

MAINTENANCE OF HIGHWAY STRUCTURES BY THE HIGHWAYS DEPARTMENT

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1. The Highways Department (HyD) is responsible for the maintenance of public roads and associated facilities, including highway structures, under its purview. According to HyD, a highway structure is a structure designed and constructed for carrying vehicles, bicycles and pedestrians over, under or through a physical obstruction or hazard, and may be a vehicular bridge, a footbridge, an underpass or a subway. In addition, covers to walkways, noise barriers and enclosures, sign gantries and culverts are also classified as highway structures. As at 31 December 2025, HyD administered 9 road maintenance contracts to safeguard the safety and reliability of the public road network. According to the management and maintenance (M&M) provisions of the contracts, contractors are required to conduct inspections of highway structures and undertake structural maintenance. When maintenance works are required beyond the scope of M&M provisions, HyD may separately issue task orders and pay the contractors for the non-routine maintenance works. In 2024-25, \$377 million was incurred by the Structure Maintenance Teams of HyD on the maintenance works for highway structures under road maintenance contracts, including \$104 million for inspection and routine maintenance works, and \$273 million for non-routine maintenance works. The Audit Commission (Audit) has recently conducted a review to examine the work of HyD in the maintenance of highway structures.

Inspection and routine maintenance works

2. *Need to remind HyD's staff to thoroughly review the inspection programmes submitted by contractors.* According to the contract provisions, contractors should submit the inspection programmes for 6-monthly inspections, general inspections and principal inspections (hereinafter referred to as routine inspections) for HyD's verification. Audit analysis of the inspection programmes for the 2,831 vehicular bridges and underpasses, footbridges and subways in the Electronic Maintenance Management System (EMMS) for the period from April 2022 to September 2025 revealed the following inadequacies in the inspection programmes:

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- (a) ***Some required inspections not scheduled.*** 11 (0.4%) highway structures had not been scheduled for general inspections which required close visual inspection at two-year intervals during the period. For the 755 highway structures which required principal inspections as they reached their ages of 10, 20, 30, 40 or so forth during the period, 11 (1.5% of 755) had not been scheduled for principal inspections which required in-depth check on the structural integrity of the highway structures; and
- (b) ***Intervals of inspections not meeting the stipulated requirement.*** According to the contract provisions, contractors should plan and programme inspections on highway structures such that the interval between two 6-monthly inspections or one 6-monthly inspection and one general inspection or principal inspection is 5 to 7 months. Audit noted that, among the 13,165 routine inspections scheduled during the period, the inspection dates of 20 (0.2%) inspections were more than 7 months after the previous inspections, ranging from 8 to 12 months (i.e. with delays ranging from 1 month to 5 months) (para. 2.5).
3. ***Need to remind contractors to submit inspection reports in a timely manner.*** According to the contract provisions, contractors are required to submit inspection reports within 7 days after the completion of the inspections. Audit examined the EMMS records of the 5,984 routine inspections for the 1,856 vehicular bridges and underpasses, footbridges and subways conducted under the 6 contracts commencing in or after April 2022, and found that the inspection reports of 784 (13%) routine inspections were submitted more than 7 days after the inspection dates, with delays ranging from 1 day to 192 days (averaging 17 days). Moreover, among these late submissions, HyD had only issued default notices to the concerned contractors for 453 (58% of 784) cases (paras. 2.7 and 2.8).
4. ***Room for improvement in monitoring the rectification of defects.*** Audit analysed the EMMS records for the 10,185 defects identified by the contractors from the routine inspections conducted for the 2,831 vehicular bridges and underpasses, footbridges and subways during the period from April to September 2025 and noted that:

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- (a) ***Rectification of defects not recorded as completed in EMMS.*** Rectification of 1,859 (18% of 10,185) defects had not yet been recorded as completed as at 31 December 2025. Audit could not ascertain the progress/completion of rectification of these defects; and

 - (b) ***Rectification of defects recorded as completed in EMMS.*** Rectification of 8,326 (82% of 10,185) defects were recorded as completed as at 31 December 2025. Of which:
 - (i) ***Dates of completion of rectification after due dates.*** For 2,121 (26% of 8,326) defects, the dates of completion of rectification recorded in EMMS were after the due dates for rectification, with time elapsed from the due dates ranging from 1 day to 96 days (averaging 5 days). Since the dates of completion of rectification could not be backdated in EMMS, the dates of completion recorded might not reflect the actual dates of completion and could not show whether the rectifications of defects were completed in a timely manner or had been delayed; and

