Annex E

Updated Report of the Sewerage Impact Assessment

Lot 4822 in D.D. 104, Kam Pok Road and Adjoining Government Land, Mai Po, Yuen Long

Sewerage Impact Assessment

December 2025

Date	Revision	Prepared by	Checked by	Approved by
July 2025	0	Robben Cheung	Casey Man	T.C Lam
Oct 2025	1	Robben Cheung	Casey Man	T.C Lam
Dec 2025	2	Robben Cheung	Casey Man	T.C Lam

Meinhardt Infrastructure and Environment Ltd
邁進基建環保工程顧問有限公司

Contents

LIST OF APPENDICES

1. INTRODUCTION

1.1. Meinhardt Infrastructure & Environment Limited (MIEL) has been commissioned to conduct this Sewerage Impact Assessment ("SIA") to demonstrate the proposed medium-rise residential development on the Application Site is technically feasible in the sewage disposal aspect.

1.2. The Application Site (hereinafter referred to as "the Site") is located east of Kam Pok Road near Fairview Park in Yuen Long. The Site location is shown in **Appendix A**.

1.3. The objectives of this SIA are:

- Identification of existing sewerage facilities serving the concerned area;
- Description of methodology adopted in this assessment;
- Estimation of sewage flow from the subject development;
- Assessment of sewerage impact on the existing or/and planned sewerage facilities due to the increased sewage flow from the subject development; and
- Recommendation of on-site sewerage facilities (on-site sewage pumping station) to cater for the development if found necessary.

2. GENERAL SITE DESCRIPTION

2.1. The Site is bounded by Fung Chuk Road, Ha Chuk Yuen Road, Kam Pok Road and Ha San Wai Road covering a total land area of about 37,870m^2. It is located in the vicinity of Fairview Park, Villa Camellia, Helene Terrace, 3-storey village dwellings in Ha San Wai and Yau Pok Road Light Public Housing.

2.2. The existing topography of the Site is sloping gently from the north towards the south with ground level varies from +7.0mPD to +4.3mPD approximately.

3. DEVELOPMENT PROPOSAL

3.1. The proposed development comprises five medium-rise residential buildings with a domestic plot ratio of 1.5, and one 2-storey facility compound containing one club house, one 6-classroom kindergarten and a neighbourhood elderly centre. The building heights of these 5 residential towers are 16 residential storeys high. The total domestic GFA is about 56,805m^2. Upon completion in 2031, the proposed development will provide a total of 1,303 private high-quality flats.

3.2. The proposed development also includes a two-storey facility compound comprising a clubhouse (of about 2,272 m^2 exempted GFA) which includes a restaurant, an indoor swimming pool and an outdoor swimming pool; one 6-classroom kindergarten (of about 380m^2 non-domestic GFA); One neighbourhood elderly centre with NOFA is about 303m^2.

3.3. The proposed master layout plan is shown in **Appendix A**.

4. EXISTING AND PLANNED SEWERAGE SYSTEM

Existing Sewerage System

4.1. Based on the sewerage records, there are no existing public sewers in the vicinity of the Site. The closest existing public sewerage facility is Nam Sang Wai Sewage Pumping Station (NSWSPS),

which is located west of Pok Wai South Road. The collected sewage in NSWSPS is eventually conveyed to existing Yuen Long Sewage Treatment Works (YLSTW).

4.2. The designed capacity and the current average daily flow in terms of ADWF (m^3/day) of NSWSPS are shown in **Table 1**.

Table 1 – Capacity of NSWSPS

Sewerage Facility	Design Capacity (m^3/day)	Current Average Daily Flow (m^3/day)	Spare Capacity (m^3/day)
NSWSPS	42,921	3,900	39,021

Planned Sewerage System

4.3. According to the approved EIA report for "Yuen Long Effluent Polishing Plant – Investigation, Design and Construction" (EIA-259/2018), DSD proposed to upgrade existing YLSTW to Yuen Long Effluent Polishing Plant (YLEPP) to enhance its capacity and treatment level. The upgrade works would be carried out in 2 stages. Under Stage 1, YLSTW will be upgraded to YLEPP with treatment capacity of 100,000m^3/day. The project completion date of YLEPP – Stage 1 is mid-2027, which will be completed before the completion of the proposed development at the Site in 2031. The following Stage 2 works being planned to increase YLEPP treatment capacity to 180,000m^3/day by 2030 tentatively.

