DASAR DAN PERMASALAHAN PEMETAAN UTILITI

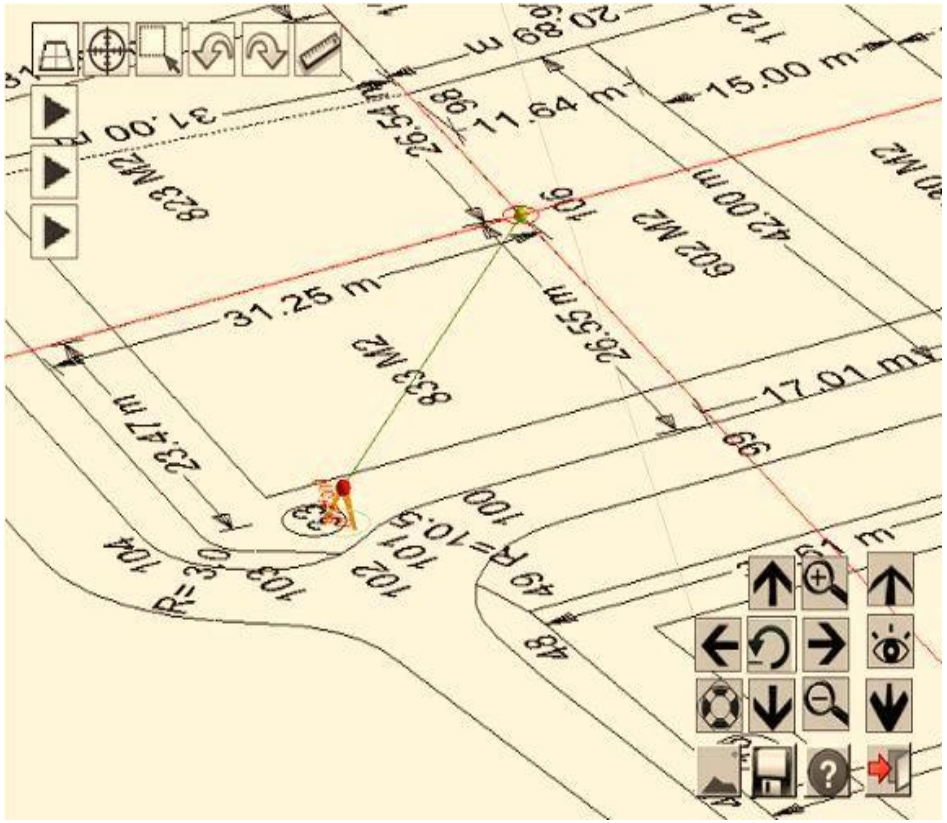
INSTUN,

Februari 2014

KANDUNGAN

- PENDAHULUAN
- DASAR KERAJAAN
- INIASITIF JUPEM
- ISU DAN PERMASALAHAN PEMETAAN UTILITI
- KESIMPULAN

PENDAHULUAN



APAKAH PEMETAAN UTILITI ?

- **Mengenalpasti kedudukan utiliti bawah tanah melalui koordinat, ofset**
- **Mengenalpasti jenis utiliti, ciri-ciri seperti jenis paip, muatan, arah aliran dsb**
- **Menyediakan peta/pelan bagi menunjukkan maklumat utiliti bawah tanah**

PENDAHULUAN

KENAPA BENCANA INI BERLAKU ?

4 PRIME NEWS NEW STRAITS TIMES THURSDAY, MAY 6, 2010

GUSHER IN KLANG

A burst water pipe sent water gushing up to a height of a four-storey building and caused a flash flood affecting about 100 houses in Klang yesterday. The burst pipe also affected supply to about 30,000 people in south Klang and supply had yet to be restored at press time. The incident happened in Taman Palm Grove early yesterday morning and the water rose to about half a metre. — NST picture by Nor Azizah Mokhtar

NST - 6 Mei 2010

Masalah kerosakan paip air bawah tanah telah mendatangkan bencana kepada penduduk Taman Palm Grove, Klang yang dipercayai berpunca dari kerja-kerja pembinaan yang dijalankan di kawasan tersebut.

PENDAHULUAN

KENAPA BENCANA INI BERLAKU ?

Catch-22 for contractors

Shoddy road work linked to low profit margin and high wages

By PRIYA MENON
priya@thestar.com.my

THE pothole problem in the Klang Valley in recent years is due to poor repair work after utility companies have dug up the roads.

Contractors are mainly blamed for the shoddy road work.

A contractor, who declined to be named, said many sub-contractors minimised expenses by buying low-grade materials to ensure they can make a little profit.

"Salary for workers is high these days and maintaining them can be quite difficult. They need to be paid RM100 a day excluding meals (breakfast, lunch, two tea breaks and dinner)," he added.

He has now reduced the number of workers and employs them on a freelance basis whenever he has a job.

To make ends meet, he is forced to rent out machinery to other companies.

According to him, most of the contractors receive a small sum, forcing them to work within their means.

If the premix or the top layer is not compacted enough, it is easy for water to seep in and damage the road.

–K GUNASEGARAN

He also said the government should step in and ensure all sub-contractors should be given 5% or 10% of the margin to ensure they did a good job.

"I no longer take jobs that pay very little and I do not want to tarnish the name of my company. I want to do good job that keeps me satisfied," he added.

Petaling Jaya City Council's (MBPJ) Engineering Department director Cheremi Tarman said their major concern was the utility companies which dug up the roads to do underground wiring work.

Cheremi said Tenaga Nasional Berhad (TNB) and Syarikat Bekalan Air Selangor Sdn Bhd (Syabas) were sometimes forced to conduct immediate work during breakdowns.

"We have asked them to use the micro-trenching technique that requires them to dig only one inch of the road as opposed to the old method where they would have to dig an entire lane," he added.

To ensure they do a good job at resurfacing the road, the companies are forced to do the mill-and-pave technique which requires contractors to cut off one or two inches of the road.

After that, a MBPJ team will be sent out to inspect the job done by the contractors.

Institution of Engineers Malaysia (Highway and the Transportation Engineering Technical Division) chairman K. Gunasegaran said Malaysia used the British Code Standards

Gunasegaran said the methodology used by the contractors were not proper simply because they wanted to get it over and done with.

"When water seeps through, the bitumen bonding weakens and cracks up easily.

