



PERFORMANCE BASED CONTRACT (PBC)

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Presented By :

R.CHANDIRAMOHAN
BSFJ Zon Selatan



IBU PEJABAT
JABATAN KERJA RAYA

CAWANGAN SENGGARA FASILITI JALAN



OBJEKTIF KURSUS

Apakah yang dimaksudkan dengan *Performance Based Contract (PBC)*?

- i. Memahami perbezaan di antara Kontrak Berasaskan Prestasi (PBC) dan Kontrak Berasaskan Cara (*Prescriptive Contracts*).
- ii. Memahami akan kelebihan dan kebaikan Kontrak Berasaskan Prestasi (PBC).
- iii. Metodologi menyediakan terma Kontrak Berasaskan Prestasi (PBC).
- iv. Mengetahui cara untuk mentadbir dan menguruskan Kontrak Berasaskan Prestasi (PBC)

DEFINISI PBC

Apakah yang dimaksudkan dengan *Performance Based Contract*?

Menurut *World Bank Transport Note 2012* "Prestasi Berdasarkan Kontrak ditakrifkan sebagai satu bentuk kontrak di mana pembayaran kontrak pelaksanaan kerja adalah berdasarkan pencapaian dan memenuhi hasil prestasi, perkhidmatan, operasi, dan produk yang diberikan secara insentif dan kontrak jangka panjang serta dipersetujui oleh beberapa pihak.

"PBC is a form of contract where payments are tied to achieving measureable performance outcomes for a given service/product through incentivized, long term contract with specific and measureable levels of operational performance defined by the customer and agreed on by contracting parties"

World Bank Transport Note

OUTCOME BASED CONTRACT

PBC juga ditakrifkan sebagai outcome based contract atau kontrak berasaskan hasil. Spesifikasi PBC berdasarkan :

- i. Outcome **bukannya** input atau output
- ii. Hasil kerja (Outcome) dari pihak kontraktor **bukannya** cara kerja yang dijalankan
- iii. Contoh ;
 - Pemilik mahukan bilik air yang bersih(berfungsi) **bukannya** cara bagaimana ia dibersihkan.
 - Jalanraya yang kondusif **bukannya** cara menyenggara jalanraya tersebut.

KENAPA PERKENALKAN PBC DALAM PENYENGGAARAN JALAN PERSEKUTUAN ???



KENAPA PBC???

- i) Pengurusan jalanraya yang baik akan dapat memanjangkan kitar hayat jalanraya di samping mengurangkan kos penyenggaraan dalam jangka masa panjang.

- ii) PBC meletakkan cabaran kepada kontraktor berbanding dengan kontrak konvensional (tradisi) tetapi di waktu yang sama membuka ruang dan peluang kepada kontraktor untuk meningkatkan keuntungan di mana kerja dilakukan secara efisien dan efektif dari segi rekabentuk, proses, teknologi dan pengurusan kontraktor yang mampu mengurangkan kos di dalam mencapai hasil/kehendak yang telah ditetapkan.

iii) PBC membolehkan kontraktor menghasilkan dan berkongsi pengalaman dan juga teknologi yang lebih baik (terkini) dengan pihak Jabatan di dalam tugas / bidang yang lain.

MOTIVASI PERUBAHAN KE ARAH PBC

- i. Menggalakkan lebih banyak inovasi dalam bidang pembinaan dan penyenggaraan.
- ii. Percubaan penggunaan firma kepakaran swasta(*trial outsourcing*)
- iii. Memberikan Tahap Perkhidmatan yang konsisten kepada pengguna jalanraya.
- iv. Pengurusan jalanraya yang baik, ketepatan masa, penyelesaian teknikal yang kritikal dan jaminan jangka hayat pavemen
- v. Menjamin keselamatan trafik yang lebih baik
 - Papantanda jalan dan garisan jalan yang konsisten
 - *Carriageways* yang mencukupi
 - Bahu jalan yang disenggara dengan baik dll.
- vi. Kos yang lebih efektif dan lebih bernilai.

Jalanraya Yang Baik Merupakan Satu Faktor Penting Bagi Menjana Ekonomi Yang Memberansangkan

- Ianya dapat mengurangkan jurang antara:
 - Penduduk
 - Pasaran
 - Perkhidmatan
 - Pengetahuan (Universiti, kolej, dll)
- Kualiti jaringan jalanraya yang baik akan mengambarkan satu petunjuk positif bagi perkembangan ekonomi negara.

Pengurusan Kitaran Hayat Jaringan Jalanraya

Di bawah model PBC ini

- Kerajaan hanya menumpukan pada pencapaian Tahap Perkhidmatan (outcomes).
- Tanggungjawab terletak pada pihak Konsesi bagi mencapai Tahap Perkhidmatan yang ditetapkan.
 - Tiada lagi faktor lain yang boleh dipersalahkan
- Sebahagian daripada keuntungan Syarikat Konsesi terletak pada risiko, jika pihaknya gagal mencapai Tahap Perkhidmatan (Service Level) yang ditetapkan.
 - Pihak konsesi akan sentiasa peka.
- Konsep PBC ini adalah sama dengan konsep kontrak Reka & Bina, Senggaraan, Operasi dan Pemindahan aset baru.

MERIT DALAM PERFORMANCE BASED CONTRACT (PBC) JANGKA PANJANG



FAEDAH KEPADA KERAJAAN/JKR

- Menjamin peruntukan penyenggaraan disediakan untuk jangka panjang
- Lebih transperansi dan akauntabiliti dalam pelaksanaan
- Mengurangkan kos penyenggaraan melalui kaedah yang lebih efektif dan efisien dengan teknologi dan cara kerja yang lebih baik
- Fokus yang lebih baik terhadap keperluan pelanggan
- Pengurangan risiko dengan meningkatkan kawalan dan penguatkuasaan kualiti kerja
- Pengurangan beban tugas dan pengawasan tetapi kawalan melalui kerja audit berkala dan terpilih. Lebih fokus terhadap isu penting lain.
- Konsesi perlu bertanggungjawab ke atas hasil kerjanya.

FAEDAH KEPADA PENGGUNA JALANRAYA

- Jalanraya yang lebih baik dan selamat dengan keadaan yang lebih konsisten
- Pengurangan kos penyenggaraan kenderaan disebabkan keadaan jalanraya
- Jaminan Tahap Perkhidmatan yang minimum



FAEDAH KEPADA KONSESI

- Jaminan kuantiti kerja dalam jangka masa panjang
- Peluang untuk meningkatkan keuntungan melalui
 - Inovasi
 - Kerja dilakukan secara efisien dan efektif dari segi rekabentuk, proses, dan teknologi
 - Penambahbaikan pengurusan risiko
 - Dapat menjalankan kerja tepat pada masanya dalam jangka pendek, sederhana dan jangka panjang dengan memahami prestasi aset
- Menambah lebih banyak peluang bagi pertumbuhan perniagaan
 - Kejayaan pelaksanaan PBC akan mengalakkan penggunaan secara menyeluruh Model PBC di masa akan datang

PEMACU KEJAYAAN PBC

Dorongan Yang Tepat

- **Pengubahsuaian kontrak mengikut keperluan tempatan**
- **Memastikan kesaksamaan perkongsian risiko**
- **Membangunkan metrik prestasi yang kukuh**
- **Saiz dan tahap rangkaian yang sesuai**
- **Menentukan penalti untuk memastikan pematuhan**

CABARAN PELAKSANAAN PBC

- i. Kos lebih tinggi bagi menetapkan Tahap Perkhidmatan yang baru
- ii. Lebih banyak masa diperlukan bagi proses perolehan
- iii. Kos tambahan bagi pengumpulan data
- iv. Kehilangan fleksibiliti budget
- v. Sukar untuk melayan permintaan daripada ahli politik tempatan
- vi. Kurang penglibatan kepakaran dalaman (kurang penglibatan)
- vii. Mengurangkan pertandingan kontraktor tempatan
- viii. Kemahiran dan pemahaman sepenuhnya diperlukan dalam membentuk dan melaksanakan konsep PBC

CABARAN PELAKSANAAN PBC

- ix. Perlu tukar paradigma di dalam mengendalikan PBC, kerana memerlukan kemahiran di dalam membentuk konsep PBC dan melaksanakannya.
- x. Organisasi perlu mengetahui secara menyeluruh di dalam metodologi untuk menghasilkan pengukuran pengambilan data dan tahap perkhidmatan (LOS), apabila mengendalikan kontrak berasaskan prestasi (PBC) berdasarkan 'performance work statement (PWS) or 'statement of work (SOW)'.- xi. Melaksanakan/mentadbir PBC memerlukan siap siaga dan memahami sepenuhnya konsep pihak yang mengendalikan kontrak.