4.4. According to the approved Planning Application No. Y/YL-NSW/7, there will be public gravity sewers ranging from 375mm to 600mm diameter located along Pok Wai West Road and Pok Wai South Road connecting to NSWSPS. These sewers from manhole WKT009 to manhole WKT015 are planned to serve the potential development in the surrounded area with a minimum capacity of 15,500m^3/d, which is an initial estimation by EPD, and Yau Pok Road Light Public Housing and proposed development at Yau Mei San Tsuen with an estimated sewage flow of 1,066.65m^3/d and 962.28 m^3/d respectively. Apart from the abovementioned, 2 x 675mm public gravity sewers are proposed under Approved Planning Application No. Y/YL-MP/10. The estimated sewage flow from Yau Pok Road Light Public Housing and Yau Mei San Tsuen is shown in **Appendix B**. The proposed completion year of this rezoning development (Y/YL-NSW/7) is 2028.

5. ASSESSMENT METHODOLOGY AND PARAMETERS

5.1. Capacity assessment of the public sewers, pumping station and sewage treatment plant is being carried out to assess the adequacy of the capacity in the existing or/and planning sewerage system. The design parameters and standards are shown in **Table 2** below.

Table 2 - Design Parameters and Standards

Design Standards/ Guidelines	• DSD Sewerage Design Manual, Part 1 & 2 (SDM) • EPD Guideline for Estimating Sewage Flows for Sewage Infrastructure Planning (GESF) • Data published by Census and Statistics Department (C&SD) • Commercial and Industrial Floor Space Utilization Survey (CIFSUS) by Planning Department

Flow Formula	Colebrook White Formula
Sewer Roughness Coefficient, Ks	1.5 mm
Unit Flow Factor	• 0.27m^3/d/head (Domestic, Private R2) • 0.28m^3/d/head (Commercial Employee plus "Community, Social & Personal Services", J11) • 1.58m^3/d/head (Commercial Employee plus "Restaurants & Hotels", J10) • 0.04m^3/d/head (School Student)
Contributing Population	Contributing Population = Calculated ADWF/0.27
Peaking Factors	Table T-5 of GESF
Catchment Inflow Factor	Table T-4 of GESF Catchment Inflow Factors (PCIF): Yuen Long =1.00
Average Household Size	2.7
Staff Density of Club House	Table 8 of CIFSUS Community, Social & Personal Services: 2.3 workers per 100m^2 GFA
No. of Staff in Restaurant	15
No. of Student in Kindergarten	180 (6 classes of 30 students)
No. of Teacher in Kindergarten	23 (Pupil-Teacher Ratio is 8:1 under Key Statistics on Kindergarten Education)
Neighbourhood Elderly Centre Population	137.5 (4m^2/person) (with GFA of 550 m^2)

6. ESTIMATION OF SEWAGE FLOW

6.1. The estimation of sewage flow of the proposed development is shown in **Appendix C** and summarized in **Table 3** below.

Table 3 - Total Estimated Sewage Flow from the Proposed Development

Population Type	No. of Population	Unit Flow Factor (m^3/d/person)	Average Dry Weather Flow (m^3/d)
Residential Population	3,519	0.27	950.13
Staff of Clubhouse	53	0.28	14.84
Staff of Restaurant	15	1.58	23.70
Students in Kindergarten	180	0.04	7.20
Teachers in Kindergarten	23	0.28	6.44
Neighbourhood Elderly Centre Population	138	0.28	38.64
Outdoor Swimming Pool	-	-	7.03
Indoor Swimming Pool	-	-	8.44
Total	3,928	-	**1056.42**

6.2. The estimated Average Dry Weather Flow (ADWF) from the proposed development is approximately 1,056.42m^3/day.

7. PROPOSED SEWERAGE SYSTEM

7.1. The sewage from the proposed development will be collected by the proposed gravity sewers within the Site and then conveyed to the proposed on-site sewage pumping station with the installed capacity not less the peak flow (3,180m3/day). The sewage will then be pumped by a twin DN150 rising mains to the public gravity sewer and eventually be conveyed to NSWSPS.

7.2. Under normal circumstances, the sewage from the proposed rezoning development will be directed into NSWSPS via a proposed sewer line (PSL), which runs along the east of Kam Pok Road and Pok Wai Road South, ending at the existing manhole FSH1001886 that connects to NSWSPS, as depicted in Figure 2 in **Appendix D**.

7.3. There are five nearby up-zoning application nos. (Y/YL-NSW/7, Y/YL-MP/7, Y/YL-MP/8, Y/YL-MP/9 and Y/YL-MP/10) and a potential site development at Yau Mei San Tsuen. All six proposed developments are expected to be completed and populated by 2031 (Y/YL-NSW/7 is expected to be completed by 2028), coinciding with the timeline of this rezoning application.

7.4. To manage the cumulative impacts, there are two scenarios:

Scenario 1 – If the six proposed developments under application nos. (Y/YL-NSW/7, Y/YL-MP/7, Y/YL-MP/8, Y/YL-MP/9 and Y/YL-MP/10) and the potential site development at Yau Mei San Tsuen not yet implemented – The Applicant will be responsible for the entire section of the PSL, accounting for these six potential developments, subject to agreement with the approval authority. Figure 3 in **Appendix D** illustrates the schematic alignment and preliminary technical details of the PSL.

