junction and Roundabout
(2) With reference to the Yuen Long South Development – Stages 2B and 3 Works – Design and Construction - TTIA Review Paper for the Stage 2B Work

## 5.3 Road Capacity Assessment

5.3.1 **Table 5.3** summarizes the traffic forecasts and V/C ratio assessments for year 2034.

**Table 5.3 – Road Links Capacity Assessment for Design Year 2034**

| Ref. | Road | Direction (No. of lanes) | Capacity (pcu/hr) | 2034 Reference Case (Figure 4.2) | | | | 2034 Design Case (Figure 4.4) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Traffic Flow (pcu/hr) | | V/C Ratio | | Traffic Flow (pcu/hr) | | V/C Ratio | |
| | | | | AM | PM | AM | PM | AM | PM | AM | PM |
| J11 | Slip Road from Yuen Long Highway (WB) to Hung Tin Road (NB) | NB (1) | 1,800 (5) | 1,875 | 2,150 | 1.04 | 1.19 | 2,015 | 2,265 | 1.12 | 1.26 |
| | Slip Road from Yuen Long Highway (EB) to Hung Tin Road (NB) | NB (1) | 1,800 (5) | 1,150 | 1,485 | 0.64 | 0.83 | 1,150 | 1,485 | 0.64 | 0.83 |
| | Slip Road from Hung Tin Road (SB) to Yuen Long Highway (EB) | EB (1) | 1,800 (5) | 1,800 | 1,430 | 1.00 | 0.79 | 1,915 | 1,510 | 1.06 | 0.84 |
| | Slip Road from Hung Tin Road (SB) to Yuen Long Highway (WB) | WB (1) | 1,800 (5) | 2,140 | 2,040 | 1.19 | 1.13 | 2,140 | 2,040 | 1.19 | 1.13 |
| L1 | Yuen Long Highway – Tin Shui Wai | EB (3) | 6,110 (2) | 6,795 | 7,090 | 1.11 | 1.16 | 6,910 | 7,170 | 1.13 | 1.17 |
| | | WB (3) | 6,110 (2) | 6,245 | 6,135 | 1.02 | 1.00 | 6,385 | 6,250 | 1.05 | 1.02 |
| L2 | Hung Tin Road | NB (2) | 3,600 (1) | 3,090 | 3,685 | 0.86 | 1.02 | 3,255 | 3,805 | 0.90 | 1.06 |
| | | SB (2) | 3,600 (1) | 3,770 | 3,315 | 1.05 | 0.92 | 3,885 | 3,395 | 1.08 | 0.94 |
| L3 | Castle Peak Road – Hung Shui Kiu | EB (2) | 2,860 (3) | 1,240 | 1,255 | 0.43 | 0.44 | 1,330 | 1,325 | 0.47 | 0.46 |
| | | WB (2) | 2,860 (3) | 845 | 995 | 0.30 | 0.35 | 945 | 1,035 | 0.33 | 0.36 |
| L4 | Shun Tat Street | NB (1) | 1,055 (4) | 235 | 210 | 0.22 | 0.20 | 530 | 440 | 0.50 | 0.42 |
| | | SB (1) | 1,055 (4) | 220 | 245 | 0.21 | 0.23 | 470 | 465 | 0.45 | 0.44 |
| - | New Slip Road Connection to TSWWI | EB (1) | 1,800 (5) | 100 | 40 | 0.06 | 0.02 | 265 | 160 | 0.15 | 0.09 |
| | | WB (1) | 1,800 (5) | 75 | 45 | 0.04 | 0.02 | 215 | 160 | 0.12 | 0.09 |

