



***Environmental Services – Capital
Planning & Delivery Materials Quality
Assurance Audit
February 2019***

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1.0 Management Summary

Audit Services has completed an audit of Environmental Services – Capital Planning & Delivery (ENV CPD) Materials Quality Assurance. The goal of the review was to determine if the Region and its consultants and contractors are performing the necessary testing on materials such as concrete, asphalt, granular materials and unshrinkable backfill when constructing or rehabilitating Environmental Services assets. We reviewed materials testing documents associated with past projects, and attended projects currently under construction to observe materials testing.

Our audit was conducted in accordance with the *International Standards for the Professional Practice of Internal Auditing*.

Based on the work Audit Services performed, it was concluded that overall the management controls over materials quality assurance is adequate. There were key areas identified during the audit where controls were strong and working as designed. These areas include the creation of the Consultant Requirements Manual to guide the Engineering Consultant in the overall delivery of a capital asset as per design and material specifications, bi-weekly meetings between project personnel assigned to a project to discuss various elements of the project including materials quality testing, clearly defined quality assurance (QA) and quality control (QC) responsibilities in contracts, and, the use of Project Server to facilitate the creation, collection and sharing of project documentation in a structured environment by all project personnel.

We also noted opportunities where management controls could be strengthened. These opportunities include the collection of Contractor QC testing, as allowed by our contracts, to help ensure Contractors are performing their material QC obligations, tightening editing controls over contracts and Region specific material QC specifications, creating a site inspection template for Engineering Consultants to help ensure all relevant project information is consistently captured, and updating the Environmental Services Toolkit Standards Reference Library on the Region's internal SharePoint site.

Should the reader have any questions or require a more detailed understanding of the risk assessment and sampling decisions made during this audit, please contact the Director, Audit Services.

Audit Services would like to thank Environmental Services – Capital Planning & Delivery staff and management for their co-operation and assistance provided during the audit.

2.0 Introduction

ENV CPD is responsible for the construction, rehabilitation and decommissioning of capital assets within Environmental Services. This includes water, wastewater and waste management capital assets. Projects for capital asset construction are identified, prioritized and scheduled into the capital project delivery plan.

The capital project delivery model consists of ENV CPD identifying the key requirements for a project and issuing a request for proposal for an Engineering Consultant. The Engineering Consultant will design the details of the capital project, develop an estimate for the project and create a tender that will be issued to construction Contractors for bidding. Services provided by the Engineering Consultant potentially include project management, environmental and engineering studies, obtaining permits and other activities. Other services, supplied by or hired by the Engineering Consultant include site inspection and contract administration services. Laboratory services for the performance of materials testing will be obtained by the Engineering Consultant through a request for quotation from three providers. Laboratory services will be hired once formal approval has been obtained from the ENV CPD Project Manager. The Region will have a Project Manager and Construction Administrator oversee the capital delivery process through constant monitoring of the project's progression. This monitoring includes daily discussions as matters arise, periodic project site visits and biweekly meetings with all related parties present.

To assist ENV CPD and the Engineering Consultant in project administration and reporting, a Consultant Requirements Manual was created. Briefly, this document is divided into ten phases and addresses various responsibilities at different stages. For example, these phases include Phase 1: Project and Quality Management and Controls, Phase 7: Detailed Design and Tender and Phase 8: Construction and Contract Administration. The Consultant Requirements Manual assigns the responsibility of QA and QC for design and construction to the Engineering Consultant.

To help monitor capital projects, ENV CPD uses a centralized project management system called Project Server. The Engineering Consultant team is granted access to the project site on Project Server to help ensure all project documentation is stored on the platform as the project progresses. The Engineering Consultant is provided with this project management system which provides project teams with integrated, centralized tools to effectively manage their projects from start to finish.