CABARAN BAGI PENGGUNA JALANRAYA

- Tiada (Jalanraya yang lebih baik di masa hadapan)



PERBEZAAN KONSEP ANTARA KAEDAH KONVENTSIONAL DAN PBC

Perkara	Kaedah Konvensional	Kaedah PBC
Kaedah	Konvensional	Performance Based
Pembayaran	Pembayaran dibuat berdasarkan <i>unit price</i>	Pembayaran dibuat secara <i>lump sum</i> sekiranya mencapai standard prestasi yang dipersetujui
Kadar Harga	Kadar harga ditentukan berdasarkan jumlah output	Kadar harga adalah tetap
Penalti	Tiada penalti dikenakan bagi kerja-kerja yang tidak mencapai standard yang telah ditentukan	Penalti berbentuk denda akan dikenakan sekiranya tidak mencapai prestasi yang dipersetujui
Kebolehan Pengurusan Aset Bagi Agensi dan Konsesi	Rendah	Sederhana/Tinggi
Motivasi Konsesi	Sekiranya jumlah output yang dihasilkan adalah tinggi, pendapatan yang diperolehi akan meningkat. Hal ini akan menyebabkan konsesi lebih fokus kepada pengeluaran output	Lebih fokus kepada prestasi kerja penyelenggaraan dalam memastikan tahap prestasi kerja berada dalam keadaan baik
Tahap Pemantauan Agensi	Tinggi dari segi pemantauan dan kawalan kerja	Sederhana dari segi pemantauan dan audit
Pembahagian Risiko	Risiko ditanggung sepenuhnya oleh agensi Kerajaan	Risiko ditanggung sama rata oleh agensi Kerajaan dan syarikat konsesi

JENIS-JENIS *PERFORMANCE BASED CONTRACTS*



Hanya Penyenggaraan
Rutin berasaskan
Kontrak PBC

PBC sepenuhnya dengan
meletakkan semua tanggungjawab
dan kuasa untuk membuat
keputusan ditangan kontraktor