Notes:
(1) Based on TPDM Volume 2 Chapter 2.4, peak hourly design flow for dual 2 lane expressway/trunk road is 3000 veh/hr per one direction of flow. Take pcu factor as 1.3, the link capacity is 3900 pcu/hr. For district distributor at Hung Tin Road, 0.9 factor is applied to reflect the lowered class of road hierarchy, i.e. 3600 pcu/hr.
(2) Based on TPDM Volume 2 Chapter 2.4, peak hourly design flow for dual 3 lane expressway is 4700 veh/hr per one direction of flow. Take pcu factor as 1.3, the link capacity is 6110 pcu/hr.
(3) Based on TPDM Volume 2 Chapter 2.4, peak hourly design flow for dual 4 lane district distributor (with frontage, bus stops and pedestrian crossings) undivided carriageway is 2000 veh/hr per one direction of flow. With reference to difference in design flow between undivided carriageway and dual carriageway of primary distributor, 200 veh/hr design flow is added to undivided carriageway arrangement, i.e. 2200 veh/hr design flow per one direction of flow of dual carriageway is adopted. Take pcu factor as 1.3, the link capacity is 2860 pcu/hr.
(4) Based on TPDM Volume 2 Chapter 2.4, peak hourly design flow for 2 lane 10m width undivided carriageway is 2200 veh/hr for both direction of flow. For local road type at Shun Tat Street, 0.8 factor is applied to reflect the lowered class of road hierarchy, i.e. 1760 veh/hr 2-way. Take local road pcu factor as 1.2, the link capacity is 2110 pcu/hr, 2-way, i.e. 1055 pcu/hr per direction.
(5) 1800 pcu/hr link capacity for one lane slip road is adopted for consistency amongst other projects.

5.3.2 The assessment results indicated that most of the road links are expected to operate with V/C ratios below 1 except Slip Road from Hung Tin Road (SB), Yuen Long Highway – Tin Shui Wai and Hung Tin Road which will operate at V/C ratios above 1.0 but below 1.2 in year 2034, indicating a situation of overloading and a manageable degree of congestion and Slip Road from Yuen Long Highway (WB) which will operate at V/C ratios above 1.2 indicating more serious congestion with traffic speeds deteriorating progressively with further increase in traffic. With reference to the Yuen Long South Development – Stages 2B and 3 Works – Design

and Construction - TTIA Review Paper for the Stage 2B Work, the planned junction modification at Tin Shui Wai West Interchange will be implemented under Stage 2B Works which will be completed before Second Phase Development's population intake in 2033. It is expected that the V/C ratio of the concerned slip roads and road links will be operating within capacity in design year 2034 with the planned improvement works by Yuen Long South Development in place as shown in **Table 5.4** below.

**Table 5.4 – Performance of Tin Shui Wai West Interchange in 2036 with planned improvement by Yuen Long South Development**

| Ref. | Road | Direction (No. of lanes) | Capacity (pcu/hr) | 2036 Design Case (1) | | | |
|---|---|---|---|---|---|---|---|
| | | | | Traffic Flow (pcu/hr) | | V/C Ratio | |
| | | | | AM | PM | AM | PM |
| J11 | Slip Road from Yuen Long Highway (WB) to Hung Tin Road (NB) | NB (1) | 1,800 (1) | 1,425 | 1,695 | 0.79 | 0.94 |
| | Slip Road from Hung Tin Road (SB) to Yuen Long Highway (WB) | WB (1) | 3,600 (1) | 2,650 | 2,930 | 0.74 | 0.62 |

Notes: (1) With reference to the Yuen Long South Development – Stages 2B and 3 Works – Design and Construction - TTIA Review Paper for the Stage 2B Work

## 5.4 Proposed Improvement Scheme

5.4.1 According to the junction performance result in ***Table 5.1***, the junction of Castle Peak Road – Hung Shui Kiu / Shun Tat Street (J5) and Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road (J8) will be exceeded or operated closed to capacity. Hence, junction improvement measures are proposed and describes below.

*Proposed Junction Improvement at Castle Peak Road – Hung Shui Kiu / Shun Tat Street (J5)*

5.4.2 As discussed in Para. 3.3.5, it is proposed to modify the layout of Castle Peak Road / Shun Tat Street to provide a right turning movement from Shun Tat Street to allow traffic access to Yuen Long direction. The proposed junction layout and method of control are shown in ***Figure 3.4.***

*Proposed Junction Improvement at Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road (J8)*

5.4.3 It is proposed to widen the approach arm of Fuk Hang Tsuen Road (NB) to provide one additional "turn-left" lane in addition to modify the existing uncontrolled cautionary pedestrian crossing across Fuk Hang Tusen Road to be signal-controlled. The details of junction design are shown in ***Figure 5.1.*** As suggested by the overlay of private land lot plan, the proposed improvement scheme does not required resumption of private land. The above improvement work will be carried out by Highways Department under 852TH - Widening of Fuk Hang Tsuen Road (between Castle Peak Road – Lam Tei and Fuk Hang Tsuen Lane). According to LC Paper No. CB(4)254/2022(04), the proposed works will be commenced upon obtaining funding approval from the Finance Committee for target completion in around 2.5 years. It is anticipated that the planned improvement works will be completed before the population intake of the proposed Development. The concerned party

shall be closely liaised with to ensure that the proposed improvement works shall be completed before population intake.