Scenario 2 - If application nos. Y/YL-NSW/7 and Y/YL-MP/10 are completed as planned by 2028 and 2031 respectively, or before the commencement of the current subject rezoning application, the Applicant will liaise directly with the developer involved to arrange the sharing of PSL works. This applies to the other two rezoning applications and one potential development mentioned above. The timing for the full implementation of the PSL will be determined, subject to agreement from the approval authority. Each developer will be responsible for completing any remaining sections of the PSL, as shown in Figure 4 including application nos. Y/YL-NSW/7 and Y/YL-MP/10 in **Appendix D**. The sewage will be pumped from NSWSPS to YLEPP eventually.

7.5. The hydraulic checking of the proposed rising mains is shown in **Appendix E**.

8. SEWERAGE IMPACT ASSESSMENT

8.1. The sewerage impact on NSWSPS and the public gravity sewers due to the sewage flow generated by the proposed development within the Site has been assessed.

8.2. The results of the sewerage assessment on NSWSPS are summarized in **Table 4**. **Table 5-6** summarizes the implications of the public gravity sewers in the two scenarios. The hydraulic calculations for the planned public gravity sewers are shown in **Appendix F**.

Table 4 – Assessment Results of NSWSPS

Sewerage Facility	Design Capacity (m^3/day)	Current Average Daily Flow (m^3/day)	Estimated Future Average Daily Flow (m^3/day)(1)	Total Future Average Daily Flow (m^3/day)	Spare Capacity (m^3/day)
NSWSPS	42,921	3,900	18,585.35	22,485.35	20,435.65

(1) The estimated future flow includes the EPD initial estimation for the public gravity sewers (i.e. 15,500m^3/d), the estimated sewage flow from light public housing based on the Project Profile of Yau Pok Road Light Public Housing, Yuen Long (i.e. 1,066.65m^3/d) and the potential development at Yau Mei San Tsuen (i.e. 962.28m^3/d) (Appendix C refers) and the sewage flow generated from this proposed development.

Table 5 – Assessment Results of the Public Gravity Sewers (Scenario 1)

Nominal Diameter (mm)	Average Daily Flow (m^3/day)	Average Daily Flow (m^3/s)	Peaking Factor	Peak Daily Flow (m^3/s)	Gradient (1in X)	Flow Velocity (m/s)	Flow Capacity (m^3/s)
Communal Gravity Sewers under this planning application							
1050	18,585.35	0.215	3.87	0.832	400	1.550	1.361

Table 6 – Assessment Results of the Public Gravity Sewers (Scenario 2)

	Nominal Diameter (mm)	Average Daily Flow (m^3/day) (1)	Average Daily Flow (m^3/s)	Peaking Factor	Peak Daily Flow (m^3/s)	Gradient (1in X)	Flow Velocity (m/s)	Flow Capacity (m^3/s)
Communal Gravity Sewers under Y/YL-MP/10								
Existing Design	2 x 675	18,585.35	0.215	3.87	0.832	400	1.167	0.835
Proposed Upgrade	2 x 800	18,585.35	0.215	3.87	0.832	400	1.199	0.933
Communal Gravity Sewers under Y/YL-NSW/7								
Existing Design	600	15,500	0.179	3.98	0.713	300	1.283	0.393
Proposed Upgrade	900	18,585.35	0.215	3.87	0.832	300	1.595	0.970

(1) The estimated future flow includes the EPD initial estimation for the public gravity sewers (i.e. 15,500m^3/d), the estimated sewage flow from light public housing based on the Project Profile of Yau Pok Road Light Public Housing, Yuen Long (i.e. 1,066.65m^3/d) and the potential development at Yau Mei San Tsuen (i.e. 962.28m^3/d) (Appendix C refers) and the sewage flow generated from this proposed development.

8.3. For scenario 1, the proposed DN1000 sewer has sufficient capacity to cater the sewage flow generated from the proposed development within the Site and the potential new developments.

8.4. For scenario 2, the results of the assessment have demonstrated that NSWSPS and the proposed public gravity sewers (2 x DN675) under application no. Y/YL-MP/10 almost use up the capacity to cater the sewage flow generated from the proposed development within the Site. It is suggested to upgrade the sewer to 2 x DN800. Besides, it is found that the existing design of the planned public gravity sewers under application no. Y/YL-NSW/7 in scenario 1, i.e. DN600, has

insufficient capacity to cater its planned ADWF of 18,585.35m^3/day. It is suggested to upgrade the sewer size to DN900. The abovementioned upgrade will allow sufficient capacity to cater the planned sewage flow and the sewage flow generated by the proposed development within the Site.