Jangka Pendek

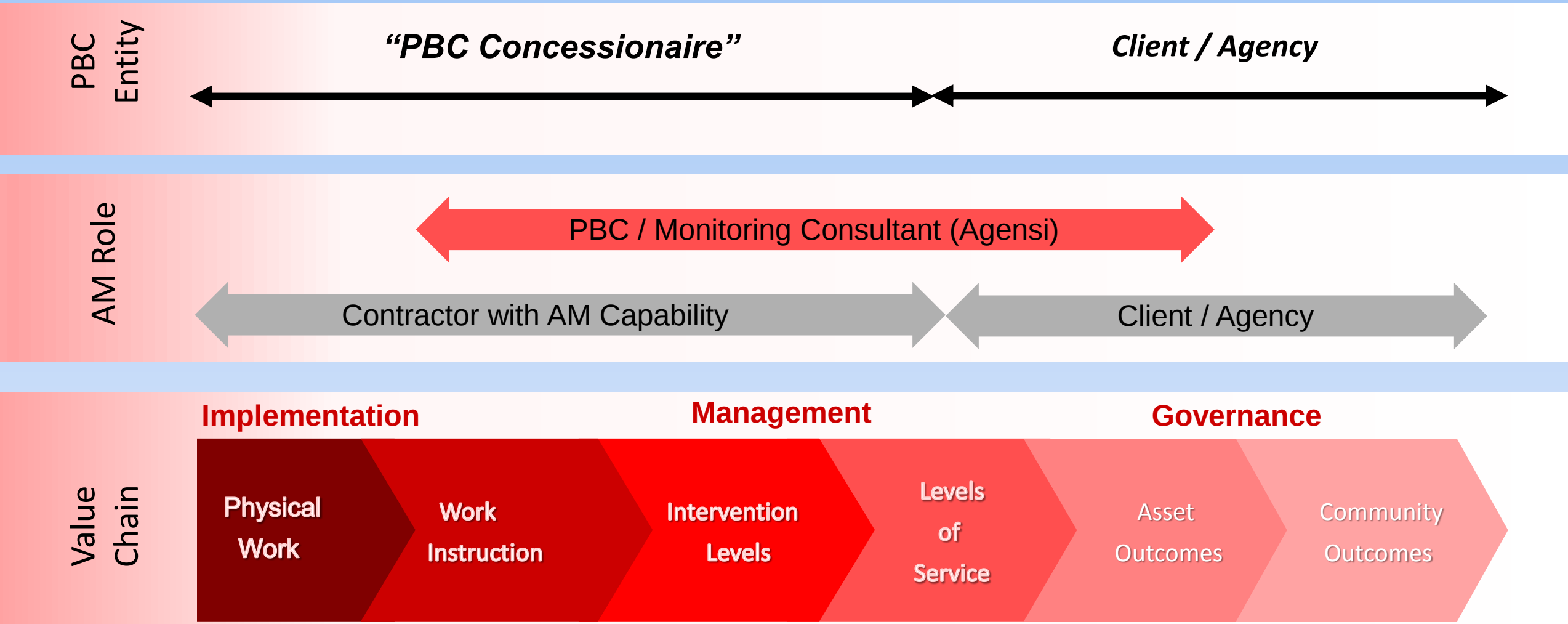
Jangka Panjang

Hybrid

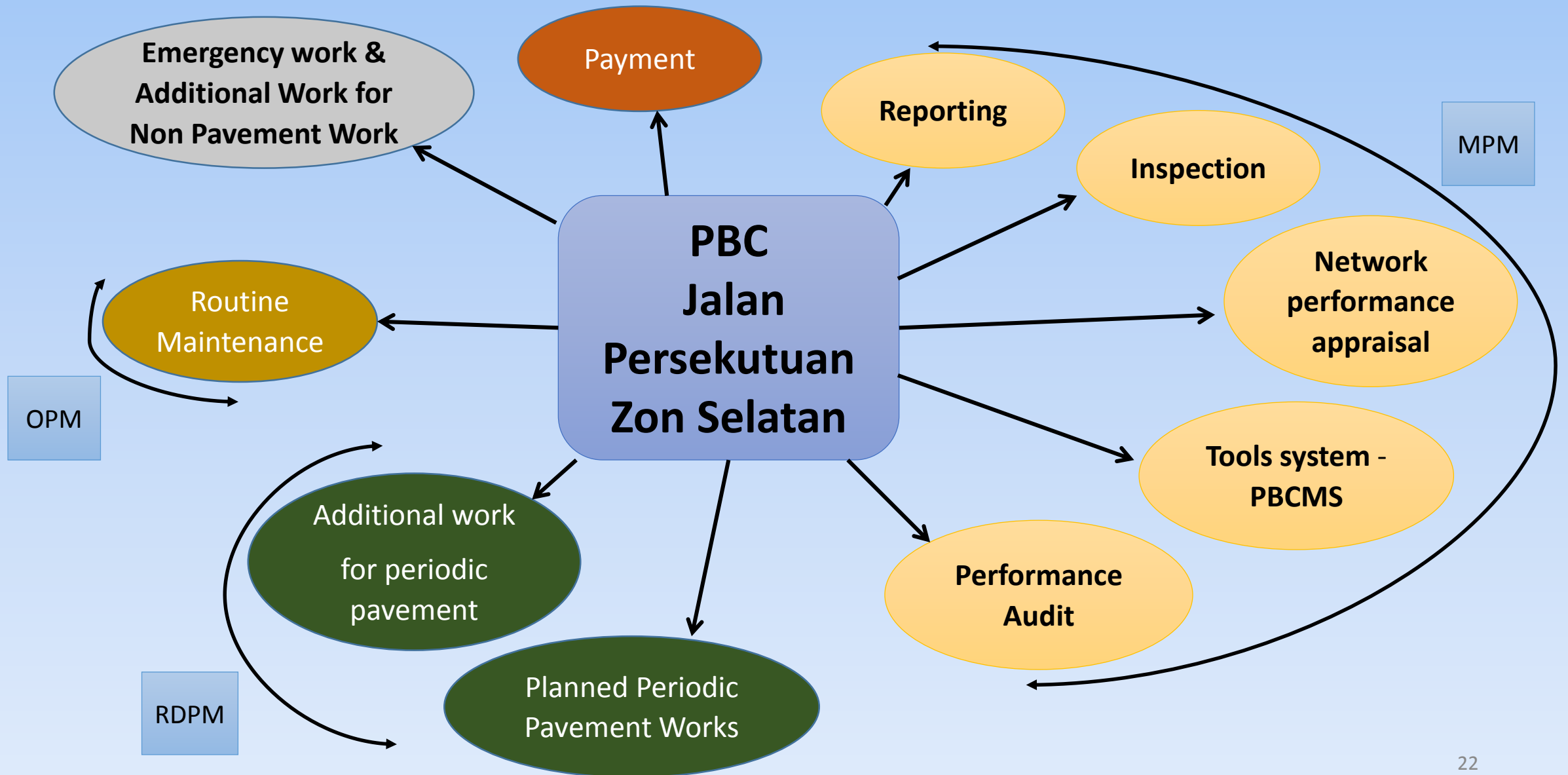


- PBC Hybrid merupakan pilihan paling sesuai mengikut keadaan tempatan tanpa kehilangan faedahnya.
 - Pelanggan menetapkan kos
 - Kontraktor menetapkan dimana dan bagaimana

KEBOLEHAN PENGURUSAN ASET ANTARA AGENSI DAN KONSESI



PBC OVERVIEW



KOMPONEN UTAMA PENGUKURAN PRESTASI PBC

OPM – OPERATIONAL PERFORMANCE MEASURES

RDPM – ROAD DURABILITY PERFORMANCE MEASURES

MPM – MANAGEMENT PERFORMANCE MEASURES

SKOP KERJA DALAM PELAKSANAAN PBC

Data Collection:

- *High Speed Road Scanner* (IRI, RUT, MTD, Geometric, Roadside Inventory)
- FWD
- *Coring & DCP*
- *Trial Pits & Lab Testing*
- *Axle Load Survey*
- *Traffic Count*
- *Visual Condition Survey* (pavement, bridge, culvert, road furniture i.e guardrails, road marking, signages,)

Analysis:

- IRI, Rutting, Texture Depth, Geometric Information, LCMS, GPS Coordinates x, y, z
- Deflections, GPS coordinates and road chainage
- Layers and thicknesses
- Gross vehicle weight, axle loading and calculation of EF
- Hourly traffic volume by vehicle classes
- Asset condition

PBC Contracts:

- *Analysis, Modelling, Forward Budget Programme*
- *Appropriate Level of Service*
- *Costing*
- *PBC Contract Forms*

Monitoring Systems:

- *Specification for Asset Management System*
- *PBC Monitoring System*

Routine Maintenance Works



Definition

Means the routine maintenance works carried out or to be carried out by the Company in relation to the Concession, including the non-pavement repair and rehabilitation works within the Concession Area

Service Level for Routine Maintenance

- Operational Performance Measures (OPM)

ROUTINE MAINTENANCE

Activities:

**Routine Activities & Clearing
backlog of repair & replacement**

- I. Patching
- II. Grass cutting
- III. Cleaning
- IV. Clearing
- V. Regrading
- VI. Repair
- VII. Replace
- VIII. Re-do
- IX. Re-painting

Payment:

- I. Per KM/Month
- II. As per work completed
- III. Deduction – Network, Appraisal, Score/month

(PBC)
Routine
Maintenance
Nature of Work

Length:

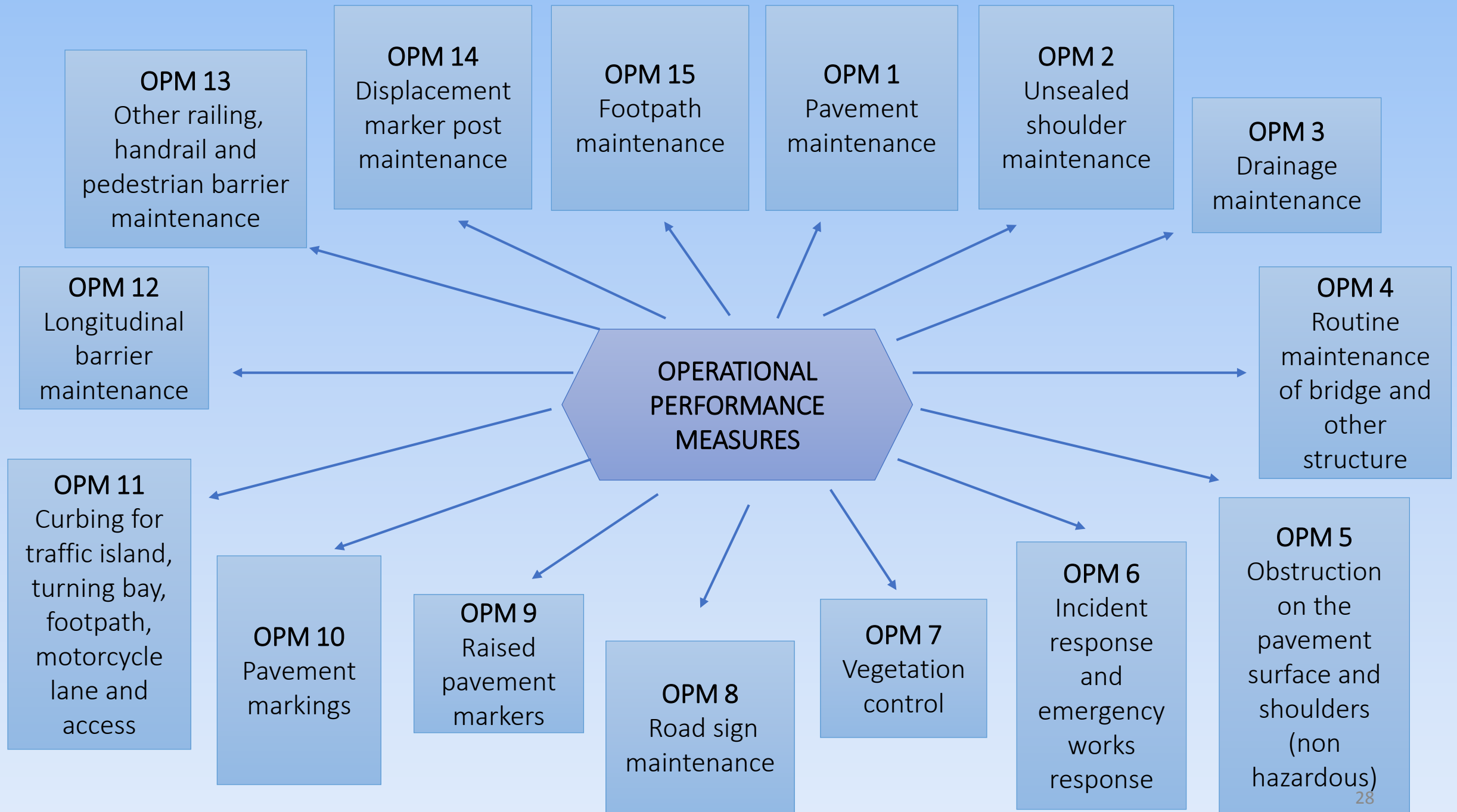
- I. 791.1 KM (FT 001, FT 003 & FT 005)

Service Level:

- I. Measured by OPM 1-15
- II. Hit numbers
- III. Allowable performance threshold

Scope:

- I. Pavement maintenance
- II. Unsealed Shoulder Maintenance
- III. Drainage Maintenance
- IV. Routine Maintenance of Bridges and Other Structures
- V. Obstruction on the Pavement Surface & Shoulders (non-hazardous)
- VI. Incident Response & emergency work response
- VII. Vegetation control
- VIII. Road sign maintenance
- IX. Raised pavement markers
- X. Pavement markings
- XI. Kerbing for traffic island, turning bay, footpath, motorcycle lane and access
- XII. Longitudinal barrier maintenance
- XIII. Other railing, hand rail and pedestrian barrier maintenance
- XIV. Displacement Marker post maintenance
- XV. Footpath maintenance



CONTOH OPM :

OPM-6 – INCIDENT RESPONSE & EMERGENCY WORKS

OPM	Activities	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Service Level	
		Weighting	Sub-Weighting (without any consecutive monthly record)	Protocol Roads	Primary Roads
	Notify Government and relevant Authorities on the incidents and emergency events.			i) Less than one (1) hour to contact Government and relevant Authorities.	Less than one (1) hour to contact Government and relevant Authorities.
	Providing patrols in advance of and during any storm events or other weather related phenomena.			ii) Less than four (4) hours to secure the site.	Less than four (4) hours to secure the site.