 - (ii) ***Due dates for rectification and/or dates of completion of rectification not recorded.*** For 257 (3% of 8,326) defects, due dates for rectification and/or dates of completion of rectification were not recorded in EMMS. Audit could not ascertain if these defects had been rectified within the stipulated timeframe (para. 2.12).
5. ***Need to ensure that the rectification completion records uploaded to EMMS by the contractors comply with the contract provisions.*** According to the contract provisions, upon the completion of rectification works, contractors should take photographic records showing that the defects have been rectified. The locations of the defects should be identifiable from the photographs and the photograph-taking dates should be shown on the photographs. Audit sample checked the EMMS records for 126 rectified defects within the scope of M&M provisions (involving 30 routine inspections carried out during the period from April to September 2025) and noted that for some defects, the photographs showing rectification of defects had not been uploaded to EMMS or dated, or rectification could not be identified in the photographs (para. 2.15).

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6. **Monitoring of contractors' performance.** Payments for M&M works are performance-linked. HyD conducts Engineer's inspections (EIs) and Engineer's audits (EAs) as independent checking procedures in monitoring the contractors' performance (para. 1.5). Audit examination revealed the following areas for improvement:

- (a) **Room for improvement in conducting EIs.** According to HyD's Maintenance Administration Handbook, HyD's staff should plan and carry out EIs. They would input the records of EIs and upload the inspection photographs to the Road Maintenance Monitoring System (RMMS) as an evidence of EIs carried out. For any defects identified during EIs, RMMS provides a function to generate a notification form of defect (NF) automatically. However, Audit noted that records of some EIs carried out for M&M works or cleansing work were mistakenly input as site check records. In addition, the first phase of RMMS did not provide statistics by works nature for EI records related to M&M works and cleansing work (paras. 2.23 and 2.24); and

- (b) **Room for improvement in conducting EAs.** HyD's staff or appointed consultants plan and conduct audits on M&M works carried out by the road maintenance contractors. Audit sample check of EAs carried out for the 2 road maintenance contracts under a consultancy agreement with the agreement period from March 2024 to August 2025 revealed the following inadequacies:
 - (i) while the consultant should carry out EAs for all the 77 general inspections, principal inspections and special inspections on the vehicular bridges, footbridges and underpasses on red or pink routes, only 60 EAs (i.e. shortfall of 17 EAs) were conducted during the period;

 - (ii) of the 151 NFs issued to the contractors, 76 had been issued 1 day to 67 days (averaging 13 days) after conducting EAs. Due to the late issuance of NFs by the consultant, the due dates for rectification were extended accordingly; and

 - (iii) according to the RMMS records, of 89 NFs issued by the consultant, the contractor had failed to rectify the defects within the stipulated timeframe for 9 (10%) NFs. Of these 9 cases, default notices had

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not been issued for 8 cases as at 31 December 2025 (paras. 2.26 and 2.27).

Non-routine maintenance works

7. *Need to regularly review the status of projects.* From time to time, non-routine maintenance of highway structures is carried out to rectify defects found on the highway structures which are beyond the scope of M&M provisions or to implement the Government's initiatives. For works of non-recurrent nature to be funded by the Capital Works Reserve Fund (CWRF), HyD includes them in the full list of items proposed to be funded by CWRF Block Allocations. According to HyD, as at 30 September 2025, the progress of the 83 projects related to the non-routine maintenance of highway structures under the purview of HyD's Structure Maintenance Teams in the full list of items proposed to be funded by CWRF Block Allocations for 2025-26 (hereinafter referred to as "the list for 2025-26") submitted to the Legislative Council in January 2025 was as follows:

- (a) 62 (75%) projects had been completed, among which 3 (5% of 62) projects were completed 5 to 15 months (averaging 9 months) after the proposed completion dates stated in the list for 2025-26;
- (b) 8 (9%) projects were in progress, among which the proposed completion dates were in the first half of 2025 for 4 (50% of 8) projects and in the second half of 2023 for 1 (13% of 8) project as stated in the list for 2025-26; and
- (c) 13 (16%) projects were still under planning, among which the proposed completion dates of 7 (54% of 13) projects were before 30 September 2025 (paras. 3.3 and 3.4).

8. *Need to keep under review the lists of defects for scheduling non-routine maintenance works.* According to HyD, bearings and vehicle parapets are essential components to ensure the long-term proper functioning of bridges and to protect road users in case of traffic accidents respectively. Audit reviewed the lists of defects as at 31 December 2025 and noted that 24 defects (involving 10 highway structures) related to bearings or vehicle parapets with relatively high severity levels were identified during inspections from April 2022 to September 2024. The rectification works of these defects were of non-recurrent nature and required works beyond the

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scope of M&M provisions. Up to 31 January 2026, the rectification works of 8 (33%) defects (involving 6 highway structures) found in bearings were not included in the list for 2025-26 and task orders for rectifying these defects were yet to be issued. According to HyD, the common defect of these bearings was surface rusting which would not pose any imminent danger to the bridge structure and necessary interim remedial works were carried out in February 2026 to restore the bearing conditions (paras. 3.6 and 3.7).