3.0 Objectives and Scope

AUDIT OBJECTIVES

The objectives of this engagement are to:

- Determine the process used to help ensure how the materials, namely concrete, asphalt, granular materials and unshrinkable backfill, used on Environmental Services Capital Planning & Delivery capital projects are of sufficient quality to meet the Region's requirements.
- Determine what tests are performed on a sample of materials used in capital projects and how the number of tests required is derived.
- Determine if the necessary documentary evidence of testing is sufficient and readily available should the need arise.

AUDIT SCOPE

The audit objectives will be accomplished through:

- Interviews with those individuals responsible for developing materials standards for the Region, and, those individuals responsible in ensuring that only materials of acceptable quality are used in Environmental Services capital projects.
- An analysis of documentation relevant to the capital project materials quality assurance process.
- A review of documentation for materials quality testing for a sample of recently completed capital projects.
- Attendance at a sample of active work sites to observe the quality assurance process and testing performed.

4.0 Detailed Observations

4.1 Engineering Consultant Quality Management Plan and Quality Assurance Audits should be collected at the appropriate stage of the project and evidenced as reviewed by the Region

Observation

Engineering Consultant Quality Management Plans (QMPs) for four of the five active projects sampled and Quality Assurance Audits (QAAs) for five of the same five active projects sampled could not be located in Project Server. For the one QMP plan collected, there was no evidence of review and acceptance by the Region.

As per the Consultant Requirements Manual, the goal of the QMP is to detail the quality assurance / quality control activities that will be completed by the Engineering Consultant for the project deliverables throughout the project life-cycle, including but not limited to construction. Quality management plans during construction could impact the performance and collection of QA and QC for materials testing.

The objectives for the QAA are to ensure that all project requirements are being fulfilled in accordance with policies, procedures, standards, guidelines, and specifications in the project Contract documents. Contract specifications include references to materials testing requirements and Engineering Consultant and Contractor responsibilities for materials QA and QC.

Recommendation

QMPs and QAAs should be collected and evidenced for review by the Region and uploaded to Project Server. This would help to ensure that the plan and audits submitted by the Engineering Consultant are acceptable, and observations from audits are addressed to the Region's satisfaction.

Management Response

Management is in agreement with Audit Services' recommendation. We note that upon investigation of the specific projects that were sampled, three out of four of the projects that were reported as not having QMPs and QAAs in Project Server were procured prior to the release of the Consultant Requirements Manual using an RFP template that did not include a requirement for a specific QMP or QAAs to be provided. The fourth project did include the QMP and QAA requirements which were not provided by the Consultant.

It is the role of the Region's project management team to collect and review the QMP for each project and to ensure the completion of QAAs in accordance with the QMP. Ensuring that QA/QC documentation is stored on Project Server is a joint responsibility of the Region and Consultant project teams.

To address the recommendation, the following actions are proposed to be completed by CPD:

- Release communication to CPD staff highlighting quality assurance and quality control requirements outlined in the Consultant Requirements Manual (to be completed by Q2, 2019).
- Ensure all project management teams collect existing QMPs and QAAs for all active projects and confirm upload to Project Server (to be completed by Q3, 2019).
- Conduct training session(s) with project teams, including construction staff, emphasizing the importance of quality planning and a review of the requirements surrounding quality management deliverables, specifically QMPs and QAA reports, as described in the Consultant Requirements Manual; through the training, highlight staff's roles and responsibilities in the collection, review and storage of QA/QC documentation (to be completed by Q4, 2019).
- Update the Consultant Requirements Manual to include a requirement for the QMP to be formally reviewed and accepted by the Region Project Manager via a deliverable approval form (to be completed by Q1, 2020).
- Add a verification of the formal acceptance of the QMP and verification of the completion of QAAs to the Project Closeout Audit Checklist (to be completed by Q1, 2020).

4.2 The Consultant Requirements Manual should be amended to provide the opportunity for a Quality Assurance Audit when materials are being applied

Observation

The Consultant Requirements Manual does not provide an opportunity for the Quality Assurance Auditor to perform a review of materials testing documentation during application of those materials. The Consultants Requirements Manual describes the Quality Assurance Auditor as a senior member of the Engineering Consultant's staff with sufficient authority to impact performance in the delivery of services. They conduct audits to ensure all project requirements are being fulfilled according to contract documents.