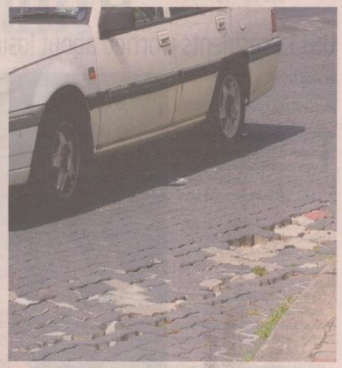
"Some contractors also take compacting for granted. If the premix or the top layer is not compacted enough, it is easy for water to seep in and damage the road," he said.

He added that if the work was not done according to specifications, taxpayers money would be wasted in the long run.

Gunasegaran suggested that local councils should look into the tenders given out and appoint a consultant to oversee the work.

The consultant should be held responsible and conduct proper checks which in turn would weed out errant contractors.

Bumpy ride: The terrible road condition near Jalan 21/17 in Seapark.



Bad job: Badly-paved roads are a common sight in PJ.

Potholes pose danger to road users daily

What a waste: A mound of tar is left along Jalan 17/1 although road repairs were completed more than two months ago.

IT WAS 8pm and reporter Saravanan Paramasivam was riding home after a function near Ara Damansara when he stopped at a traffic light.

Like all other motorcyclists, Saravanan placed his foot down to steady the motorcycle only to find himself falling with the machine.

Saravanan had put his leg into a pothole that was filled with water after a downpour just minutes earlier.

"The pothole was filled with water. Nobody came to my aid at that time until another motorcyclist saw me struggling," he said.

In Petaling Jaya, Section 17, SS2, Jalan Gasing, Section 16, Jalan Pantai 9/7, Section 19 and Seapark are riddled with potholes several centimetres deep.

To make matters worse, there are cement blotches on roads forcing drivers to slow down to avoid damage to their cars.

"It is irritating to drive along a road and hit a number of potholes because you cannot avoid them. No matter how you try to avoid the potholes you are bound to drive into one," said resident Hashim Hamid, 45.

Another resident Iskandar Abdullah said the potholes had damaged his vehicle's shock absorbers and suspension.

He said drivers were forced to pay for the damage although the fault was not theirs.

"No one likes a bumpy ride to work or back home," he added.

Kelana Jaya resident Vasugi Supramaniam said the potholes could cause accidents when motorists tried to avoid them.

"It is dangerous for motorcyclists at night especially if the lighting is poor," she added.

PJ resident Susan Chong, 51, said debris removed drains could also be found at the side of the roads.

One of the areas with a large mound of tar is along Jalan 17/1 and it has been left there after road repairs more than two months ago.

"We cannot just blame the contractors for this problem. Local councils have to step up and monitor the contractors to ensure everything is done properly," she said.

Chong also said it was not fair to use ratepayers' money to repair roads all the time as it should be a one-off job.

STAR - 19 Jun 2012

Tiada koordinasi antara pembekal utiliti memungkinkan menjadi penyebab kepada kemalangan

PENDAHULUAN

KENAPA BENCANA INI BERLAKU ?

2 NEWS StarMetro, THURSDAY 13 DECEMBER 2012

STAR Metro Info Base

EMERGENCY	
POLICE & AMBULANCE	999
FIRE BRIGADE	994
TENAGA BREAKDOWN	15454
TELEKOM FAULT & REPAIR	100 OR 1 300 888 123 (FROM MOBILE PHONE)
AMBULANCE - ST. JOHN	03-9285 5294
AMBULANCE-RED CRESCENT	03-4257 8122
UTILITY COMPANIES	
ALAM FLORA	1800-88-7472
INDAH WATER	1800-88-3495
IBA SELANGOR	03-2282 6244
POS MALAYSIA	03-2274 1122
TENAGA NASIONAL	03-2282 5566
SYABAS	1800-88-5252
LOCAL AUTHORITIES	
DBKL	1800-88-3255
MPAJ	03-4296 8000
MPK	03-3371 6044
MBPJ	03-7956 3544
MBSA	03-5510 5133
MPSJ	03-8026 3131
POLICE STATIONS	
PETALING JAYA HQ	03-7966 2222
BUKIT AMAN HQ	03-2266 2222
DAMANSARA UTAMA	03-7722 2222
SEA PARK	03-7875 1382
SELANGOR POLICE HQ	03-5514 5222
SHAH ALAM	03-5520 2222
SG BULOH	03-6156 1222
KOTA DAMANSARA	03-6140 4538
TAMAN TUN DR ISMAIL	03-7728 6222
SG WAY	03-7875 2222
AMPANG	03-4289 7222
BRICKFIELDS	03-9051 6222
CHERAS	03-9145 2222
DANG WANGI	03-2600 2222
FIRE BRIGADE	
FIRE & RESCUE HEADOFFICE	1-800-888-994
FIRE BRIGADE DAMANSARA PJ	03-77294444
FIRE BRIGADE TAMANTUN	03-77284444
HIGHWAY BREAKDOWN	

Unsavoury leaks

Clogged drain channels causes water to seep through restaurant walls

THE clogged drain channels in Jalan Raja Laut, Kuala Lumpur are choked with sediment that water started overflowing and leaking into a restaurant.

The restaurant located at the intersection of Jalan Raja Laut and Lorong Tiong Nam 5 has been riddled with the problem for three months.

Restaurant owner Foon Kai Yew said it had worsened in recent weeks due to heavy rainfall.

"We started getting foul-smelling water leaking into the dining area. We found that it was leaking from the drains, which are located higher than our dining area, as this building is built on a gradient," said Foon.

At first, Foon attempted to solve the problem by patching the wet spots with cement, but it failed to contain the leak.

He contacted Bukit Bintang BN parliamentary secretary Frankie Gan, who in turn contacted Alam Flora to help resolve the problem.

A site visit by Alam Flora operations head for Bukit Bintang area Abdul Hamid Kathan, revealed that the drains surrounding the shop-lots in Jalan Raja Laut were filled with sediment, obstructing water flow.

Alam Flora will start clearing the sediment from the drains. They will also be using a machine to suck out the excess sand.

–FRANKIE GAN

"Abdul Hamid informed me that one reason for the build-up of sediment in the channels is due to the heavy drain covers, which causes the concrete support to crack," said Gan.

In addition, there was a gap between the drains and the dining room's wall, which allowed water overflowing from the drains to pool and leak through the wall.

"Alam Flora will start clearing the sediment from the drains. They will also be using a machine to suck out the excess sand.

"Once that is done, we will observe if the problem recurs.

"If there it does, we will call in the Public Engineering and Drainage Department from Kuala Lumpur City Hall to help," Gan said.

Wet mess: (from left) An Alam Flora employee, Gan, Foon and Abdul Hamid inspecting one of the drain opening channels as water overflowed into the restaurant.