OPM-6 Incident Response and Emergency Works	Remove fallen trees, branches and debris to free traffic flow and install all temporary warning signage traffic control signage and barriers cones high visibility netting, etc.	2	1	iii) Less than four (4) hours to remove obstructions to free traffic flow.	Less than four (4) hours to remove obstructions to free traffic flow.
	Provide traffic management and install all temporary warning signage traffic control signage and barriers cones high visibility netting, etc., to make the road passable to traffic.			iv) Adequate resources provided to manage the incident or Emergency Works.	Adequate resources provided to manage the incident or Emergency Works.

OPM-8 – ROAD SIGN MAINTENANCE

OPM	Activities	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Service Level	
		Weighting	Sub-Weighting (without any consecutive monthly record)	Protocol Roads	Primary Roads
OPM-8 Road Signs Maintenance	Cleaning, repair, replace and repaint the signs and supporting structures.	2	1	i) No broken, damaged, illegible, obscured, or misaligned signs within 5km centerline length.	No broken, damaged, illegible, obscured, or misaligned signs within 5km centerline length.
	Notify and report unauthorised signs.			ii) No unauthorised sign not to be reported within 5km centerline section.	No unauthorised sign not to be reported within 5km centerline section.
	Inspect and submit yearly report on frangible post.			iii) All frangible posts inspected every twelve (12) months.	All frangible posts inspected every twelve (12) months.
	Repair damaged frangible posts.			iv) Damaged frangible posts replaced within seven (7) days.	Damaged frangible posts replaced within seven (7) days.
	Inspect and submit yearly report on gantries.			v) All sign gantries inspected every twelve (12) months.	All sign gantries inspected every twelve (12) months.

OPM–10 Pavement Markings

OPM	Activities	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Service Level	
		Weighting	Sub-Weighting (without any consecutive monthly record)	Protocol Roads	Primary Roads
OPM-10 Pavement Marking	Repainting of non-compliant pavement markings.	2	1	i) Not more than 10m length of pavement marking not complying with JKR's specifications within 5km centerline section.	Not more than 10m length of pavement marking not complying with JKR's specifications within 5km centerline section.
	Repainting of non-compliant pavement markings.			ii) Not more than 20m length of pavement marking not clearly visible day or night, viewed from the center of the lane within 1km centerline length. Night visibility must be at 150m with headlights on full beam, or 100m when dipped.	Not more than 20m length of pavement marking not clearly visible day or night, viewed from the center of the lane within 1km centerline length. Night visibility must be at 150m with headlights on full beam, or 100m when dipped.
	Repaint all areas of wear or loss pavement markings.			iii) All areas of wear or loss are to be remarked within sixty (60) days of identification.	All areas of wear or loss are to be remarked within sixty (60) days of identification.

OPM-12 Longitudinal Barrier Maintenance

OPM	Activities	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Service Level	
		Weighting	Sub-Weighting (without any consecutive monthly record)	Protocol Roads	Primary Roads
OPM-12 Longitudinal Barrier Maintenance	Secure damaged longitudinal barrier.	2	1	i) Less than four (4) hours to secure damaged longitudinal barrier following reporting.	Less than four (4) hours to secure damaged longitudinal barrier following reporting.
	Cleaning or removing of any graffiti, unauthorised markings, sign, posters, excessive build-up of dirt or soot.			ii) Less than seven (7) days for permanent repair of guardrails. Less than fourteen (14) days for permanent repair of wire ropes. Less than twenty-one (21) days for permanent repair of crash cushion.	Less than seven (7) days for permanent repair of guardrails. Less than fourteen (14) days for permanent repair of wire ropes. Less than twenty-one (21) days for permanent repair of crash cushion.
	Cleaning, repair or replace damaged longitudinal barrier and submit monthly report on confirmation of repairs.			iii) No graffiti, unauthorised markings, sign, posters, excessive build-up of dirt or soot.	No graffiti, unauthorised markings, sign, posters, excessive build-up of dirt or soot.

Repeat OPM Non-Conformance in Consecutive Months

OPM	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Service Level		
	Weighting	Sub Weighting (without any consecutive monthly record)	Primary / Protocol Roads	Secondary/ Federal Institutional / Industrial Roads	FELDA Access and Internal / UHF & VHF Roads
Repeat Service Level OPM non-conformance in consecutive months after month twelve (12) of the Agreement.	4	No. of consecutive Months since the same service level non-conformance initially identified.	Consecutive non-conformance relating to the same OPM Service Level reported in subsequent monthly assessments beyond month twelve (12) from the Effective Date will have the weighting of 4 applied.		

Failure to Identify OPM Non-Conformance Within the Assessment Section

OPM	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Service Level		
	Weighting	Sub Weighting (without any consecutive monthly record)	Primary / Protocol Roads	Secondary/ Federal Institutional / Industrial Roads	FELDA Access and Internal / UHF & VHF Roads
Failure by the Company to identify and report OPM non-conformance within any assessment section length or any MPM non-conformance not identified or included in the Self-Control Management Unit's monthly assessment summary beyond month twelve (12) of the Agreement.	6	1	Any un-reported Non-Conformance identified by the Government or Independent Auditor beyond month twelve (12) from the Effective Date will have a weighting of 6 applied.		

Failure to Address Immediate Safety Hazard Following Instructions from the Government

OPM	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Service Level		
	Weighting	Sub Weighting (without any consecutive monthly record)	Primary / Protocol Roads	Secondary/ Federal Institutional / Industrial Roads	FELDA Access and Internal / UHF & VHF Roads
Any immediate safety hazard to road users that has not been made safe by the Company beyond the time instructed by the Government.	6	No. of weeks the work remains un-completed following the time permitted in the written instruction to proceed.	Safety hazards with the potential to damage vehicles or injure road users, including cyclists and pedestrians identified at any location on the network.		

Further clarification on the OPM Service Level is provided below:

- The Company shall be proactive in identifying and addressing any immediate safety hazards (e.g. large holes or trenches in the pavement, damaged guardrail protruding into the traffic lane, broken posts etc.) during his normal routine maintenance inspections.
- The Government shall provide a reasonable period of time for this urgent work to be completed. The Company shall notify the Government as soon as practicable following the completion of the repair and shall include a list of urgent repairs and date of completion in the subsequent monthly report.