8.5. After upgrade the planned public gravity sewers, there will be no adverse sewerage impact on the planned public gravity sewers, NSWSWS and YLEPP due to this proposed development is anticipated.

9. MAINTENANCE RESPONSIBILITY

9.1. All proposed sewers and sewerage facilities within the proposed development will be constructed, operated and maintained by the Applicant.

9.2. The proposed external twin DN150 rising mains will be constructed and maintained by the Applicant.

9.3. For the public gravity sewers, both scenario 1 and scenario 2 are technically feasible. The long-term maintenance of either option will be handed back to relevant government department.

10. CONCLUSION

10.1. This report has assessed the sewerage impact due to the proposed development of Lot No. 4822 in D.D. 104 and adjoining Government Land, Kam Pok Road, Mai Po, Yuen Long.

10.2. The sewage flow generated from the proposed development will be collected by proposed gravity sewers within the Site and then conveyed into the proposed sewer line via an on-site underground sewage pumping station. The sewage flow will continue to be conveyed by public gravity sewers in one of the two scenarios: scenario 1: DN1050 sewer and scenario 2: 2 x DN800 sewer and DN600 sewer (recommended to be upgraded to sewer DN900).

10.3. The results of the assessment have demonstrated that both proposed scenario options are technically feasible from the sewerage engineering standpoint.

APPENDIX A –

SITE LOCATION AND PROPOSED MASTER LAYOUT PLAN

PLOTTED BY : $USER$

823200 E
823400 E
823600 E
823800 E
837500 N
837300 N
837100 N

FAIRVIEW PARK
YAU POK ROAD LIGHT PUBLIC HOUSING
CHUK YUEN TSUEN
KAM POK ROAD
FUNG CHUK ROAD
HA CHUK YUEN ROAD
SAN TIN HIGHWAY
YAU POK ROAD
NGAU TAM MEI CHANNEL
HA SAN WAI ROAD
HELENE TERRACE
VILLA CAMELLIA
HA SAN WAI

T6
T5
T3
T2
T1
TX ROOM & MAIN SWITCH ROOM
SEWAGE PUMPING STATION
OUTDOOR SWIMMING POOL
KINDERGARTEN & NEIGHBOURHOOD ELDERLY CENTRE
CLUBHOUSE

LEGENDS:

APPLICATION SITE

PLOT DRV : $PLTDRVL$

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LOT 4822 IN D.D. 104, KAM POK ROAD AND ADJOINING GOVERNMENT LAND, MAI PO, YUEN LONG

LOCATION PLAN AND PROPOSED MASTER LAYOUT PLAN

FIGURE 1

Scale 1 : 1250(A1)

CAD FILE : $FILE$

PLOT DATE & TIME : $DATE$ $TIME$

APPENDIX B –

ESTIMATION OF SEWERAGE FLOW FOR YAU POK ROAD LIGHT PUBLIC HOUSING

Project	:	Lot 4822 in D.D. 104 and Adjoining Government Land, Kam Pok Road, Mai Po, Yuen Long
Project No.	:	91469
Prepared by	:	HSC
Date	:	11/12/2025

Checked by : CYM
Sheet No. : 1

Estimation of Sewage Flow from the Light Public Housing

Residential Population

Residential Population (person)	=	5,500.00	
Unit Flow Factor (m^3/d/head)	=	0.19	Domestic - Public rental
ADWF (m^3/day)	=	1,045.00	
ADWF (l/s)	=	12.09	

Community Facilities

Total Gross Floor Area (GFA) (m^2)	=	537.50	Assumed 50% of Non-Domestic GFA
Assumed Worker Density (workers per 100m^2 GFA)	=	3.30	Table 8 of CIFSUS - All Types - Community, Social & Personal Services
No. of Staff	=	17.74	
Unit Flow Factor (m^3/d/head)	=	0.28	Commercial - J11
ADWF (m^3/day)	=	4.97	
ADWF (l/s)	=	0.06	

Retail

Total Gross Floor Area (GFA) (m^2)	=	376.25	Assumed 35% of Non-Domestic GFA
Assumed Worker Density (workers per 100m^2 GFA)	=	3.50	Table 8 of CIFSUS - All Types - Retail Trade
No. of Staff	=	13.17	
Unit Flow Factor (m^3/d/head)	=	0.28	Commercial - J4
ADWF (m^3/day)	=	3.69	
ADWF (l/s)	=	0.04	

Resturant

Total Gross Floor Area (GFA) (m^2)	=	161.25	Assumed 15% of Non-Domestic GFA
Assumed Worker Density (workers per 100m^2 GFA)	=	5.10	Table 8 of CIFSUS - All Types - Restaurants
No. of Staff	=	8.22	
Unit Flow Factor (m^3/d/head)	=	1.58	Resturants & Hotels - J10
ADWF (m^3/day)	=	12.99	
ADWF (l/s)	=	0.15	