5.4.4 The operational performance of the junction was reassessed based on the proposed junction improvement works, and the results are summarized in **Table 5.5**.

**Table 5.5 – Junction Performance under Proposed Improvement Scheme**

| Ref. | Junction | Method of Control | 2034 Reference Case | | 2034 Design Case | |
|---|---|---|---|---|---|---|
| | | | AM | PM | AM | PM |
| J5 | Castle Peak Road – Hung Shui Kiu / Shun Tat Street (refer to Figure 3.4) | Signal | 97% | 86% | 16% | 20% |
| J8 | Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road (refer to Figure 5.1) | Signal | 24% | 25% | 16% | 17% |

5.4.5 As shown in **Table 5.5**, the junctions Castle Peak Road – Hung Shui Kiu / Shun Tat Street (J5) and Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road (J8) after improvement could operate with adequate capacity (i.e. ≥ 10% R.C.) with the proposed improvement schemes in place. It is understood that further junction improvement scheme at the junction of Castle Peak Road – Hung Shui Kiu / Shun Tat Street will be implemented by an adjacent planned brownfield project and the junction is anticipated to be operated with satisfied capacity.

## 5.5 Construction Traffic Impact

5.5.1 The major construction traffic generation from the proposed Development during construction are mainly from site formation cut/fill works, transporting the construction/ demolition materials and etc. According to the latest construction programe, it is estimated that the peak construction traffic generated from the proposed Development will generate and attract 10 pcu/hr and 30 pcu/hr in AM and PM peak respectively (i.e. 40 pcu/hr 2 -way traffic) in design year 2025/2026.

5.5.2 The excavated materials generated from the site formation works may be stockpiled at the vacant lands adjacent to the TKT North Fresh Water Service Reservoir prior to the commissioning of Proposed Access Road connected the Site to TSWWI which is anticipated to be completed in year 2031. When the Proposed Access Road in place, it is assumed that the construction traffic will be transported to the available public fill reception facilities via Yuen Long Highway in order to minimize the traffic impact on the existing local roads connecting to Castle Peak Road. The proposed construction traffic routing is shown on ***Figure 5.2***.

5.5.3 According to the traffic assessment results in 2034 for both junctions and road links with the Proposed Development trip generation in **Tables 5.1** and **5.3**, most of the junctions and road links (i.e. Yuen long Highway) would still have adequate capacity to handle the development trips (i.e. 1070 pcu/hr, two-way in AM Peak & 810 pcu/hr, two-way in PM Peak) during both AM and PM peak hours. Considering the relatively low volume of construction traffic generated by the proposed Development as mentioned above, it is anticipated that no insurmountable impact

on the existing road network due to the proposed Development during construction stage in 2025/26.

## 5.6 Sensitivity Study for Phases 1 & 2 Intake in 2030

5.6.1 A sensitivity study for Phases 1 and 2 intake (around 60% of the total population intake and without connection between proposed access road and Tin Shui Wai West Interchange) in 2030 has been carried out. By using the same model methodology as stated in Section 4, the year 2030 reference (without development) and design traffic forecast (with development) are shown in ***Figures 5.4*** and ***5.5***, respectively.

5.6.2 It is estimated that Phases 1 and 2 will generate and attract about 443 pcu/hr and 396 pcu/hr in the AM peak hour and generate and attract about 306 pcu/hr and 338 pcu/hr in the PM peak hour respectively as shown in ***Table 5.6*** under the current proposed development parameters as stated in Section 4.