Periodic Maintenance Works



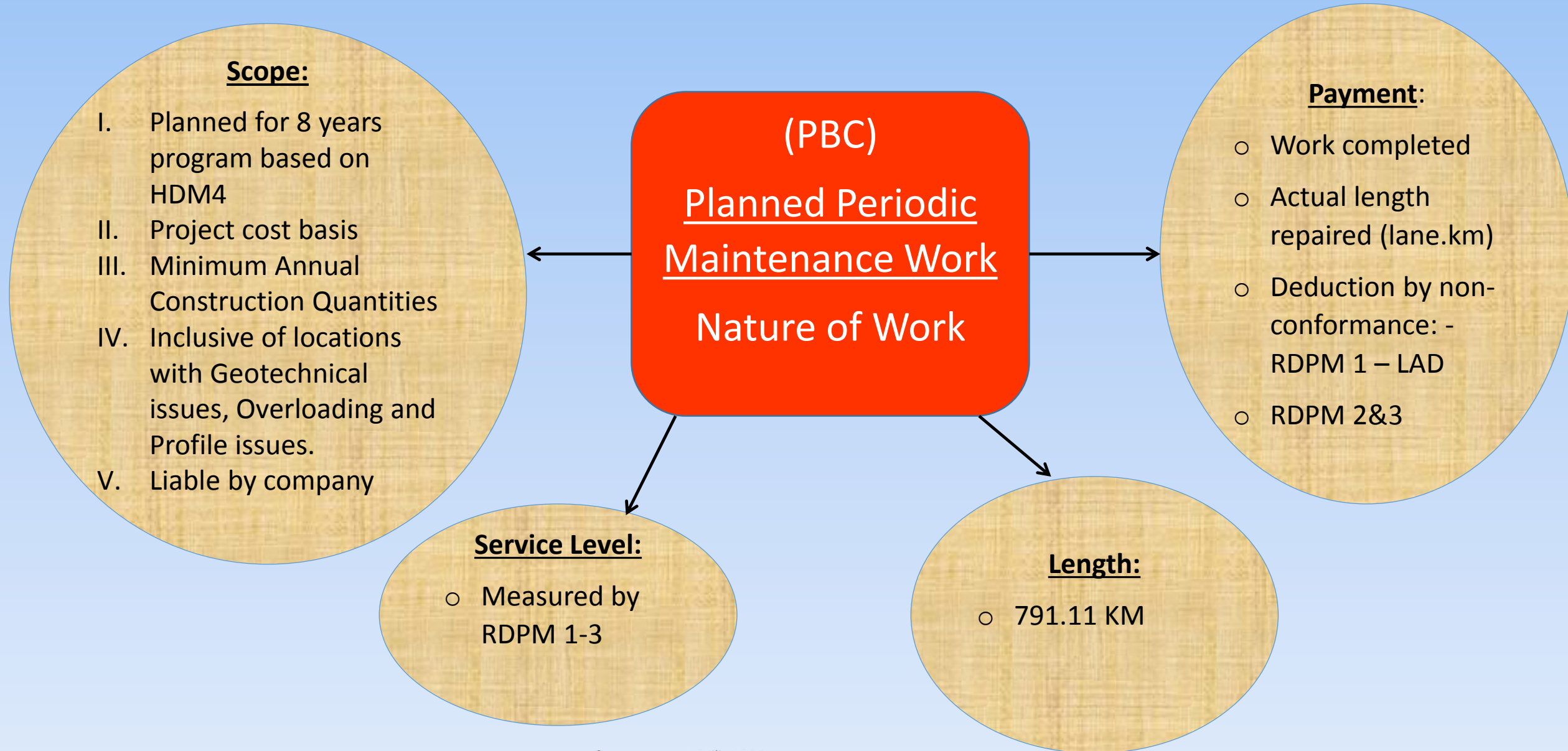
Definition

Means the planned periodic maintenance works carried out or to be carried out by the Company in relation to the Concession, within the Concession Area

Service Level for Periodic Maintenance Works

-Road Durability Performance Measures (RDPM)

PLANNED PERIODIC MAINTENANCE WORK



Road Durability Performance Measures (RDPM)

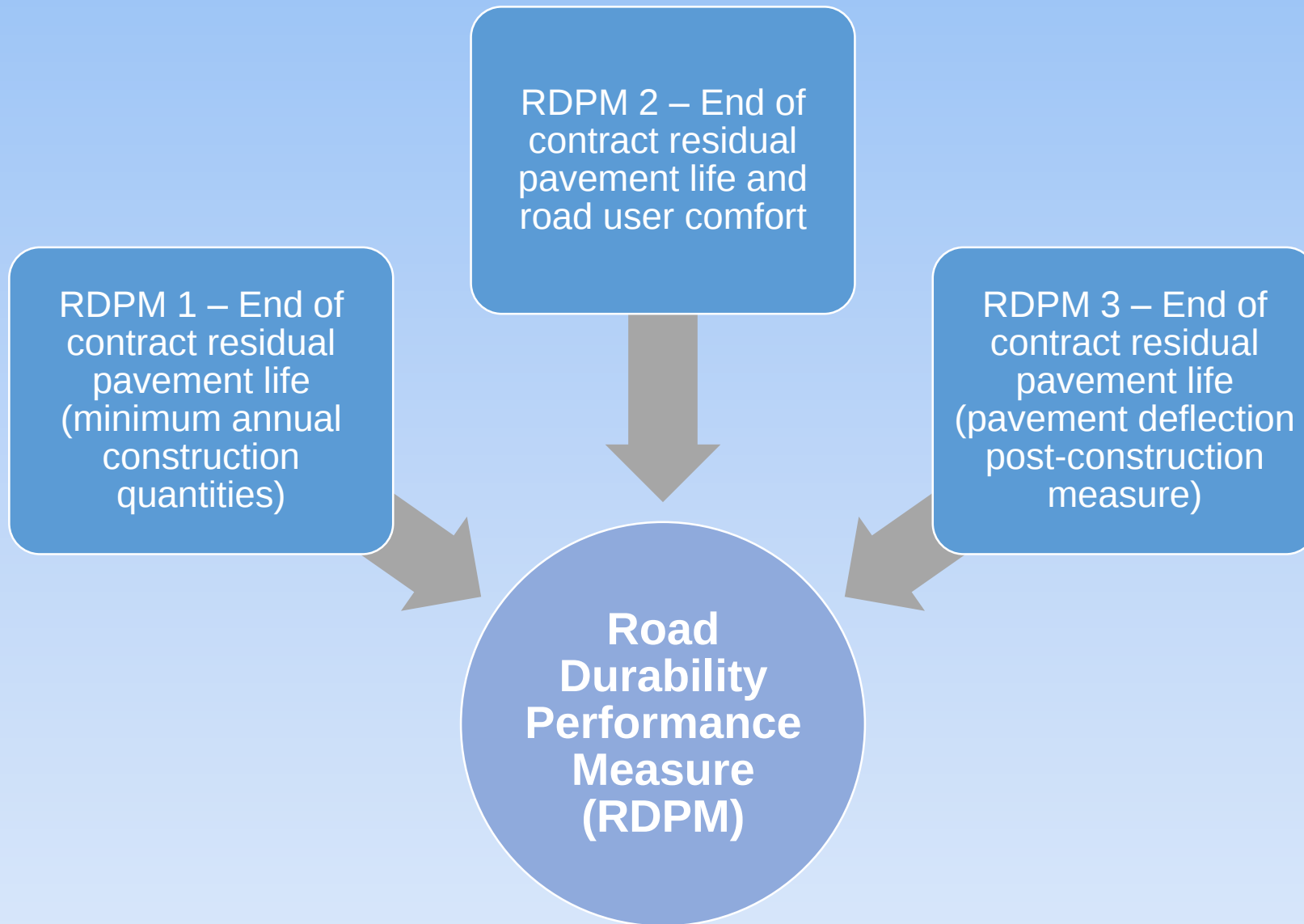
Road Durability Performance Measures (RDPM) Details

General

Road Durability Performance Measures (RDPM) are the measures undertaken by the Company to protect the pavement and surfacing assets, and check the consumption of these assets over the duration of this Agreement. The Company should take full ownership of the intent of these measures and manage their performance proactively throughout the Concession Period.

Road Durability Performance Measures (RDPM) Details

Although the frequency of measurement to be undertaken by the Company has been indicated for each of the durability performance measures, this shall not limit the Government's right to carry out measurements at any time during the entire Agreement.



The following Road Durability Performance Measures (RDPM) apply to this Agreement:

Measure (RDPM)	Service Level	Road Durability Performance Measures (RDPM)	Action in Case of Non-Conformance
RDPM-1 Residual Pavement Life	End of Contract Residual Pavement Life	Minimum Annual Quantities (Periodic Maintenance Works).	Penalty would be imposed if the Accepted Works Programme of Periodic Maintenance Works is not met.
RDPM-2 Pavement Roughness	End of Contract Residual Pavement Life and Road User Comfort	Average and maximum pavement roughness as measured by Class 1 precision Profiler according to the specifications as defined by ASTM E-950 - 94.(Refer to Paragraph 2.2.1 of Appendix 4).	No payment shall be made to each Separable Portion or part thereof that does not meet the RDPM-2 until rectification works and tests conducted on completion of rectification works will meet the Service Level.
RDPM-3 Pavement Deflection	End of Contract Residual Pavement Life	Pavement Deflection post-construction measured by Falling Weight Deflectometer meeting the requirements of American Society for Testing and Material 2001 (ASTM Standard). (Refer to Paragraph 2.4.1 and 2.4.2 of Appendix 4).	No payment shall be made to each Separable Portion or part thereof of newly constructed pavement that does not meet the RDPM-3 until rectification works and tests conducted on completion of rectification works will meet the Service Level.