Total ADWF (m^3/day)	**=**	**1,066.65**
ADWF (l/s)	**=**	**12.35**

Project	:	Lot 4822 in D.D. 104 and Adjoining Government Land, Kam Pok Road, Mai Po, Yuen Long
Project No.	:	91469
Prepared by	:	HSC
Date	:	11/12/2025

Checked by : CYM
Sheet No. : 2

Estimation of Sewage Flow from the Proposed Development at Yau Mei San Tsuen

Residential Population

Residential Population (person)	=	3,564.00	
Unit Flow Factor (m^3/d/head)	=	0.27	Domestic - Private R2
ADWF (m^3/day)	=	962.28	
ADWF (l/s)	=	11.14	

Total ADWF (m^3/day)	**=**	**962.28**
ADWF (l/s)	**=**	**11.14**

APPENDIX C –

ESTIMATION OF SEWERAGE FLOW FOR THE PROPOSED DEVELOPMENT

Project	:	Lot 4822 in D.D. 104 and Adjoining Government Land, Kam Pok Road, Mai Po, Yuen Long
Project No.	:	91469
Prepared by	:	HSC
Date	:	11/12/2025

Checked by : CYM
Sheet No. : 1

Estimation of Sewage Flow from the Proposed Development

Residential

No. of Units	=	1303	
Average Household size per unit	=	2.7	
Residential Population (person)	=	3519	
Unit Flow Factor (m^3/d/head)	=	0.27	Domestic - Private R2
ADWF (m^3/day)	=	950.13	
ADWF (l/s)	=	11.00	

Club House

No. of Storeys	=	2	
Gross Floor Area per storey	=	1136	
Total Gross Floor Area (GFA) (m^2)	=	2272	
Assumed Worker Density (workers per 100m^2 GFA)	=	2.3	Table 8 of CIFSUS - Private Commercials - Community, Social & Personal Services
No. of Staff	=	53	
Unit Flow Factor (m^3/d/head)	=	0.28	Commercial - J11
ADWF (m^3/day)	=	14.84	
ADWF (l/s)	=	0.17	

Restaurant

No. of Staff	=	15	
Unit Flow Factor (m^3/d/head)	=	1.58	Commercial - J10
ADWF (m^3/day)	=	23.70	
ADWF (l/s)	=	0.27	

Kindergarten

Nos. of Students	=	180	Assume 6 classes and 30 students in a class
Nos. of Teacher	=	23	Pupil-Teacher Ratio is around 8:1 under Key Statistics on Kindergarden Education
Unit Flow Factor - Student (m^3/d/head)	=	0.04	
Unit Flow Factor - Teacher (m^3/d/head)	=	0.28	Commercial - J11
ADWF (m^3/day)	=	13.64	
ADWF (l/s)	=	0.16	

Neighbourhood Elderly Centre

Population	=	138	
Unit Flow Factor - Elderly / Staff (m^3/d/head)	=	0.28	Commercial - J11
ADWF (m^3/day)	=	38.64	
ADWF (l/s)	=	0.45	

Project : Lot 4822 in D.D. 104 and Adjoining Government Land, Kam Pok Road, Mai Po, Yuen Long
Project No. : 91469
Prepared by : HSC
Date : 11/12/2025

Checked by : CYM
Sheet No. : 1

Outdoor Swinning Pool

Swimming Pool Volume (m^3) (25m x 15m x 1.5m)	=	562.5
Turnover rate (hours)	=	6
Assumed Surface Loading Rate of Filter ($m^3/m^2/hr$)	=	20
Filter Area Required (m^2)	=	4.69
Duration of Backwash (min/day)	=	3.00
Assumed Backwash Flowrate ($m^3/m^2/hr$)	=	30.00
Volume of Backwash (m^3/day)	=	7.03
Assumed Discharge Duration (min)	=	3
Discharge Flow Rate (m^3/min)	=	2.34
Discharge Flow Rate (m^3/s)	=	0.04

B1.1.2 Outdoor Swimming Pool Turnver Rate - General Specification for Swimming Pool Water Treatment Installation

Indoor Swinning Pool

Swimming Pool Volume (m^3) (20m x 15m x 1.5m)	=	450
Turnover rate (hours)	=	4
Assumed Surface Loading Rate of Filter ($m^3/m^2/hr$)	=	20
Filter Area Required (m^2)	=	5.63
Duration of Backwash (min/day)	=	3.00
Assumed Backwash Flowrate ($m^3/m^2/hr$)	=	30.00
Volume of Backwash (m^3/day)	=	8.44
Assumed Discharge Duration (min)	=	3
Discharge Flow Rate (m^3/min)	=	2.81
Discharge Flow Rate (m^3/s)	=	0.05