9. ***Need to remind HyD's staff to properly maintain the records of site checks/visits.*** According to HyD's Maintenance Administration Handbook, in order to monitor the progress of works, works supervisors should conduct daily site checks on the progress and quality of works, and record the observations. Inspectors of Works and Engineers/Chief Technical Officers should also conduct site visits at least once per week and once per two weeks respectively for periodic checking. Audit selected 40 task orders with payments made during the period from April 2022 to September 2025 for examination. However, up to 28 February 2026, the works supervisors' site check records of 4 (10%) task orders had not been provided for Audit's inspection. As regards the compliance issue of periodic checking, HyD informed Audit that unless Inspectors of Works and Engineers/Chief Technical Officers identified specific issues or noteworthy observations which warranted documentation for a task order, there was no documentation for site visits in any centralised register. In Audit's view, the fact that the records of site visits have not been fully maintained is less than satisfactory (paras. 3.12 to 3.15).

10. ***Room for improvement in submitting or collecting relevant completion documents for finalisation of task orders.*** As the contractor is paid for the works done, measurement of the works done under a task order is essential for payment purpose. Audit sample examination of the relevant records of 50 completed task orders with payments made during the period from April 2022 to September 2025 revealed that:

- (a) while the contractors should submit the hidden works records to the Regional Offices within 14 days after completion of a task order, for 23 (46%) task orders, the contractors took more than 14 days to submit the relevant records, ranging from 16 to 671 days (averaging 139 days);
- (b) while the Regional Offices should submit the completion data and relevant documents to the Maintenance Accounts and Quantity Surveying Unit

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within 60 days after completion of a task order, for 33 (66%) task orders, the Regional Offices took more than 60 days to submit the completion data and relevant documents, ranging from 61 to 700 days (averaging 175 days);

- (c) while the contractors should measure the works done and enter the measurement into a dimension book for submission to the Maintenance Accounts and Quantity Surveying Unit within 90 days after completion of a task order, for 30 (60%) task orders, the contractors took more than 90 days to submit the dimension books; and
- (d) among the 47 (94%) completed task orders with relevant documents submitted and outstanding issues cleared, the procedures of receiving the relevant documents and clearing outstanding issues had taken 24 to 2,229 days (averaging 263 days) after completion of the task orders (paras. 3.27 and 3.28).

Other related issues

11. *Need to critically evaluate the reasonableness of non-schedule rates for beautification works.* In 2024 and 2025, as part of the government-wide district governance work on improving environmental hygiene and beautifying the cityscape, HyD carried out refurbishment and beautification works of 36 footbridges/subways across the 18 districts. For 16 footbridges/subways, since the Schedule of Rates stipulated in the road maintenance contracts did not include applicable rates for some works elements, quotations from sub-contractors were invited and non-schedule rates were adopted. Audit examination of the evaluation process of quotations regarding the beautification works of the 16 footbridges/subways revealed that:

- (a) the unit rates calculated based on the prices quoted by the sub-contractors varied significantly from \$165 to \$3,429 per square metre. According to HyD, the significant variation was due to the different nature and scope of beautification works;
- (b) in assessing the reasonableness of the quoted price for some beautification works, the ranges of the benchmark unit rates used by HyD based on similar past works were wide;

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- (c) certain unit rate assessments relied on benchmarks from dissimilar works; and
- (d) the beautification works of one structure had its unit rates for specific works elements benchmarked separately against comparable works, whereas unit rates for the beautification works of other structures comprising multiple works elements were evaluated for the works as a whole (paras. 4.3, 4.6 and 4.7).

12. ***Need to enhance maintenance procedures for beautification works of highway structures.*** Since 2017, HyD has been drawing up thematic designs each year for selected bridges or subways with high pedestrian flow at prominent locations. In December 2025 and January 2026, Audit conducted field inspections of 10 footbridges/subways with beautification works previously carried out and noted defects in 8 of them. Defects identified comprised peeling paint and wallpapers, water stains and graffiti. Although some of these defects had been reported by the contractors to HyD, up to 31 January 2026, no separate task orders had been issued to contractors to rectify them (para. 4.10).