**Table 5.6– Estimated Traffic Generation for the Proposed Development in 2030**

| Site | Traffic Generations (pcu/hr) | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | Generation | Attraction | Generation | Attraction |
| Total Traffic Generation upon full intake as presented in Table 4.7 | **575** | **496** | **378** | **430** |
| Estimated Phase 3 development traffic (3,050 flats) | 132 | 100 | 72 | 92 |
| Traffic Generation from Phases 1 and 2 development | **443** | **396** | **306** | **338** |

5.6.3 The junction assessment result based on the forecasted peak hour traffic flows are summarized in ***Table 5.7***.

**Table 5.7– 2030 Junction Assessment**

| Ref. | Junction | Method of Control | RC/DFC (1) | | | |
|---|---|---|---|---|---|---|
| | | | 2030 Reference Case | | 2030 Design Case | |
| | | | AM | PM | AM | PM |
| J1 | Hung Tin Road / Hung Chi Road | Signal | 43% | 45% | 36% | 38% |
| J2 | Castle Peak Road – Hung Shui Kiu / Hung Tak Road (2) | Signal | 75% | >100% | 43% | 78% |
| J3 | Castle Peak Road – Hung Shui Kiu / Tan Kwai Tsuen Road (2) | Signal | 55% | 70% | 32% | 55% |
| J4 | Tan Kwai Tsuen Road / Hung Shun Road | Priority | 0.48 | 0.38 | 0.72 | 0.56 |
| J5 | Castle Peak Road – Hung Shui Kiu / Shun Tat Street (2) | Signal | 36% | 31% | -3% | 0% |
| J6 | Shun Tat Street / Tat Fuk Road | Priority | 0.05 | 0.04 | 0.20 | 0.17 |
| J7 | Shun Tat Street / Tung Fuk Road (3) | Signal | >100% | >100% | 39% | 68% |

| Ref. | Junction | Method of Control | RC/DFC (1) | | | |
|---|---|---|---|---|---|---|
| | | | 2030 Reference Case | | 2030 Design Case | |
| | | | AM | PM | AM | PM |
| J8 | Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road (4) | Signal | 6% | 10% | -2% | 3% |
| J9 | Castle Peak Road – Hung Shui Kiu / Hung Tin Road | Signal | 28% | 49% | 16% | 36% |
| J10 | Tan Kwai Tsuen Road/ Shui Fu Road | Priority | 0.16 | 0.12 | 0.38 | 0.17 |
| J12 | Shui Fu Road / Proposed Access Road (5) | Signal | >100% | >100% | >100% | >100% |

Note:
(1) RC = Reserve Capacity, DFC = Design Flow to Capacity
(2) Based on TD's planned improvement works (Appendix D1, D2 & D3 for J2, J3 & J5 respectively)
(3) Based on Proposed Junction Improvement (Figure No. 3.2)
(4) Based on Proposed Junction Improvement under CE2/2011 (Appendix C3)
(5) Based on Proposed Junction Improvement (Figure No. 3.5)

5.6.4 The assessment results indicate that all the critical junctions would be operated within their capacities except J5 – Castle Peak Road – Hung Shui Kiu / Shun Tat Street and J8 Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road would be operated over its capacities in year 2030 without Phase 3 and without the connection with Tin Shui Wai West Interchange.

5.6.5 The junction improvement scheme of J5 and J8 as mentioned on the above section will also be proposed in order to enhance the junction capacity in 2030.

5.6.6 The operational performance of the junction was reassessed based on the proposed junction improvement works, and the results are summarized in **Table 5.8**.

**Table 5.8– Junction Performance under Proposed Improvement Scheme**

| Ref. | Junction | Method of Control | 2030 Reference Case | | 2030 Design Case | |
|---|---|---|---|---|---|---|
| | | | AM | PM | AM | PM |
| J5 | Castle Peak Road – Hung Shui Kiu / Shun Tat Street (refer to Figure 3.4) | Signal | >100% | >100% | 19% | 27% |
| J8 | Castle Peak Road – Lam Tei / Fuk Hang Tsuen Road | Signal | 39% | 40% | 29% | 31% |

5.6.7 As shown in **Table 5.8**, both J5 and J8 could operate with adequate capacity with the proposed improvement schemes in place.

5.6.8 For the affected road links, the V/C ratios are expected to be similar to the results of design year 2034 which most of the road links will operate with V/C ratios below 1.0 except the slip roads to/from Yuen Long Highway and Yuen Long Highway – Tin Shui Wai and Hung Tin Road which will operate at V/C ratios above 1.0 but below 1.2, indicating a situation of overloading and a manageable degree of congestion.