B1.1.2 Indoor Swimming Pool Turnver Rate - General Specification for Swimming Pool Water Treatment Installation

Total ADWF (m^3/day)	**=**	**1056.42**
ADWF (l/s)	**=**	**12.23**

APPENDIX D –

LAYOUT PLAN FOR PROPOSED PRIVATE SEWAGE PUMPING STATION AND RISING MAINS

PLOTTED BY : $USER$

FAIRVIEW PARK

YAU POK ROAD
LIGHT PUBLIC HOUSING

KAM POK ROAD

CHUK YUEN TSUEN

PROPOSED SEWAGE
PUMPING STATION

HA SAN WAI

YAU POK ROAD

KAM POK ROAD

SAN TIN HIGHWAY

PROPOSED SEWER LINE

NGAU TAM MEI CHANNEL

KAM POK ROAD EAST

POK WAI SOUTH ROAD

KAM TIN RIVER

POK WAI WEST ROAD

NAM SANG WAI
SEWAGE PUMPING STATION
(NSWSPS)

EXISTING MANHOLE FSH1001886
CONNECTING TO NSWSPS

FSH1001886 (MODIFIED TO BACKDROP MANHOLE)
C.L.: +5.35
I.L.: -2.88(INLET)
I.L.: -4.40(OUTLET)

LEGENDS:

APPLICATION SITE

PROPOSED SEWER LINE

EXISTING MANHOLE

PLOT DRV : $PLTDRVL$

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LOT 4822 IN D.D. 104, KAM POK ROAD AND ADJOINING GOVERNMENT LAND, MAI PO, YUEN LONG

PROPOSED SEWERAGE ALIGNMENT

FIGURE 2

Scale 1 : 3000(A1)

CAD FILE : $FILE$

PLOT DATE & TIME : $DATE$ $TIME$

PLOTTED BY : $USER$

837500 N
837000 N
836500 N
822000 E
822500 E
823000 E
823500 E
824000 E

FAIRVIEW PARK

YAU POK ROAD
LIGHT PUBLIC HOUSING

KAM POK ROAD

CHUK YUEN TSUEN

PROPOSED SEWAGE
PUMPING STATION

HA SAN WAI

YAU POK ROAD

KAM POK ROAD

2x150ø RM

PROPOSED TWIN RISING MAINS
CONSTRUCTED AND MAINTAINED
BY THE APPLICANT

SAN TIN HIGHWAY

NGAU TAM MEI CHANNEL

PROPOSED CONVERSION CHAMBER
CONSTRUCTED BY THE APPLICANT
AND MAINTAINED BY THE GOVERMENT DEPARTMENT

CONVERSION CHAMBER
C.L.: +4.50
I.L.: -1.085

KAM POK ROAD EAST

1050ø

POK WAI SOUTH ROAD

PROPOSED COMMUNAL GRAVITY SEWERS
CONSTRUCTED BY THE APPLICANT
AND MAINTAINED BY THE GOVERMENT
DEPARTMENT

KAM TIN RIVER

WKT009
C.L.: +4.20
I.L.: -2.095

PROPOSED MANHOLE
CONSTRUCTED BY THE APPLICANT
AND MAINTAINED BY THE GOVERMENT DEPARTMENT

1050ø

POK WAI WEST ROAD

NAM SANG WAI
SEWAGE PUMPING STATION
(NSWSPS)

EXISTING MANHOLE FSH1001886
CONNECTING TO NSWSPS

FSH1001886 (MODIFIED TO BACKDROP MANHOLE)
C.L.: +5.35
I.L.: -2.88(INLET)
I.L.: -4.40(OUTLET)

LEGENDS:

- APPLICATION SITE
- 2x150ø RM — PROPOSED RISING MAINS
- 1050ø — PROPOSED COMMUNAL GRAVITY SEWERS
- CONVERSION CHAMBER
- PROPOSED MANHOLE
- EXISTING MANHOLE

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LOT 4822 IN D.D. 104, KAM POK ROAD AND ADJOINING GOVERNMENT LAND, MAI PO, YUEN LONG

PROPOSED SEWERAGE SYSTEM LAYOUT PLAN (SCENARIO 1)