Road Durability Performance Measures and Weightings

RDPM	Activities	Weightings to be Applied to the Recorded Non-Conformance		Road Classification / Proposed Service Level	
		Weighting	Sub-Weighting	Protocol Roads	Primary Roads
RDPM-1 Residual Pavement Life	Periodic Maintenance Works	-	-	i) Minimum Annual Quantities (in lane.km) for planned Periodic Maintenance Works achieved.	Minimum Annual Quantities (in lane.km) for planned Periodic Maintenance Works achieved.
RDPM-2 Pavement Roughness	Measuring road roughness in terms of IRI	5	Number of months between the date of scheduled completion under the Accepted Work Programme and the date of actual completion of the correction work.	i) More than the specified average roughness values.	More than the specified average roughness values.
				ii) More than the specified maximum pavement roughness values.	More than the specified maximum pavement roughness values.
RDPM-3 Pavement Deflection (New Construction)	Measuring pavement deflection	5	No. of months between the date of scheduled completion under the Accepted Work Programme and the date of actual completion of the correction work.	i) Measured Do pavement Deflection post-construction more than specified maximum value and;	Measured Do pavement Deflection post-construction more than specified maximum value and;
				ii) Measured BLI, MLI & LLI more than specified maximum value unless otherwise agreed by the Government.	Measured BLI, MLI & LLI more than specified maximum value unless otherwise agreed by the Government.

Management Performance Measures

Management Performance Measures

General

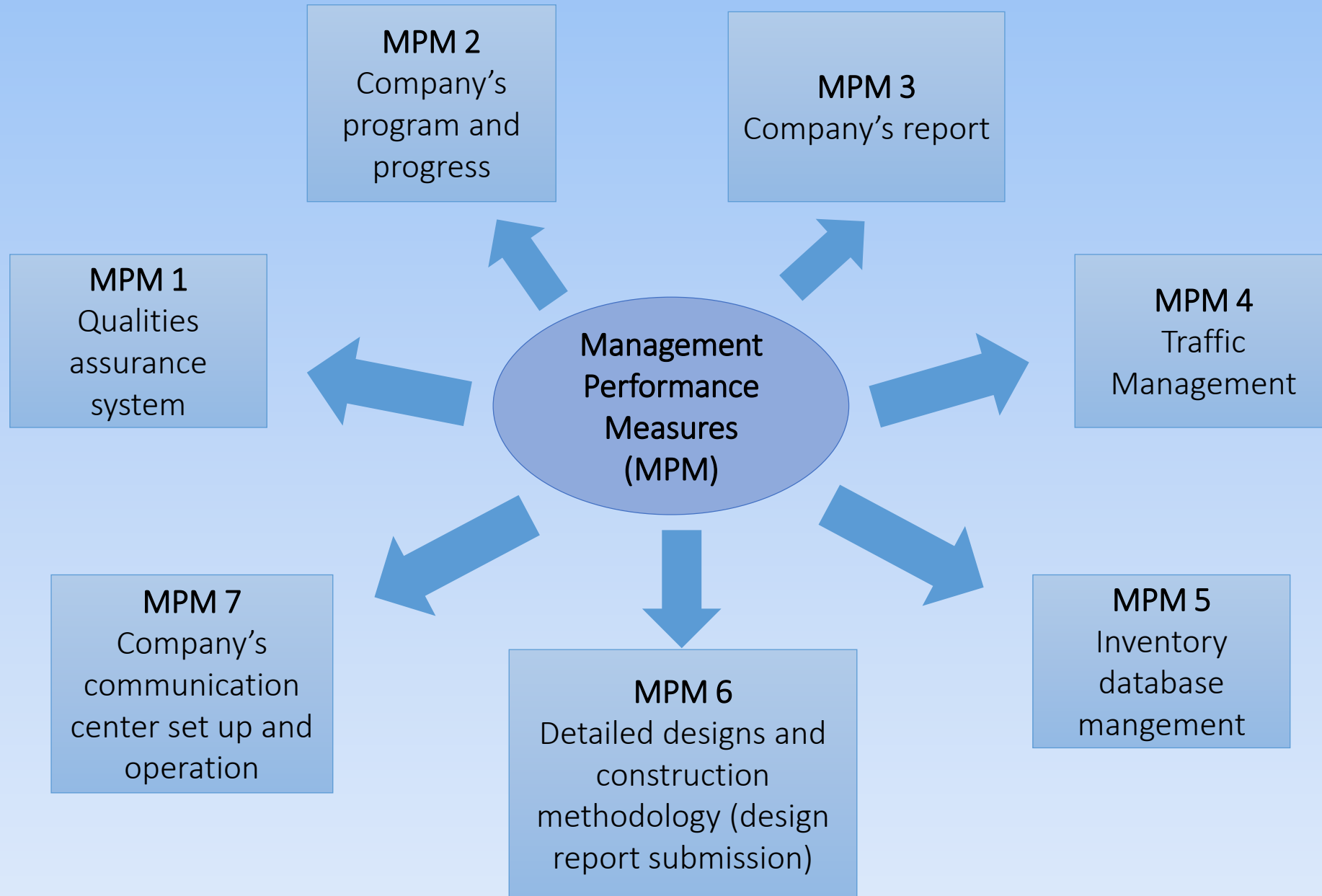
Management Performance Measures (MPM) reflect the ability of the Company to successfully manage this Agreement outputs including the quality and efficiency of its reporting of information to the Government. In general terms, these are measures of the Company's management of the following.

Management Performance Measures

- a) The development, implementation and management of the Company's:
 - i. Quality Assurance system
 - ii. Works Programme
 - iii. Inspections
 - iv. Reporting
 - v. Traffic Management Plan
 - vi. Forward Works Program (FWP)
 - vii. Environment Management Plan
 - viii. Detailed Design process for the Maintenance Works, including all required traffic diversions and ancillary works.

Management Performance Measures

- b) The effort to maintain a strong and sustainable contractual relationship
- c) The management of information and data
- d) Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) as necessary.



Contoh Management Performance Measures

MPM-2 Company's Works Programmes

MPM-2 has reference to compliances relevant to the Company's programming Service Level development and management. (Refer **Appendix 10**).

Performance Measure Conformance

The Company shall meet with the following requirements for the compliance of this Performance Measure:

MPM Description	Management Performance Measures (MPM) and Weightings				
	Activities	Non-Conformance Weighting	Sub weighting criteria (Unit)	Road Classification	Proposed Service Level Criteria
MPM-2 Company's Works Programme	Submit Works Programme for annual Periodic Maintenance Works.	1	Each day of delay	All	i) By end of September of the preceding Concession Year.
	Submit Works Programme for Additional Works.				ii) Within fourteen (14) days following notification to proceed from the Government.

MPM-3 Company Reports

MPM-3 has reference to compliances relevant to the Company's reporting (Refer **Appendix 13**).

Performance Measure Conformance

The Company shall meet with the following requirements for the compliance of this Performance Measures:

MPM Description	Management Performance Measures (MPM) and Weightings				
	Activities	Non-Conformance Weighting	Sub weighting criteria (Unit)	Road Classification	Proposed Service Level Criteria
MPM-3 Company's Reports	Submit Roads Assets Inventory System @ SPAJa.	2	Each day of non-receipt after deadline	All	i) Within one (1) month of the Effective Date.
	Submit Performance Measures Conformance Report.				ii) By the 15th day of the succeeding month.
	Submit Monthly Report.				iii) By 15th day of the succeeding month.
	Submit Emergency Event Notification.				iv) Within twenty-four (24) hours of observation or notification of the event.
	Submit Emergency Event Report.				v) Within five (5) days of notifying the Government's Representative of the emergency event.

MPM Description	Management Performance Measures (MPM) and Weightings				
	Activities	Non-Conformance Weighting	Sub weighting criteria (Unit)	Road Classification	Proposed Service Level Criteria
	Submit Post-Construction Report (including final As-Built Drawings).				vi) Within two (2) months of the completion of the construction works.
	Submit End of Contract Handover Report.				vii) Within one (1) month of the expiry of the Concession Period.
					viii) Monthly claims for Routine Maintenance Works by 15th day of succeeding month.
					ix) For Planned Periodic Maintenance Works – fourteen (14) days from the issuance of Certificate of Completion.
					x) For Additional Works – fourteen (14) days from the issuance of the Certificate of Completion.
					xi) For Emergency Works – fourteen (14) days from the issuance of the Certificate of Completion.

MPM-4 Traffic Management

MPM-4 has reference to compliances relevant to the Company's traffic management service level development and implementation (Refer **Appendix 14**).

