

HIGHWAYS DEPARTMENT: MAINTENANCE OF PUBLIC FOOTPATHS

Executive Summary

1. The Highways Department (HyD) is responsible for conducting inspections, planning and managing the maintenance programme, supervising maintenance works and handling public complaints about public footpaths. As of June 2021, the total length of public footpaths maintained by HyD was approximately 2,600 kilometres. According to the management and maintenance (M&M) provisions of HyD's local road maintenance contracts, contractors are required to conduct inspections and routine maintenance works for road surfaces and related street furniture (e.g. railings, street name plates and traffic signs) of public roads (including footpaths) and will be paid a monthly fee. According to HyD, in 2020-21, the M&M payment under the local road maintenance contracts included \$18 million for public footpaths. For non-routine maintenance and rehabilitation works not covered by the M&M provisions, HyD may issue works orders and pay the contractors to carry out such works. In 2020-21, works orders at a total cost estimate of \$151 million were issued for non-routine maintenance and rehabilitation works of public footpaths. The Audit Commission (Audit) has recently conducted a review to examine issues relating to maintenance of public footpaths by HyD with a view to identifying areas for improvement.

Inspection and routine maintenance works

2. According to HyD, inspection and routine maintenance works under the local road maintenance contracts mainly comprise road routine inspections, road detailed inspections, the associated rectification works on the defects covered by the M&M provisions and cleansing of street furniture. From April 2020 to March 2021, HyD administered six local road maintenance contracts (para. 2.2).

3. *Need to enhance checking on the submission of inspection reports.* According to contract provisions, the contractors are required to conduct routine inspections and detailed inspections on all roads within designated contract areas maintained by HyD. Audit analysed the Electronic Maintenance Management System

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(EMMS — a database established by the contractors for maintaining records of inspection and routine maintenance works) records of 101,566 inspection reports submitted by the contractors for the period from April 2020 to March 2021 and revealed the following areas for improvement (paras. 1.5(b) and 2.5):

- (a) ***Inadequate coverage of inspections.*** From April 2020 to March 2021, of the 3,312 public roads maintained by HyD, 15 roads had not been inspected nor included in the inspection programmes submitted by the contractors. For 3 roads, the contractors only submitted detailed inspection reports but not routine inspection reports during the period (para. 2.5(a)); and
 - (b) ***Inadequacies in submitting inspection reports.*** For 15,997 (16%) inspection reports, the submission dates were not recorded in EMMS. According to HyD, in two contracts, there were system bugs in EMMS, and in another contract, the contractor would usually submit hard copies of inspection reports to HyD first and upload the reports to EMMS by batches at a later time (para. 2.5(b)).
4. ***Need to improve the monitoring of routine maintenance.*** According to contract provisions, majority types of defects require rectification within 48 hours. Audit examination of EMMS records of 513 completion reports submitted by the contractors in 12 districts (for the inspections carried out in June 2020) found that in 32 (6%) cases, the defect rectification works were not completed within the stipulated time limits with delays ranging from 1 to 48 days (averaging 8 days). Of these 32 cases, the contractors did not have valid reason for not completing the works within time limits in 31 cases (paras. 2.6 and 2.7).
5. ***Independent checking on contractors' work.*** Payments for M&M works were performance-linked. HyD conducts Engineer's audits (EAs) and Engineer's inspections (EIs) for measuring and monitoring the contractors' performance in routine inspections, detailed inspections and cleansing of street furniture (paras. 1.7 and 2.12). Audit examination revealed the following areas for improvement:
- (a) ***EAs.*** Audit scrutinised the records of the 12 districts (see paragraph 4) for EAs from July to December 2020 and found that:

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- (i) in 11 cases, HyD had informed the contractors more than 24 hours before conducting EAs, contrary to the requirement stipulated in the contracts (para. 2.13(a)); and
 - (ii) in 166 cases, there was no documentary record of notifying the contractors of the EA results (para. 2.13(c)(iii)); and
- (b) **EIs.** HyD's computer system did not maintain sufficient information (the number of active sites undergoing maintenance works) for ascertaining the extent of compliance on the frequency of conducting EIs (at least once a week) as stipulated in HyD's guidelines (para. 2.14(a)).
6. ***Need to make use of EMMS for maintaining comprehensive inspection and maintenance records.*** According to contract provisions, maintenance history to be kept in EMMS includes those maintenance works carried out by the contractors or records of previous maintenance works supplied by HyD. Audit noted that some maintenance records for public roads such as completion reports for rectification of defects under EAs were not centrally kept in EMMS, which might not facilitate the compilation of maintenance records for planning rehabilitation works (paras. 2.21 to 2.23).
7. ***Audit's field inspections on footpaths.*** In July and August 2021, Audit conducted two rounds of field inspections to 35 footpaths in five districts which were subject to routine inspection once every seven days. Audit found that 183 defects (97% of 189 defects identified during the first round of Audit's field inspections) had not been identified in the routine inspections conducted by the contractors. Of the 183 defects, 14 (8%) defects might cause dangers to road users (paras. 2.29 and 2.30).
8. ***Non-compliance with routine inspection frequency.*** According to contract provisions, for 774 footpaths of high significance (e.g. located within areas of pedestrianisation scheme), contractors are required to conduct routine inspections with higher frequency (every 7 days or 1 month). Audit noted that the frequencies of these routine inspections had not been fully complied with in 16 (2%) of the 774 footpaths (para. 2.33).

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Non-routine maintenance and rehabilitation works

9. *Administration of non-routine maintenance works for public footpaths.* HyD issues works orders to the contractors for carrying out non-routine maintenance works (including rectification of defects not covered by M&M provisions or other repair works) as and when necessary. Under the six local road maintenance contracts administered by HyD as of March 2021, 2,447 works orders at a total cost estimate of \$151 million relating to non-routine maintenance works of public footpaths were issued during the period from April 2020 to March 2021 (paras. 3.3, 3.4 and 3.6). Audit examination of the works orders revealed the following areas for improvement:

- (a) *Implementation progress of works orders not timely recorded.* HyD adopts a web-based application, namely the Maintenance Accounting and Information System (MAINS), to handle the administration of the works order process and related payments. As of June 2021, Audit analysis of the MAINS records showed that the actual dates of completion for 310 (13% of 2,447) works orders were not available in MAINS. According to HyD, 289 (93% of 310) works orders had been completed on time but their actual completion dates had not been inputted into MAINS because compilation of works orders documents for finalisation and payment purpose was still in progress (paras. 3.4 and 3.6); and
- (b) *Need to strengthen the monitoring and checking of works.* Audit selected 120 works orders (i.e. 5% of the 2,447 works orders) for examination and revealed the following areas for improvement:
 - (i) *Late submission of reports on completion of works by contractors.* Of the 120 works orders, contrary to contract provisions, the contractors failed to submit the reports within two days after completion of works for 91 (76%) works orders, with delays ranging from 1 to 145 days (averaging 20 days) (para. 3.10(b)); and
 - (ii) *Delay in checking completion of works by HyD.* According to HyD's Maintenance Administration Handbook (MAH), after the contractors reported completion of works, HyD will arrange its staff to check whether the works have been satisfactorily completed within two working days from the date of receipt of the reports on completion of works from the contractors. Of the 120 works orders, the dates of checking by HyD staff concerned were not stated in the

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reports on completion of works in 18 (15%) works orders. For the remaining 102 (85%) works orders, there were delays in checking by HyD staff in 41 (40% of 102) works orders, with delays ranging from 1 to 84 working days (averaging 17 working days) (para. 3.10(c)).