FIGURE 3

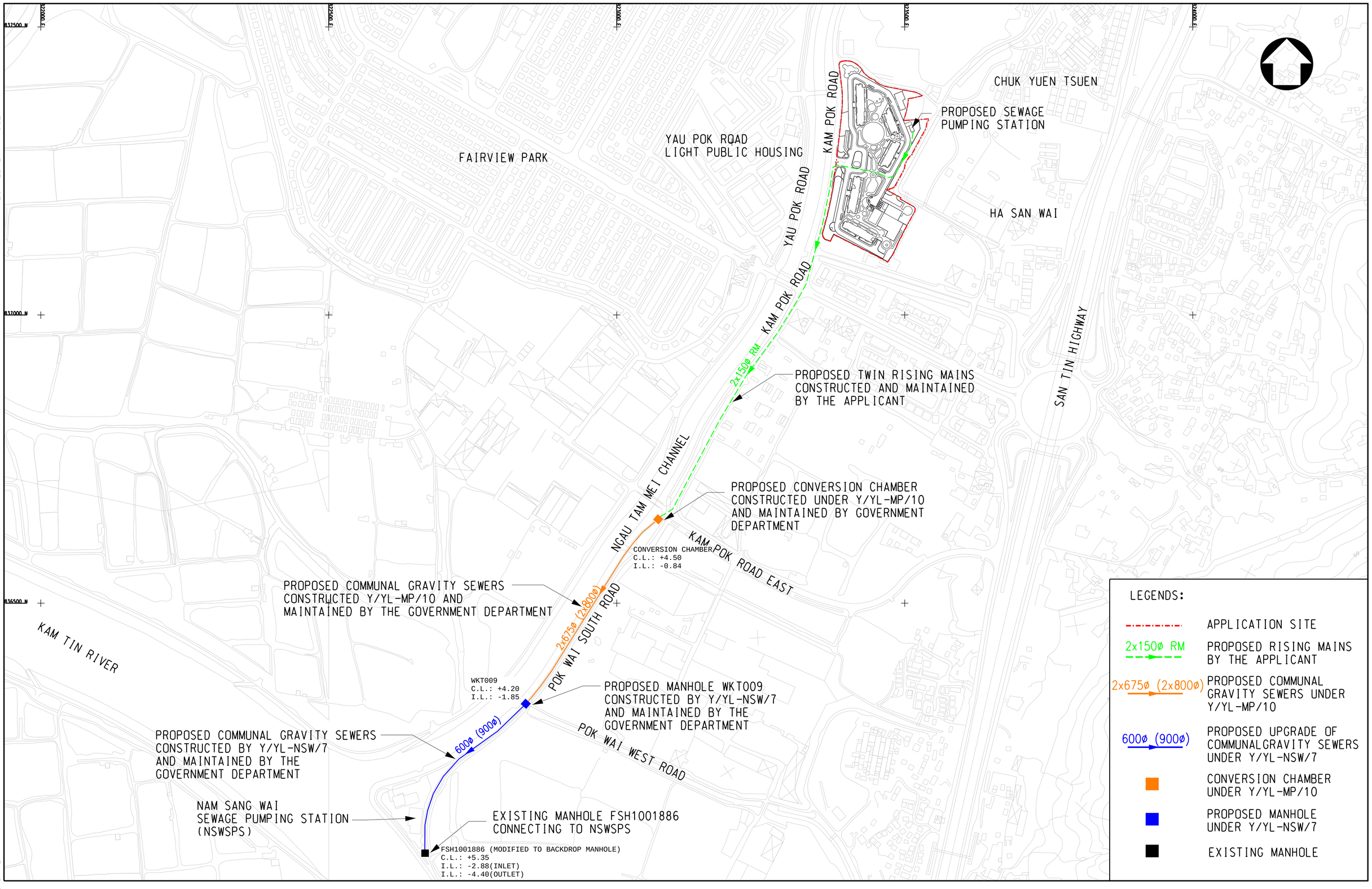
Scale 1 : 3000(A1)

PLOT DRV : $PLTDRVL$

CAD FILE : $FILE$

PLOT DATE & TIME : $DATE$ $TIME$

PLOTTED BY : $USER$



PLOT DRV : $PLTDRVL$

Meinhardt Infrastructure and Environment Limited
邁進基建環保工程顧問有限公司

LOT 4822 IN D.D. 104, KAM POK ROAD AND ADJOINING GOVERNMENT LAND, MAI PO, YUEN LONG

PROPOSED SEWERAGE SYSTEM LAYOUT PLAN (SCENARIO 2)

FIGURE 4

Scale 1 : 3000(A1)

CAD FILE : $FILE$

PLOT DATE & TIME : $DATE$ $TIME$

APPENDIX E –

HYDRAULIC ASSESSMENT FOR RISING MAINS

Project	:	Lot 4822 in D.D. 104 and Adjoining Government Land, Kam Pok Road, Mai Po, Yuen Long
Project No.	:	91469
Prepared by	:	HSC
Date	:	11/12/2025

Checked by : CYM
Sheet No. : 1

Hydraulic Assessment of Proposed Pump Rate

Total ADWF (m^3/d)	=	1,056.42
Contributing Population	=	3,912.67
Peaking Factor	=	4.00
Total PDWF (m^3/d)	=	4,225.68
Total PDWF (l/s)	=	48.91
Design Pump Capacity (l/s)	=	50.00