NST - 13 Disember 2012

Serapan air ke dinding restoran dipercayai berpunca dari kebocoran paip air bawah tanah serta longkang yang tersumbat.

*Keadaan jalan yang **rosak teruk** di FELDA gugusan Palong, Bandar Seri Jempol perlu dibaiki segera.* [FOTO ABNOR HAMIZAM ABD MANAP/ BH]

SAINS atasi masalah air

SEKITAR FELDA

» *Baiki paip rosak, tambah pam penggalak*

Oleh Abnor Hamizam Abd Manap
bhnews@bharian.com.my

Bandar Seri Jempol

Masalah gangguan bekalan air yang sering melanda kawasan FELDA Gugusan Palong, dijangka selesai menjelang 2015.

tiada lagi aduan diterima berhubung gangguan bekalan air, di sini. Pada masa sama, penduduk perlu bersabar sementara kerja penggantian paip lama dan menaik taraf kemudahan sedia ada dijalankan," katanya.

Perbaiki jalan raya

Selain itu, katanya keseluruhan jalan raya Gugusan FELDA Palong sepanjang 40 kilometer bermula dari simpang masuk FELDA Palong 16 hingga

*"Penduduk perlu bersabar sementara kerja penggantian paip lama dan **menaik taraf kemudahan** sedia ada dijalankan"*

kita baiki secara menyeluruh jalan terbabit sekarang kerana kenderaan berat, yang mengangkut kayu getah akan merosakkan semula jalan," katanya.

Sementara itu, mengulas cadangan penduduk supaya balai polis dibuka di Gugusan Palong, Aziz berkata, perkara itu pernah dibangkitkan pada sidang Dewan Undangan Negeri (DUN).

Katanya, Menteri Besar Negeri Sembilan, Datuk

BH - 19 Disember 2012

Keadaan jalan yang berlubang dipercayai berpunca dari kebocoran paip air bawah tanah boleh mengakibat kemalangan dan kesesakan jalan raya.

PENDAHULUAN

KENAPA BENCANA INI BERLAKU ?

Telegraph online news - 7 Jun 2010

Letupan paip gas bawah tanah di Texas membunuh 3 pekerja dan 10 lagi hilang. Pihak berkuasa mempercayai letupan berpunca dari kerja-kerja pengorekkan yang dijalankan di kawasan tersebut.

IMPLIKASI

- Kos kepada nyawa
- Kos kerugian kepada industri
- Kos kerugian kepada penyedia utiliti
- Kos pembaikan
- Kos ganti rugi
- Kos insuran
- Kos kerugian kepada Negara – reputasi terjejas

APA YANG BOLEH DIPELAJARI

- Perlu peta utiliti yang lengkap dan tepat
- Peta utiliti perlu diselenggara dan dikemaskini
- Kemudahan mendapatkan maklumat dan peta
- Tenaga kerja yang kompeten
- Perundangan, peraturan dan garis panduan

DASAR KERAJAAN

Jemaah Menteri 24 Ogos 1994

Masalah Kerja-Kerja Pengalihan Kemudahan Awam Dalam Rizab Jalan JKR / PBT Semasa Melaksanakan Projek Menaik Taraf atau Membesarkan Jalan Sedia Ada

(kerosakan saluran utiliti bawah tanah dan gangguan perkhidmatan akibat daripada kerja pengorekan dilakukan **tanpa maklumat lokasi utiliti yang mencukupi dan tepat**)

Keputusan:

1. supaya semua agensi kemudahan awam yang berkenaan **menyediakan peta tempat letak dan susun atur struktur** kemudahan awam yang dipasang di bawah tanah

2. Jabatan Ukur dan Pemetaan **menyimpan dan menyelenggara peta-peta** yang berkaitan di samping agensi-agensi kemudahan awam itu sendiri.

DASAR KERAJAAN

Jemaah Menteri 14 Januari 1998

Gangguan Kemudahan Awam Akibat Kecuaian Kontraktor Dalam Kerja-kerja Mengorek Yang Menyebabkan Kerosakan Kepada Saluran Utiliti Bawah Tanah

(Akibat dari **ketiadaan pelan utiliti yang mengandungi maklumat yang tepat dan jelas**)

Keputusan:

1. Pihak utiliti dikehendaki **mengemaskini semua database** untuk membolehkan pihak kontraktor dan pemaju memperolehi dan mengedar maklumat yang tepat sebelum pemasangan paip dan kabel dijalankan.
2. Semua pihak utiliti **memberikan kerjasama** kepada JUPEM bagi mengemaskini *digitized plan* dan seterusnya pelaksanaan GIS disegerakan bagi membolehkan penggunaannya di seluruh negara

INIASITIF JUPEM

- Mewujudkan Seksyen Pemetaan Utiliti (SPU)
- Membangunkan Pangkalan Data Utiliti Kebangsaan (PADU)
- Bagi maksud amalan dan penyeragaman :
  - Menerbitkan garis panduan mengenai ‘tatacara pengukuran, penyimpanan dan standard maklumat pemetaan utiliti bawah tanah’ (2006, 2007 dan 2013)
  - Membangun, menggunapakai dan mengemaskini ‘Standard Malaysia MS 1759, Geographic Information / Geomatics – Feature and Attributes Codes’ yang dikeluarkan oleh SIRIM
  - Menubuh dan menerajui Jawatankuasa Pemetaan Utiliti (JKPU) di bawah Jawatankuasa Pemetaan dan Data Spatial Negara (JPDSN)

INIASITIF JUPEM

Kandungan PADU

- Kabel Elektrik - Tenaga Nasional Bhd
- Kabel Telekomunikasi - Telekom Malaysia Bhd dan lain-lain
- Paip Air - Syarikat Bekalan Air Negeri
- Paip Gas - Gas Malaysia Sdn Bhd
- Saluran Pembentungan - Indah Water Konsortium Sdn Bhd