13. ***RMMS.*** HyD has developed and implemented RMMS since the end of 2022 to digitalise the monitoring and administration of highway structures maintenance works involving task orders. The pilot stage and customisation stage of the first phase of RMMS were first launched in December 2022 and May 2024 respectively (para. 4.14). Audit found that there was scope for improvement, as follows:

- (a) ***Need to ensure the completeness of information and timely processing of forms in RMMS.*** According to the workflow of the first phase of RMMS, HyD's staff needs to complete site check records in the system for their supervisors' checking and review the hidden works records and completion reports submitted by the contractors in RMMS before certifying the completion of works. Audit sample check of 20 task orders of the 9 road maintenance contracts with the final payments made in the third quarter of 2025 revealed that:
 - (i) 4 (20%) task orders were not recorded in RMMS; and

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- (ii) some records of the remaining 16 (80%) task orders were not found in RMMS while some remained in draft or pending approval status (paras. 4.16 and 4.17); and
- (b) *Need to ensure that a system security audit is completed prior to implementation of a system.* According to the Practice Guide for Security Risk Assessment & Audit issued by the then Office of the Government Chief Information Office (currently known as the Digital Policy Office), a security audit should be performed prior to the implementation or major enhancement of a system. The agreement between HyD and the developer of the first phase of RMMS stipulated that an information technology security audit report should be submitted to HyD two weeks before commissioning of the customised RMMS (i.e. May 2024). However, the developer had only engaged an information technology company to conduct a security audit for the system in November 2025 and completed the security audit report in mid-February 2026 (paras. 4.19, 4.20 and 4.21(b)).

Audit recommendations

14. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has recommended that the Director of Highways should:**

Inspection and routine maintenance works

- (a) **remind HyD's staff to thoroughly review the inspection programmes submitted by contractors to ensure that the frequency and intervals of inspections are conducted in accordance with the contract provisions (para. 2.9(a));**
- (b) **remind contractors to submit the inspection reports in a timely manner (para. 2.9(b));**
- (c) **continue to issue default notices for late submission of inspection reports according to the contract provisions (para. 2.9(c));**
- (d) **take measures to ensure that due dates for rectifications of defects within the scope of M&M provisions and dates of completion of**

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rectification of these defects are properly recorded in EMMS by the contractors (para. 2.16(a));

- (e) ascertain whether defects within the scope of M&M provisions had been rectified within the stipulated timeframe and continue to issue default notices for late rectification of defects according to the contract provisions (para. 2.16(b));
- (f) take measures to ensure that the rectification completion records uploaded to EMMS by the contractors comply with the contract provisions (para. 2.16(d));
- (g) take measures to ensure that EIs are conducted in accordance with the Maintenance Administration Handbook with proper documentation (para. 2.29(a));
- (h) remind HyD's staff to input the EI records correctly in RMMS in order to generate NFs when necessary (para. 2.29(b));
- (i) take measures to ensure that the consultants carry out EAs in accordance with the consultancy agreements. In particular, the consultants have to:
 - (i) carry out EAs on all general inspections, principal inspections and special inspections on the vehicular bridges, footbridges and underpasses on red or pink routes;
 - (ii) issue NFs showing the defects to the contractors as soon as practicable; and
 - (iii) issue default notices for non-compliance of NFs in a timely manner (para. 2.29(c));

Non-routine maintenance works

- (j) regularly review the status of projects in the full list of items proposed to be funded by CWRF Block Allocations (para. 3.9(a));

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- (k) **keep under review the lists of defects for scheduling non-routine maintenance works (para. 3.9(b));**
- (l) **remind HyD's staff to properly maintain the records of site checks/visits (para. 3.24(a));**
- (m) **take measures to ensure that the site checks/visits are conducted at the frequencies stipulated in the Maintenance Administration Handbook (para. 3.24(b));**
- (n) **remind contractors to submit hidden works records and dimension books in a timely manner for processing payments (para. 3.33(b));**
- (o) **step up efforts in improving the timeliness of:**
 - (i) **compiling the completion data and gathering the relevant documents of completed non-routine maintenance task orders; and**
 - (ii) **clearing outstanding issues of completed non-routine maintenance task orders with the contractors (para. 3.33(d));**

Other related issues

- (p) **critically evaluate the reasonableness of non-schedule rates for beautification works (para. 4.12(a));**
- (q) **consider incorporating commonly used items in beautification works into the Schedule of Rates for future road maintenance contracts where appropriate (para. 4.12(b));**
- (r) **enhance maintenance procedures for the beautification works of highway structures (para. 4.12(c));**
- (s) **take measures to ensure that the information in RMMS is complete and all required documents are reviewed/approved in a timely manner in RMMS (para. 4.26(a)); and**

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- (t) **take measures to ensure that a system security audit is completed prior to implementation of a system (para. 4.26(b)).**

Response from the Government

15. The Secretary for Transport and Logistics welcomes the audit recommendations and supports the proposed follow-up actions of HyD. The Director of Highways agrees with the audit recommendations.