Performance Measure Conformance

The Company shall meet with the following requirements for the compliance of this Performance Measures:

MPM Description	Management Performance Measures (MPM) and Weightings				
	Activities	Non-Conformance Weighting	Sub weighting criteria (Unit)	Road Classification	Proposed Service Level Criteria
MPM-4 Traffic Management	Submit Initial Traffic Management Plan (TMP).	4	Each day of non-receipt after deadline or each day of Traffic Management non-conformance is recorded.	All	i) Within three (3) weeks prior to commencement of any works on site.
	Submit Final Traffic Management Plan (TMP).				ii) Within one (1) week of receipt of comments from the Government's Representative.
	Comply to the approved Final Traffic Management Plan (TMP).				iii) Non compliance of to the approved Final Traffic Management Plan (TMP).

Further clarification on the MPM Service Level is provided below:

- The initial Traffic Management Plan (TMP) shall be deemed as the final Traffic Management Plan (TMP) if no comments received from the Government at least a week before the actual commencement of work.
- In case there are major observations on the Traffic Management Plan (TMP) submitted, the Company shall delay the commencement of work until the approval of final Traffic Management Plan (TMP); and
- The Company will be considered non-conforming from the time the traffic management deficiency is recorded by the Company or he is notified by the Government of their non-compliance.

Repeat MPM Non-Conformance from a Previous Consecutive Month

Where the same Management Performance Measures (MPM) is recorded in a consecutive month, the non-conformance weighting and sub weighting that will be applied will be as follows :

MPM Description	Non-Conformance Weighting	Sub-Weighting Criteria (Unit)	Road Classification	Service Level Criteria
Repeat MPM Non-conformance from previous consecutive month	4	Number of consecutive months of MPM non-conformance is repeated	All	No repeat non-conformance for the same MPM in consecutive months.

Network Performance Appraisal

Definition

- It's an assessment of the number of non-conformances recorded during the assessment cycle which is done monthly.

Monthly Non-Conformance Score

- a) Identification of non-conformances, potential non-conformances and associated rectification is an important part of PBC management and improvement process.
- b) The company is encouraged to identify non-conformance and potential non-conformances and implement improvements.
- c) Some non-conformances are more significant than others.
- d) There will always be a certain number of non-conformances
- e) It's reasonable for the conformance management system to accumulate a quantity of non-conformances in their "bucket" before the company suffers and financial penalty.
- f) The size of the "bucket" will be adjusted downward over the first eighteen (18) months, reflecting the time it will take the company to achieve the desired Service Levels.
- g) This provides sufficient time for the company to implement its strategies and resources accordingly.
- h) Once a correction/or corrective action has resulted in an individual non-conformance defect being rectified the it is removed from the monthly non-conformances score.

$$\text{MNCS} = \sum \text{NCRs} * \text{Weighting} * \text{Sub - Weighting}$$

Worked Example For Monthly Non-Conformance Score

In this example the following non-conformances were identified and reported:

- A. Two (2) records of failing to meet the agreed standard of traffic management for five (5) consecutive days.
- B. Detailed Design report or verification delivered late or not to quality standard.
- C. No consecutive repeated non-conformances of the same MPM.
- D. One (1) reported non-conformance OPM-4.
- E. Ten (10) reported non-conformances OPM-5.
- F. Fifteen (15) reported non-conformances on OPM-7.
- G. Five (5) reported non-conformances on OPM-8 for three (3) consecutive months.
- H. One (1) safety hazard to road users remains uncorrected for two (2) weeks following Government's instruction.
- I. No non-conformances reported against any RDPM.
- J. Five (5) non-conformance reported by the Government was not already identified as a non-conformance within the Company's system.

Table 1: Example of Non-Conformance Score Sheet.

Refer Note Above	Non-Conformance	Number of Non-Conformances A	Multiplication Factor		Score A x B x C
			Weighting B	Sub-Weighting C	
A	MPM-4 Traffic Management	2	4	5	40
B	MPM-6 Design and Construction Methodology	1	4	1	4
C	Repeat MPM Non-Conformance	0	4	1	0
D	OPM-4 Routine Maintenance of Bridges and Other Structures	1	2	1	2
E	OPM-5 Obstacles on the Pavement and Shoulder	10	1	1	10
F	OPM-7 Vegetation Control	15	1	1	15
G	OPM-8 Roadside Signs Maintenance	5	2	3	30
H	Road Safety Hazard Repair	1	6	2	12
I	RDPM Non-Conformance	0	5	0	0
J	OPM Generated by the Government	5	4	1	20
Monthly Aggregated Non-Conformance Score:					133

Worked Example For Monthly Non-Conformance Score

The value of the Non-Conformance Deduction each month will be calculated as follows:

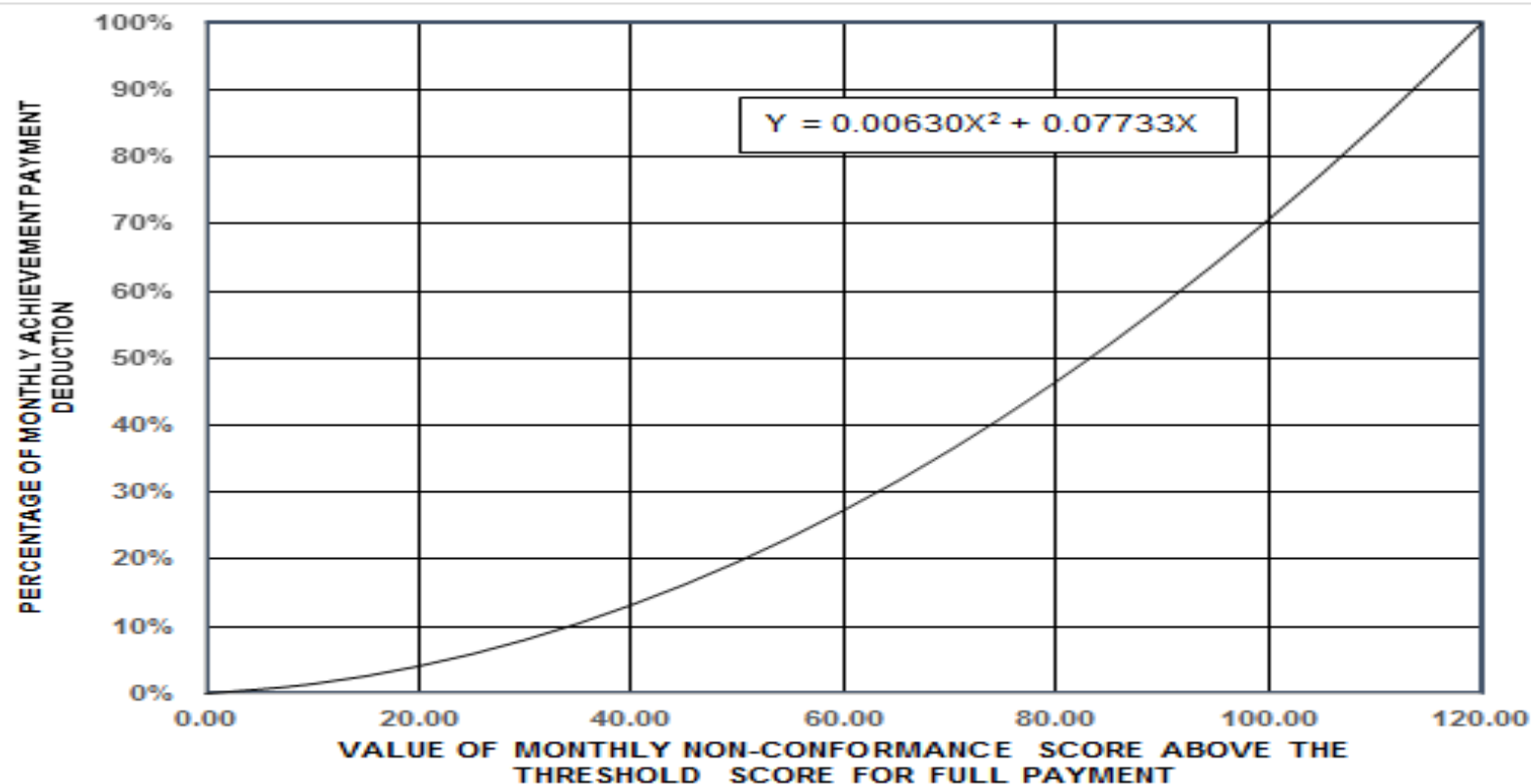
Monthly **30%** of the Amount Payable for the Routine Maintenance Works x Percentage of monthly Non-Conformance Deduction based on monthly aggregated non-conformance score for that month.