Design of Proposed Twin Rising Mains

Diameter (mm)	=	140.40
Flow Area of one Rising Main (m^2)	=	0.02
Flow in one Rising Main (m^3/s)	=	0.03
Flow Velocity in one Rising Main (m/s)	=	1.61

APPENDIX F –

HYDRAULIC ASSESSMENT FOR COMMUNAL SEWERS

Hydraulic Checking for Communal Gravity Sewers (Scenario 1)			INITIAL	DATE	REV.
			HSC	11/12/2025	-
PROJECT :	**Lot 4822 in D.D. 104 and Adjoining Government Land, Kam Pok Road, Yuen Long**			Roughness Coefficient ks (mm)	1.5

Manholes		**Pipes Details**							**Pipe Capacity**		**Check for Capacity**						**Check for Self-cleansing Velocity**		
From	To	Internal Pipe Diameter (mm)	Upper Ground Level (mPD)	Lower Ground Level (mPD)	Upper Invert Level (mPD)	Lower Invert Level (mPD)	Existing Pipe (Y / N)	Minimum Hydraulic Gradient (1 in _)	Velocity (m/s)	Capacity (m3/s)	ADWF(m^3/s)	Contribution Population	Peaking Factor*	Peak Flow (m^3/s)	Ratio of the Peak flow to the Full Bore Capacity (%)	Pipe Capacity > Peak Flow?	Velocity in Full Pipe Condition (m/s)	Velocity >1 m/s?	**Remarks**
Conversion Chamber	NSWSPS	1057.1	4.50	4.20	NA	NA	N	400	1.550	1.361	0.215108	68834.63	3.87	0.832355	61.17%	YES	1.550	OK	

Notes

* Peaking factors taken including stormwater allowance

The contribution population, peaking factors are determined according to GESF published by EPD

Roughness Coefficient ks of 1.5mm is adopted in the assessment.

All proposed sewers will be HDPE pipe

Hydraulic Checking for Communal Gravity Sewers (Scenario 2)

INITIAL	DATE	REV.
HSC	11/12/2025	-

PROJECT : **Lot 4822 in D.D. 104 and Adjoining Government Land, Kam Pok Road, Yuen Long**

Roughness Coefficient ks (mm): 1.5

Manholes		Pipes Details							Pipe Capacity		Check for Capacity						Check for Self-cleansing Velocity		
From	To	Internal Pipe Diameter (mm)	Upper Ground Level (mPD)	Lower Ground Level (mPD)	Upper Invert Level (mPD)	Lower Invert Level (mPD)	Existing Pipe (Y / N)	Minimum Hydraulic Gradient (1 in _)	Velocity (m/s)	Capacity (m3/s)	ADWF(m^3/s)	Contribution Population	Peaking Factor*	Peak Flow (m^3/s)	Ratio of the Peak flow to the Full Bore Capacity (%)	Pipe Capacity > Peak Flow?	Velocity in Full Pipe Condition (m/s)	Velocity >1 m/s?	Remarks
WKT009	WKT010	624.6	4.20	4.00	-1.85	-2.11	N	300	1.283	0.393	0.179398	57407.41	3.98	0.713338	181.42%	NO	1.283	OK	Existing Design
WKT009	WKT010	879.8	4.20	4.00	-1.85	-2.11	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	Proposed Upgrade
Conversion Chamber	WKT009	675	4.50	4.20	NA	NA	N	400	1.167	0.835	0.215108	68834.63	3.87	0.832355	99.65%	YES	1.167	OK	(2xDN675)
Conversion Chamber	WKT009	703.9	4.50	4.20	NA	NA	N	400	1.199	0.933	0.215108	68834.63	3.87	0.832355	89.22%	YES	1.199	OK	(2xDN800)
WKT009	WKT010	879.8	4.20	4.00	-1.85	-2.11	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	
WKT010	WKT011	879.8	4.00	4.15	-2.11	-2.38	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	
WKT011	WKT012	879.8	4.15	4.20	-2.38	-2.53	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	
WKT012	WKT013	879.8	4.20	4.15	-2.53	-2.65	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	
WKT013	WKT014	879.8	4.15	4.10	-2.65	-2.75	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	
WKT014	WKT015	879.8	4.10	4.05	-2.75	-2.83	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	
WKT015	FSH1001886	879.8	4.05	5.35	-2.83	-2.88	N	300	1.595	0.970	0.215108	68834.63	3.87	0.832355	85.82%	YES	1.595	OK	

Notes

* Peaking factors taken including stormwater allowance

The contribution population, peaking factors are determined according to GESF published by EPD

Roughness Coefficient ks of 1.5mm is adopted in the assessment.

All proposed sewers will be HDPE pipe