TENAGA NASIONAL BERHAD

TM

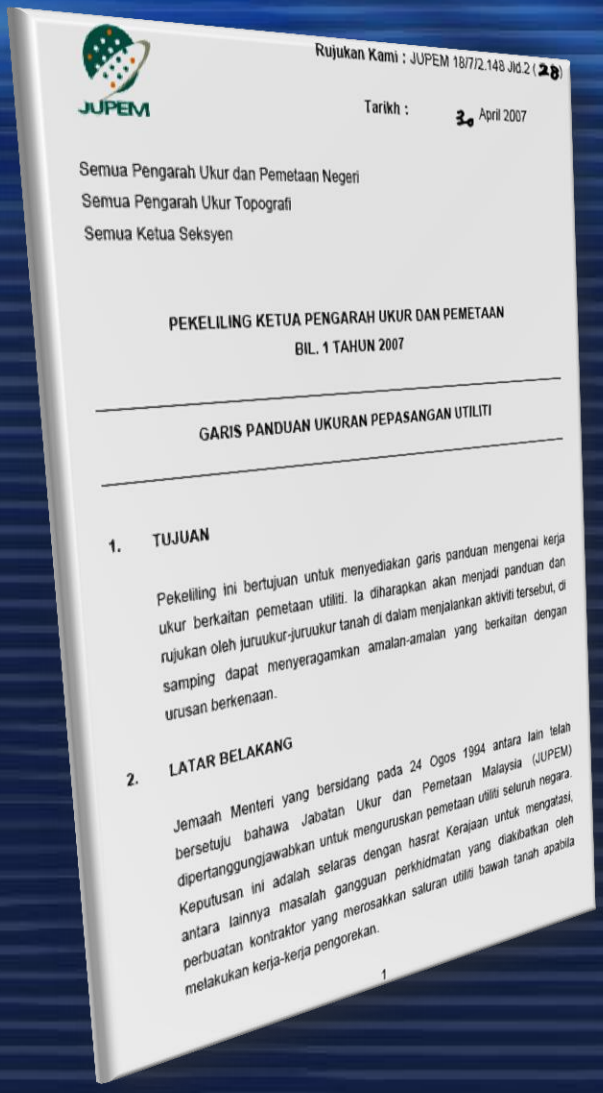
SYABAS
SYARIKAT BEKALAN AIR SELANGOR SDN. BHD.

sains

GAS MALAYSIA

IndahWater

INIASITIF JUPEM



JUPEM

Rujukan Kami : JUPEM 18/7/2.148 Jld.2 (28)

Tarikh : 30 April 2007

Semua Pengarah Ukur dan Pemetaan Negeri
Semua Pengarah Ukur Topografi
Semua Ketua Seksyen

PEKELILING KETUA PENGARAH UKUR DAN PEMETAAN
BIL. 1 TAHUN 2007

GARIS PANDUAN UKURAN PEPASANGAN UTILITI

1. TUJUAN

Pekeliling ini bertujuan untuk menyediakan garis panduan mengenai kerja ukur berkaitan pemetaan utiliti. Ia diharapkan akan menjadi panduan dan rujukan oleh juruukur-juruukur tanah di dalam menjalankan aktiviti tersebut, di samping dapat menyeragamkan amalan-amalan yang berkaitan dengan urusan berkenaan.

2. LATAR BELAKANG

Jemaah Menteri yang bersidang pada 24 Ogos 1994 antara lain telah bersetuju bahawa Jabatan Ukur dan Pemetaan Malaysia (JUPEM) dipertanggungjawabkan untuk menguruskan pemetaan utiliti seluruh negara. Keputusan ini adalah selaras dengan hasrat Kerajaan untuk mengatasi, antara lainnya masalah gangguan perkhidmatan yang diakibatkan oleh perbuatan kontraktor yang merosakkan saluran utiliti bawah tanah apabila melakukan kerja-kerja pengorekan.

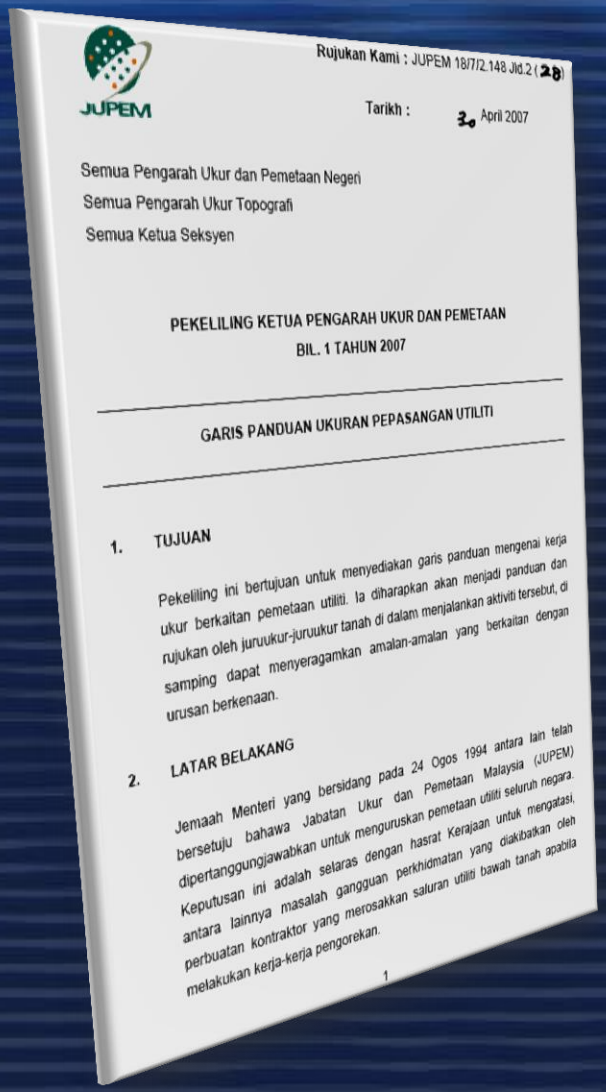
1

Garis Panduan Mengenai Pemetaan Utiliti Bawah Tanah (Pekeliling KPUP 1/2006)

Antara kandungan:

- peranan *stakeholders* (penyedia utiliti, jurukur tanah & JUPEM)
- tahap kualiti data (kualiti A, B, C dan D)
- kaedah perolehan data dan maklumat utiliti bawah tanah (menggunakan peralatan PCL dan GPR)
- serahan data dan maklumat
- penyenggaraan pangkalan data utiliti oleh JUPEM