An example for such calculation shall be as follows:

Example			Monthly Rates (say)	RM	1500.00
			Length (say)	km	1000
A	Total Amount Payable (Monthly Rates x Length)			RM	1,500,000.00
B	Percentage of the Total Amount Payable Not Subject to Deduction		70%	RM	1,050,000.00
C	Maximum Deduction from the Total Amount Payable for Monthly Routine Maintenance Payment		30%	RM	450,000.00
	C1 Percentage of Deduction, say 30% of C	30% x C	30%	RM	135,000.00
	C2 Payable After Deduction	C - C1		RM	315,000.00
D	Total Amount Payable After Deduction	C2 + B		RM	1,365,000.00

Non-Conformance Deduction For The Monthly Routine Maintenance Payment

Concession Period from the Effective Date	Amount Payable from Routine Maintenance Payment Threshold Values and Percentage of Non-Conformance Deduction	
	Threshold Score for Full Payment (100% of Monthly Payable Amount)	Threshold Score for Zero (0%) Payment*
1 – 12 months	Score less than 700	Score greater than 820
13 – 18 months	Score less than 560	Score greater than 680
19 months to end of Concession Period	Score less than 320	Score greater than 440



Additional Works



Definition

Means any unplanned works not indentified at the time of signing of this Agreement or is not within the general scope of the Maintenance Works, and subsequently ordered by the Government

Service Level for Additional Works

- Pavement
- Non Pavement

ADDITIONAL WORK

Scope:

Periodic works other than planned periodic maintenance

- Periodic pavement
- Periodic non pavement

(PBC)

Additional Work
Nature of Work

Payment:

- Based on Schedule of Rates
- Actual work done
- RDPM 2&3 – on pavement work

Instructed by the Government

Under Provisional sum :
to be decided by the Government

Emergency Works



Definition

During the execution of this Agreement, it may be necessary to undertake some works to repair damages to the Roads caused directly by unforeseen natural phenomena occurring either in the Concession Area or elsewhere, but with a direct impact on the Concession Area

EMERGENCY WORK

Scope of Emergency :

- i. Unforeseen incidents
- ii. Other emergency work situations
 - flood
 - wide-spread damage
 - oil and chemical spillages
 - slope and embankment failure

Payment:

- i. Part of routine payment except when exceed threshold in routine maintenance (Provisional Sum) :
 - Arahan Kerja
 - Schedule of Rate

(PBC)
Emergency
Work
Nature of Work

Threshold in:

- i. Road deformation
- ii. Falling Trees
- iii. Clean of debris
- iv. Non structure repair
- v. Repair of earth drains
- vi. Aggregated repair of road pavement
- vii. Aggregated repair of pavement surface

Length:

791.11 KM

Obligations of the Company during Emergency Events

- The Company will, during the execution of Emergency Works continue to be responsible for assuring the normal Service Levels on all roads included in this Agreement. In particular, the Company will do everything reasonably possible to ensure the normal use of all the Roads under this Agreement, including the sections affected by emergencies.
- If road traffic has been interrupted because of an emergency, the Company will take the measures necessary (i) to provide necessary Traffic Management Plan and (ii) to reopen the road to traffic in the shortest time possible. This relates particularly to trees or other objects which may have fallen on the Roads and removal of debris.

Minor Repairs and Consequential Damages

Notwithstanding the above, if the works necessary to remedy damages caused by any “Unforeseen Natural Phenomena” and other agreed Emergency Works Situations are below the specified threshold values, the Company shall carry out those works as part of his Routine Maintenance Works obligations and without having the right to invoke the provision of this Agreement concerning Emergency Works. In these cases, the consent of the P.D. is not needed and the Company will simply carry out the works on its own initiative. It will nevertheless inform the P.D. of the damages that have occurred and the remedial measures taken.

The threshold values for minor repairs as a result of a **single confirmed Emergency Event** are as shown in the table below:

Activity	Unit	Maintenance Quantity Threshold
Road formation scour/subsidence	m ³	200
Removal of fallen trees and or branches with minimum trunk diameters Greater than 0.5m	No.	5
Clean-up of flood debris and silt including slip material	m ³	100
Non-structural repair of culverts with an equivalent diameter of less than, or equal to 1200mm diameter.	No.	5
Repair of earth drains or surface water channels due to scour	m	250
Aggregated repair of road pavement	m ²	500
Aggregated repair of pavement surface Defects	m ²	500

ASSESSMENT & INSPECTIONS



PBC Performance Audit

- 10% of work length/month 80KM
- 5 KM length/section
- 16 audit sections
- Minimum 1 per district

Scope:

- OPM 1-15 – exclude OPM 6

PBCMS
Tools

- Company self audited
- JKR Audit on Audit Results + Non reported NC

Score:

- NC weighting & sub weighting
- Recurrence of NC – double weighting

Routine Contract Inspections to be Carried Out by the Company

The Company shall carry out regular patrols to ensure that all assets within the ROW including, but not limited to, all road surfaces, bridges, culverts, signs, vegetation, guardrails, barriers, marker pegs, pavement markings and footpaths are inspected on the following frequencies:

The nature, date and location of all defects must be recorded, and the Company must repair or rectify all defects within the specified Maximum Time for Defect Repair, irrespective of whether date, comprise a non-conformance or not. Any breach of this clause will be deemed a non-conformance under MPM-1.

Inspection Type	Inspection Frequency
Routine Patrols	Protocol Roads and Primary Roads: Twice a week and during periods of heavy rainfall Secondary, Federal Institutional, Industrial, FELDA Access and Felda Internal Roads: Once a week and immediately after periods of heavy rainfall.
Combined Day-time Inspections	Protocol and Primary Roads: Every two (2) months Secondary, Federal Institutional, Industrial, Felda Access and Felda Internal Roads: Every six (6) months
Combined Night-time Inspections	Protocol and Primary Roads: Every six (6) months Secondary, Federal Institutional, Industrial, Felda Access and Felda Internal Roads: Every Twelve (12) Months
Bridges and culverts – inspection	(i) Every twelve (12) months (ii) Within two (2) days following the date of an agreed flood event
Emergency / Incident	Immediately following notification.
* Combined Inspection: Carried out with Government / P.D. (refer item 1.6 of this Appendix) unless agreed otherwise.	

Maximum Time For Defects Repair

- The nature , date and location of all defects must be recorded, and the compamy must repair or rectify all defects within the specified Maximum Time for Defect Repair, irrespective of whether date, compromise a non conformance or not.

*** Any breach of this clause will be deemed a non conformance under MPM-1

Maximum Time For Defect Repair

Nomenclature	Operational Performance Measures (OPM)	Maximum Time for Defect Repair (During the Phase-in Period)	Maximum Time for Defect Repair (For the remainder of the Concession Period)
OPM-1	Pavement Maintenance excluding Potholes	3 Months	1 Month
OPM-1	Potholes	24 Hours	24 Hours
OPM-2	Unpaved Shoulder Maintenance	6 Months	3 Months
OPM-3	Drainage Maintenance	6 Months	3 Months
OPM-4	Routine Maintenance of Bridges and Other Structures	6 Months	3 Months
OPM-5	Obstructions on the Pavement Surface & Shoulders (non-hazardous)	24 Hours	24 Hours
OPM-6	Incident Response & Emergency Works Response	Not Applicable	Not Applicable
OPM-7	Vegetation Control	1 Month	1 Month
OPM-8	Road Signs Maintenance	3 Months	1 Month
OPM-9	Raised Pavement Markers	3 Months	1 Month
OPM-10	Pavement Markings	6 Months	2 Months
OPM-11	Kerbing for Traffic Island, Turning Bay, Footpath, Motorcycle Lane and Access	6 Months	2 Months
OPM-12	Longitudinal Barrier Maintenance (Guardrails)	3 Months	1 Week
OPM-12	Longitudinal Barrier Maintenance (Wire ropes)	3 Months	2 Weeks
OPM-12	Longitudinal Barrier Maintenance (Crash cushions)	3 Months	3 Weeks
OPM-13	Other Railing, Hand Rail, and Pedestrian Barrier Maintenance	3 Months	1 Month
OPM-14	Displacement Marker Post Maintenance	3 Months	1 Month
OPM-15	Footpath Maintenance	24 Hours	24 Hours

Q & A



SEKIAN, TERIMA KASIH