The Consultant Requirements Manual (Version 2.0, Section 1.6.3) requires periodic audits to be performed by the Engineering Consultant's Quality Assurance Auditor. At a minimum, the manual suggests audits be performed on the submission of the Construction Schedule (before physical construction of the asset) and submission of the Testing and Commissioning Plan (after physical construction of the asset). Not requiring an audit during asset construction forgoes an opportunity to help ensure materials testing is occurring as required, and, documents are being collected and uploaded to Project Server on a timely basis, along with other project related documentation.

Recommendation

Management should consider amending the Consultant Requirements Manual to provide the opportunity for audits of materials testing, documentation and upload to Project Server on a timely basis during the construction phase.

Management Response

Management is in agreement with Audit Services' recommendation. Based on Version 2.0 of the Consultant Requirements Manual, Section 1.6.2, QMPs are required to be submitted by the Consultant at the beginning of a project. The scope of the QMP may vary depending on the type of assignment that the Consultant is engaged in. For a design assignment, the QMP is focused on ensuring the quality of design deliverables. Where services during construction, such as contract administration and site inspection, are included in the consulting assignment, the QMP will also consider quality during construction. Likewise, the scope of the QAAs conducted will align with the scope of the consulting assignment. The intention of Section 1.6.3 of the manual is to identify the minimum requirements for quality assurance audits of various deliverables, including the construction schedule and testing and commissioning plan, to ensure that those deliverables meet contract requirements. Although not specifically identified as a deliverable, this does not preclude an audit of materials testing records. In fact, Section 8.4.4 of the Consultant Requirements Manual makes specific reference to the maintenance of inspection records and documentation including "field testing reports – compaction testing, asphalt testing, leakage tests, pressure tests, concrete testing, materials testing, other equipment testing".

To address the recommendation, the following actions are proposed to be completed by CPD by Q1, 2020:

- Update the Consultant Requirements Manual, Section 1.6.2 Produce a Quality Management Plan, to emphasize quality requirements during construction; update Section 1.6.2.1 Quality Management Plan Outline to clearly identify separate QMP requirements for design and construction, including specific reference to materials testing.
- Where a consultant is engaged in the design, contract administration and site inspection for a project, add a requirement to the Consultant Requirements Manual for the QMP to be revisited prior to the start of construction with a focus on verifying the quality requirements during construction, including materials testing.
- Update the Consultant Requirements Manual, Section 1.6.3 Conduct Quality Assurance Audits, to add to the minimum requirements for a quality assurance audit "On submission of materials testing records"; update Section 1.6.4 Conduct Quality Control Technical Reviews to add "materials testing reports" to the minimum requirements for quality control technical reviews.
- Update the materials section (12.3) of the bi-weekly construction meeting agenda template to emphasize reviewing of materials quality assurance and control information at key milestones during construction and the timely collection and review of materials testing records.

- Communicate updates to CPD staff.

4.3 The Region should consider providing Engineering Consultants with a Daily Site Inspector’s Report template to help ensure all relevant data and documents are collected

Observation

Available Daily Site Inspector’s Reports for four projects were reviewed for content and identification of material quantities delivered to the project sites. We noted the following observations:

- Reports did not always capture the same information to determine the materials delivered to sites and/or the quantities delivered.
- Materials being delivered that may have needed quality control and quality assurance testing; however quantities were not provided, nor was testing noted.
- Concrete delivery was noted; however it appears that an incomplete test was performed. Air and slump tests were performed and temperature testing was not performed. Temperature tests are required for both Canadian Standards Association (CSA) and Ontario Provincial Standards for Roads and Public Works (OPS).

Recommendation

Management should consider developing a template for a Daily Site Inspector’s Report to be used by Engineering Consultants at our project sites. This would allow the Region to identify the information and documentation that must be captured. Some of this information would include material deliveries and the QA and QC testing performed.