INIASITIF JUPEM



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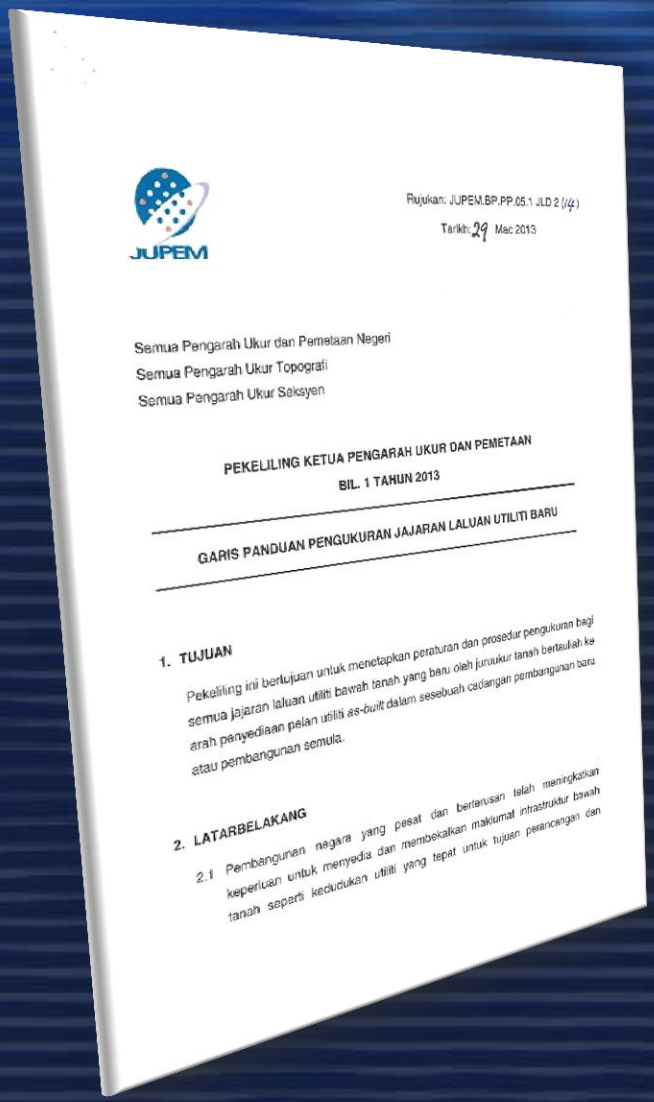
1

Garis Panduan Ukuran Pepasangan Utiliti Bawah Tanah (Pekeliling KPUP 1/2007)

Antara kandungan:

- Kaedah menjalankan ukuran pepasangan utiliti menggunakan *Pipe and Cable Locator* (PCL) dan *Ground Penetrating Radar* (GPR)
- Ukuran butiran topografi
- Ukuran pepasangan utiliti bawah tanah yang terdedah (exposed)
- Ukuran kawalan
- Kalibrasi alat
- Sistem rujukan ukuran
- Serahan

INIASITIF JUPEM



JUPEM

Rujukan: JUPEM.BP.PP.05.1 JLD 2 (4)
Tarikh: 29 Mac 2013

Semua Pengarah Ukur dan Pemetaan Negeri
Semua Pengarah Ukur Topografi
Semua Pengarah Ukur Seksyen

PEKELILING KETUA PENGARAH UKUR DAN PEMETAAN
BIL. 1 TAHUN 2013

GARIS PANDUAN PENGUKURAN JAJARAN LALUAN UTILITI BARU

1. TUJUAN

Pekeliling ini bertujuan untuk menetapkan peraturan dan prosedur pengukuran bagi semua jajaran laluan utiliti bawah tanah yang baru oleh jurukur tanah bertauliah ke arah penyediaan pelan utiliti *as-built* dalam sesebuah cadangan pembangunan baru atau pembangunan semula.

2. LATARBELAKANG

2.1 Pembangunan negara yang pesat dan berterusan telah meningkatkan keperluan untuk menyedia dan membekalkan maklumat infrastruktur bawah tanah seperti kedudukan utiliti yang tepat untuk tujuan perancangan dan

Garis Panduan Ukuran Jajaran Laluan Utiliti Semasa Pemasangan (Pekeliling KPUP 1 /2013)

Antara kandungan:

- Pengukuran semasa kerja pemasangan utiliti
- Ukuran kawalan
- Ukuran pepasangan utiliti yang dipasang melalui kaedah HDD
- Tanggungjawab Jurukur Tanah Bertauliah
- Serahan

INIASITIF JUPEM

Pembangunan ‘Standard Malaysia MS 1759’

Melibatkan :

- kaedah pengekodan butiran dan atribut yang dibuat secara nyata. Butiran merupakan objek nyata manakala atribut adalah isi kandungan yang dikumpul daripada butiran tersebut.
- memudahkan pembekal data dan pengguna boleh saling bertukar data digital spatial.
- mengurangkan kemungkinan pertindihan atau duplikasi dalam usaha membangunkan pangkalan data.

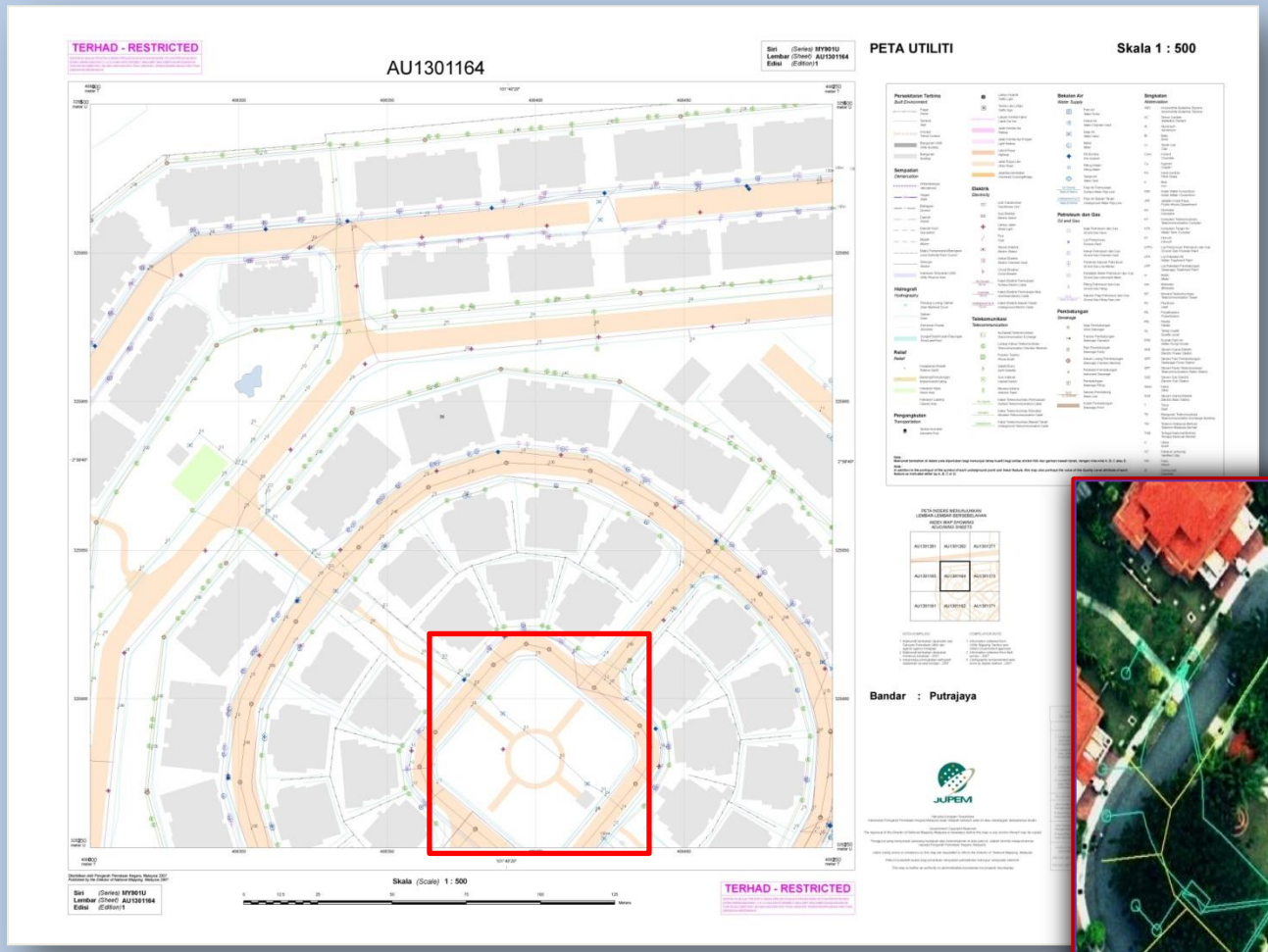
STATUS PANGKALAN DATA UTILITI
(Pengumpulan Data Utiliti daripada Agensi)