10. ***Need to ensure timely submission of dimension books by contractors.*** According to MAH, the contractor shall submit a dimension book for a works order to HyD within 90 days of completion of the works. HyD shall check the accuracy of the measurements in the dimension books before making a final payment and finalising the works order. As of June 2021, 497 works orders relating to non-routine maintenance works of public footpaths for three completed local road maintenance contracts had not yet been finalised. Among these, the dimension books of 360 (72%) works orders (with a total cost estimate of \$54 million) were still outstanding from the contractors, with delays in submission ranging from 1 to 2,050 days (averaging 353 days) (paras. 3.11 to 3.13).

11. ***Planning of rehabilitation works for public footpaths.*** From April 2015 to March 2021, HyD approved 228 rehabilitation projects for public footpaths (including reconstruction or relaying of paving blocks on footpaths), with a total approved estimate of \$286 million, which was funded by a Block Vote under the Capital Works Reserve Fund (CWRP). Audit examination of 20 projects (each with approved estimate of \$3 million or above, totalling \$72 million) revealed the following areas for improvement (paras. 3.17 and 3.18):

- (a) ***Delays in completing rehabilitation projects.*** As of June 2021, 6 of the 20 projects had been completed and 14 projects were in progress. For the 6 completed projects, there were delays ranging from 1 to 12 months (averaging 6 months) in completing 4 (67%) projects. For the rehabilitation project with the longest delay of 12 months, HyD took a longer-than-expected time to coordinate/liaise with local schools and residents on the temporary traffic arrangement for the footpath reconstruction works. Audit found that HyD had not carried out public consultation on the temporary traffic arrangement at the planning stage before seeking funding approval (para. 3.18(a));

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- (b) ***Over-estimation of project costs.*** Audit comparison of the approved estimates with the actual expenditures incurred up to June 2021 for the 6 completed projects (see (a)) revealed that the project costs had been over-estimated in all cases, ranging from 27% to 200% (para. 3.18(b)); and

- (c) ***Delays in releasing unused funds from completed rehabilitation projects.*** According to HyD guidelines, upon completion of the works funded by the Block Vote under CWRP, accounts should be finalised and approval to delete the items from the Block Vote should be sought as early as practicable. Audit noted that HyD took 5 to 31 months to delete the 6 completed projects (see (a)) from the Block Vote after making final payment to the contractors. Furthermore, in 4 (67% of 6) completed projects, as of June 2021 (i.e. 12 to 24 months after respective approvals to delete the projects from the Block Vote were obtained), HyD staff had not yet released the unused funds in MAINS, resulting in \$5 million unused funds being locked up (para. 3.18(c)).

Other related issues

12. ***Design and choice of paving materials.*** According to HyD, most of the footpaths in Hong Kong are paved with either concrete or paving blocks. Audit's field inspections in July and August 2021 found that 13 footpath locations paved with paving blocks and situated at the vehicular over-runs had been damaged (including damaged paving blocks and loosened paving blocks), which might pose a safety threat to pedestrians. In Audit's view, HyD needs to review the design of paving materials for footpath locations subject to heavy loading (paras. 4.2 and 4.5).

13. ***Provision of pedestrian railings.*** In the 2017 Policy Address, the Government pledged to encourage people to walk more and rely less on motorised transport to foster a pedestrian-friendly environment. To pursue the policy objective of enhancing walkability, the Transport Department (TD) reviewed the provision of pedestrian railings and issued guidelines in 2017. In November 2019, in order to reduce street cluttering and release more road space for pedestrians on footpaths, TD promulgated a "minimal approach" in the provision of pedestrian railings, which aimed at stripping away excessive railings not bringing value to the policy of enhancing walkability of the pedestrian environment (paras. 4.12 to 4.14 and 4.16). Audit examination of TD's work on decluttering of excessive pedestrian railings revealed the following areas for improvement:

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- (a) ***Need to improve recording of the work of reviewing and decluttering existing pedestrian railings.*** To take forward the change in policy over the provision of pedestrian railings, TD in consultation with HyD would draw up a priority list for review on whether existing pedestrian railings should be retained or removed. Since the third quarter of 2019, TD has commenced reviewing the pedestrian railings across the territory and progressively arranged with HyD to remove unnecessary railings. According to TD, it does not maintain a dedicated database to record the review of railing provisions. Audit considers that TD should consider improving the recording of the work of reviewing and decluttering existing pedestrian railings to facilitate management monitoring and review (e.g. by compiling a list of locations in which the railings have been reviewed or removed without compromising safety on a yearly basis) (para. 4.18); and
- (b) ***Challenges encountered in removing excessive railings.*** Audit's research on the Internet found that some proposals submitted by TD to remove railings had not materialised. According to TD, during consultation there were different views on whether railings should be retained or removed. Audit noted that it might be necessary to retain existing railings in locations where the pedestrian flow and vehicular traffic were high. Audit also found that at some road sections in which railings had been removed, there was jaywalking of pedestrians (paras. 4.19 and 4.20).

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:**

- (a) **the Director of Highways should:**

Inspection and routine maintenance works

- (i) **ascertain the reasons for the omissions by contractors to conduct road inspections and exercise due care in vetting the inspection programmes submitted by contractors to ensure that all public roads maintained by HyD are covered by contractors' inspections (para. 2.10(a) and (b));**

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- (ii) **take measures to rectify the system bugs in EMMS of the two local road maintenance contracts, and in administering local road maintenance contracts in future, consider requiring the contractors to submit the inspection reports and upload them to EMMS in a timely manner (para. 2.10(c)(i) and (d));**
- (iii) **take measures to ensure compliance with contract requirements on defect rectifications by contractors (para. 2.10(c)(ii));**
- (iv) **remind HyD staff to strictly follow HyD's requirements on conducting EAs and notify the contractors of the EA results in a timely manner (para. 2.16(a) and (b));**
- (v) **compile statistics for monitoring the compliance with the requirements of conducting EIs (para. 2.16(c));**
- (vi) **enhance the functions of EMMS for maintaining comprehensive inspection and maintenance records for public roads (para. 2.26(b));**
- (vii) **take measures to improve the routine inspections of footpaths and ensure that the contractors comply with the routine inspection frequency for footpaths of high significance (para. 2.34(a) and (c));**

Non-routine maintenance and rehabilitation works

- (viii) **take measures to ensure that information on the implementation progress of works orders is input into MAINS in a timely manner (para. 3.15(a));**
- (ix) **take measures to ensure that reports on completion of works under works orders are timely submitted by contractors and remind HyD staff to conduct checking on works completion within the time limit stipulated in MAH (para. 3.15(d) and (e));**
- (x) **step up measures to ensure timely submission of dimension books by contractors (para. 3.15(f));**

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- (xi) **in implementing rehabilitation projects in future, consult the relevant stakeholders on temporary traffic/pedestrian arrangement at the planning stage (para. 3.19(a));**
- (xii) **take measures to improve the accuracy of project estimates for rehabilitation projects as far as practicable (para. 3.19(b));**
- (xiii) **promptly release unused funds from rehabilitation projects upon the completion of works and finalisation of project accounts (para. 3.19(c)); and**

Other related issues

- (xiv) **review the design of paving materials for footpath locations subject to heavy loading (para. 4.10(a)); and**
- (b) **the Commissioner for Transport should:**
- (i) **consider improving the recording of the work of reviewing and decluttering existing pedestrian railings to facilitate management monitoring and review (para. 4.23(a)); and**
 - (ii) **in planning the decluttering of existing pedestrian railings to improve walkability in future, step up efforts in demonstrating to the public the enhanced benefits of appropriately removing pedestrian railings without compromising safety and take measures to minimise the risk of jaywalking where appropriate (para. 4.23(b)).**

Response from the Government

15. The Director of Highways and the Commissioner for Transport agree with the audit recommendations.