TAHUN	KAWASAN	AGENSI UTILITI				
		SY /SN	TM	IWK	GM	TNB
2007	Putrajaya	✓	✓	✓	✓	✓
	Cyberjaya	✓	✓	✓	✓	✓
2008	Shah Alam	✓	✓	✓	✓	✓
	Subang Jaya	✓	✓	✓	✓	✓
2009	Kelang	✓	✓	✓	✓	✓
	Petaling Jaya	✓	✓	✓	✓	✓
	Sepang	✓	✓	✓	✓	✓
	Kajang	✓	✓	✓	✓	✓
2010	Kuala Lumpur	✓	✓	✓	✓	✓
	Ampang Jaya	✓	✓	✓	✓	✓
	Selayang	✓	✓	✓	✓	✓
	Kuala Langat	✓	✓	✓	✓	✓
2011	Kuala Selangor	✓	✓	✓	✓	X
	Sabak Bernam	✓	✓	✓	✓	X
	Seremban	✓	✓	✓	✓	X
	Nilai	✓	✓	✓	✓	X
2012	Hulu Selangor	✓	✓	✓	-	X
	Port Dickson	X	✓	✓	-	X
	Rembau	X	✓	✓	-	X
	Kuala Pilah	X	✓	✓	-	X

Kawasan Lembah Klang

SY = SYABAS TM = TELEKOM IWK = INDAH WATER
GM = GAS MALAYSIA TNB = TENAGA NASIONAL SN = SAINS

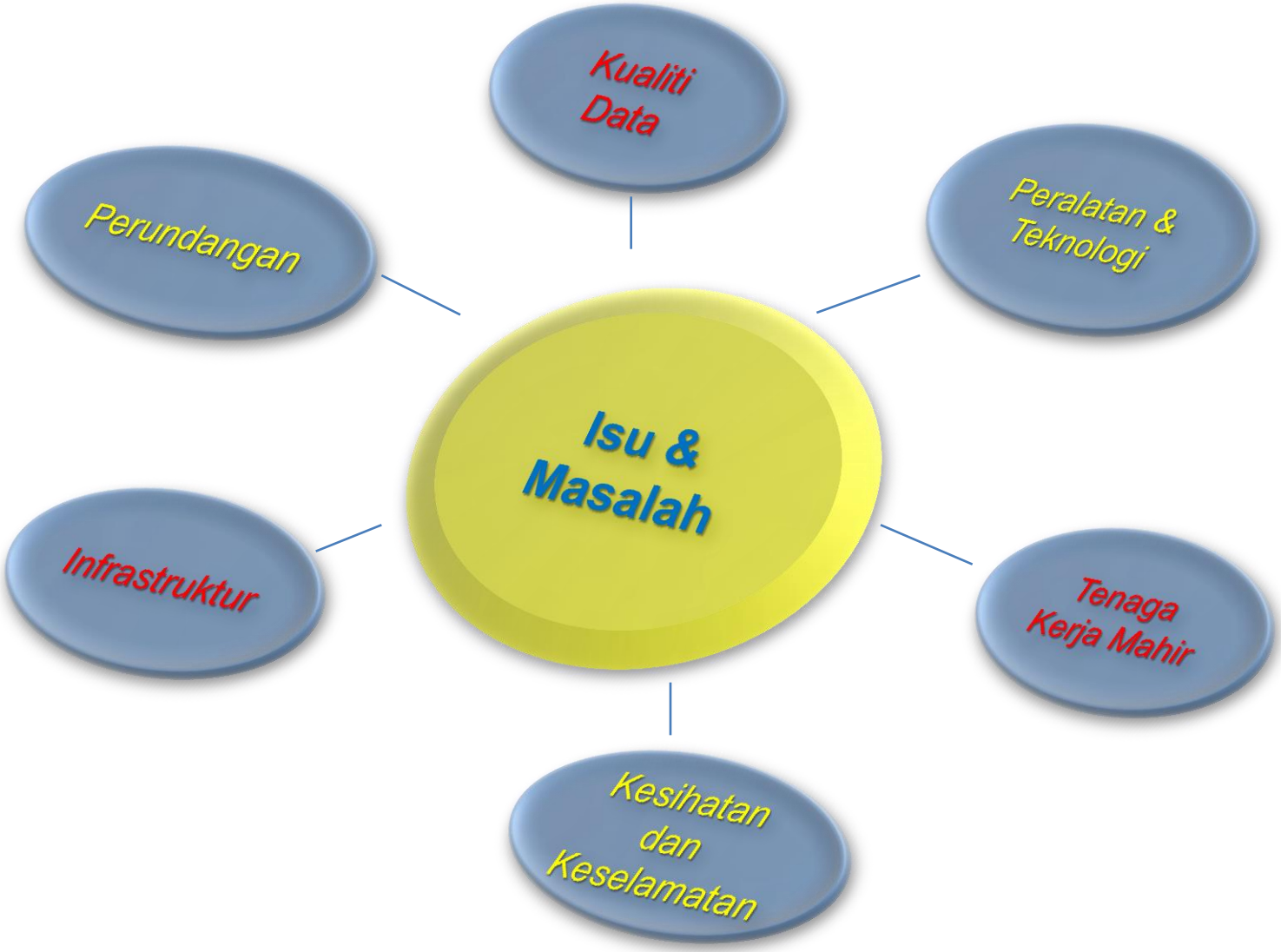
CONTOH PETA UTILITI



Red	Electric Power Line, Cables,
Yellow	Gas
Orange	Communication Cables
Blue	Water
Green	Sewers

Peta Utiliti skala 1:500 menunjukkan kedudukan utiliti dan butiran topografi (permukaan bumi) pada kejituan sentimeter

ISU & MASALAH DALAM PEMETAAN UTILITI



GAMBARAN KEDUDUKAN PEPASANGAN UTILITI BAWAH TANAH

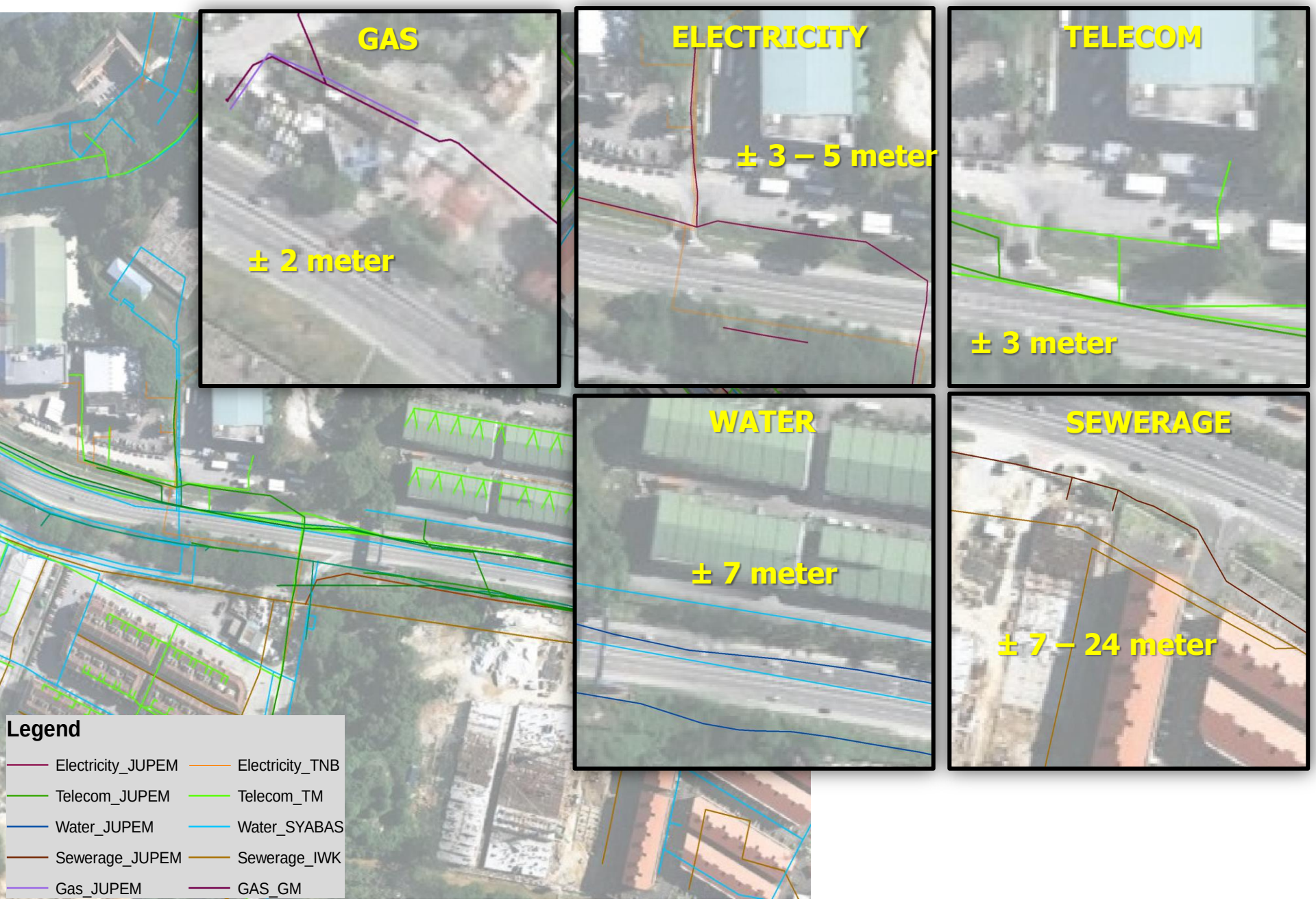
GAMBARAN KEDUDUKAN PEPASANGAN UTILITI BAWAH TANAH

Kualiti Data

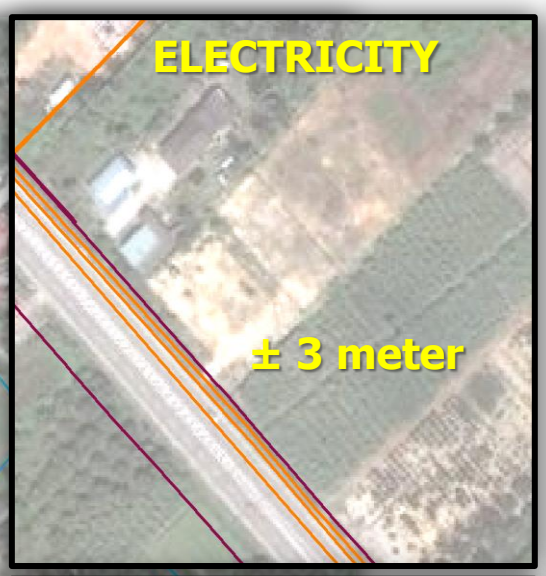
- Meningkatkan kualiti data yang dibekal oleh penyedia utiliti:
  - Kualiti data tidak konsisten bergantung kepada spesifikasi dan keperluan penyedia utiliti
  - Data tidak lengkap dan dikemaskini
  - Data dibekal dalam bentuk pelan cadangan dan bukannya dalam bentuk pelan *as-built*
  - Mewajibkan ukuran dibuat semasa pemasangan bagi menghasilkan pelan utiliti *as-built*

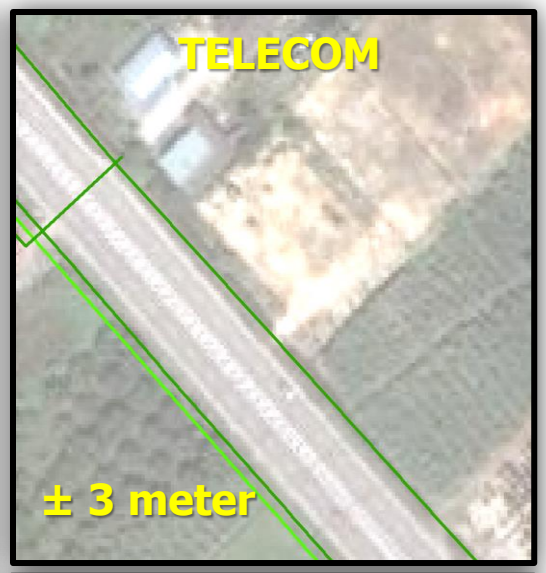
Data Quality

SELAYANG


GAS
± 2 meter
ELECTRICITY
± 3 – 5 meter
TELECOM
± 3 meter
WATER
± 7 meter
SEWERAGE
± 7 – 24 meter
Legend
Electricity_JUPEM
Electricity_TNB
Telecom_JUPEM
Telecom_TM
Water_JUPEM
Water_SYABAS
Sewerage_JUPEM
Sewerage_IWK
Gas_JUPEM
GAS_GM

KUALA SELANGOR



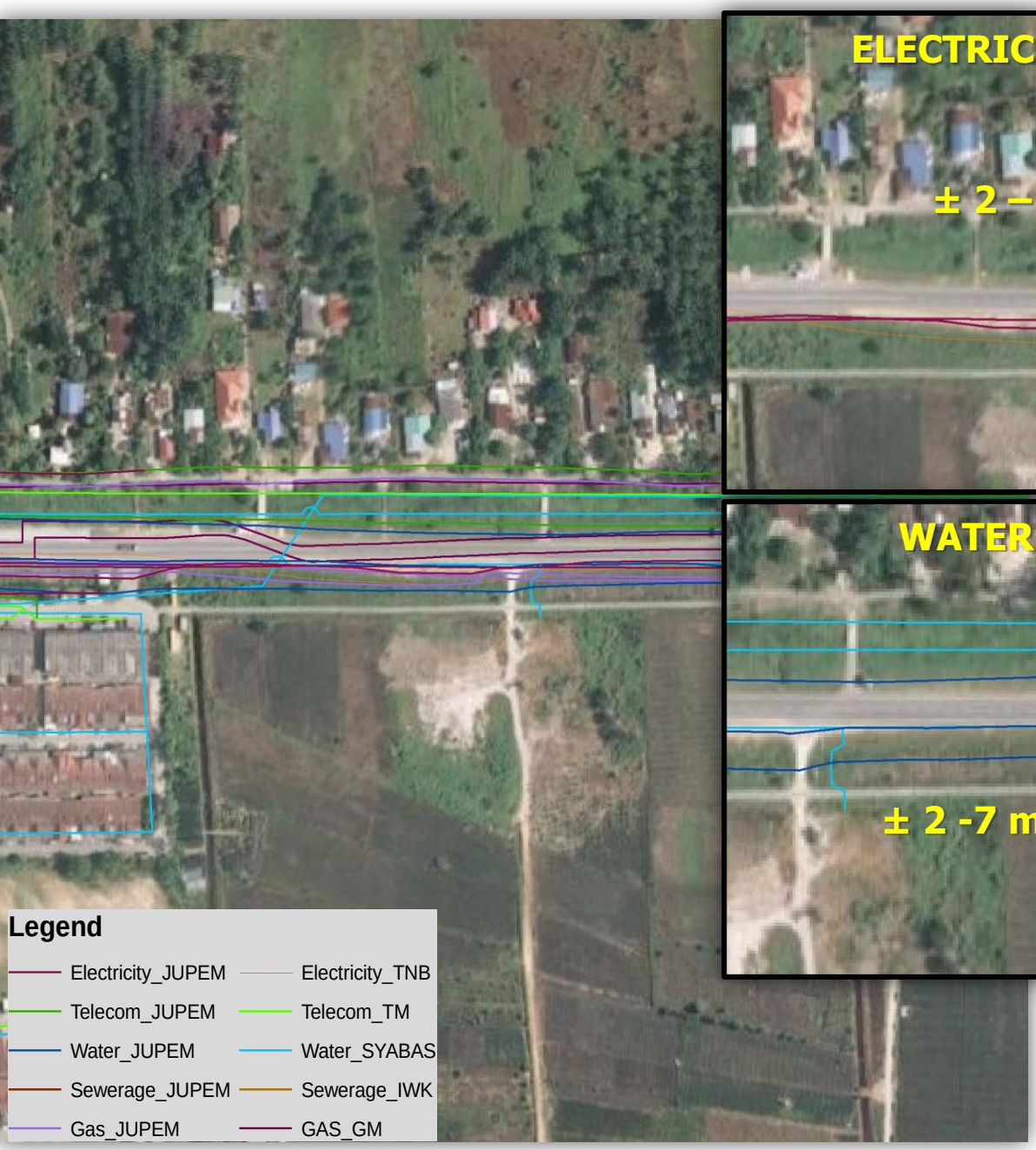


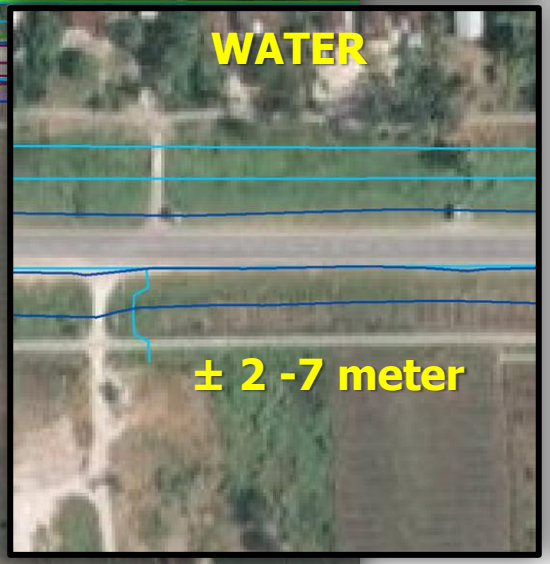
Legend

- Electricity_JUPEM
- Electricity_TNB
- Telecom_JUPEM
- Telecom_TM
- Water_JUPEM
- Water_SYABAS
- Sewerage_JUPEM
- Sewerage_IWK
- Gas_JUPEM
- GAS_GM

Tiada Maklumat Utiliti Sewerage

KELANG





Tiada Maklumat Utiliti Sewerage