Daily Site Inspection Reports can be useful tools when disputes arise and it is necessary to support work actually performed. Providing a Region developed template to the Engineering Consultant would help ensure all the necessary work performed and documentation is captured.

Management Response

Management is in agreement with Audit Services’ recommendation. All tests must be performed as per contract specifications. Regarding the observed incomplete temperature testing, we note that although the temperature tests were not recorded on the Site Inspector’s Daily Progress Report, the tests were performed and recorded on separate Compressive Strength Cylinder Test Reports.

The Consultant Requirements Manual, Section 8.4.2 Maintain a Construction Works Diary, indicates the minimum information required to be collected by the Consultant Site Inspector. The information in this section of the manual, along with other examples, will be used to develop a template for the Daily Site Inspector’s Report. A section for materials testing reports will be explicitly added to capture materials testing information as it occurs, with an area to record

references to separate test reports where applicable. A checkbox will be included in the template for the Site Inspector to indicate that reports have been uploaded to Project Server, with an area to provide a hyperlink to reports. The Consultant Requirements Manual, Section 8.4.4 Maintain Inspection Records and Documentation, will be updated to reference the Daily Site Inspector's Report template. All Consultant Requirements Manual updates and the template are anticipated to be complete by Q1, 2020.

Note that the Daily Site Inspector's Report template will contain a disclaimer to ensure that use of the template does not release the Site Inspector of any duty to report on relevant inspection information. The intent of this disclaimer will be to ensure that the Site Inspector is aware that the template indicates only the minimum information to be collected and that the Site Inspector is still solely responsible for conducting and documenting the necessary inspections and records in accordance with project contract requirements.

4.4 Observations made from a review of project documentation and project site attendance

Observation

The following observations were made during review of a sample of project documentation and discussion with project team members:

- The Region does not require the Engineering Consultant to collect Contractor QC documentation for concrete and asphalt delivered to project sites.

For example, when concrete is delivered to a project site the Engineering Consultant may or may not obtain a copy of the Contractor's delivery receipts, nor obtain a copy of the QC testing documentation performed by the Contractor.

By not collecting delivery receipts the Region cannot ensure that the materials and quantities delivered to the project site were correct. By not collecting a copy of the Contractor QC documents the Engineering Consultant cannot ensure that the product delivered meets contract specifications and that the Contractor is performing adequate QC testing.

- A project site Audit Services attended for observation of materials being applied required a number of submittals from the manufacturer of the product prior to its application. Region material specifications, specifically developed for this project, included documentation for quality control testing to help ensure the product was produced, transported and stored properly. The submittals were not available for review as they had not yet been collected and uploaded into Project Server by the Engineering Consultant.
- QC Plans from Contractors could not be located for three of four projects on Project Server. For the one project where the QC Plan had been collected, we noted that the document was more of a policy & procedures manual for Contractor employees.

For projects using concrete, preplacement plans could also not be located on Project Server.

Recommendation

1. The Region should require Engineering Consultants providing services during construction to collect copies of material delivery tickets and Contractor QC testing documents. This would help to ensure all the necessary QC activity is being performed and exceptions followed up.
2. The Consultants Requirements Manual should be updated to provide the Region's expectation of timely uploading of project documents. This would help to ensure that project documentation, which includes materials testing documents, is stored for current and future reference.
3. QC plans from the Contractor, which address the specific project, should be collected and evidenced as reviewed to help ensure any risks affecting materials are addressed. This plan is a requirement of the Contractor contract and would address, among other QC activities, records keeping and testing documentation collection.

Preplacement plans, which address items such as timing, weather, concrete specifications, resources, should be collected to help ensure materials placement quantities, specifications and risks are understood by all parties. This is also a requirement of the Cast-in-Place Concrete Specification.

Management Response

Management is in agreement with Audit Services' recommendations. The following responses address each of the corresponding numbered recommendations. All actions are proposed to be completed by CPD by Q1, 2020:

1. The requirement to collect "material delivery tickets" is stated in the construction specification template 01025 Measurement and Payment, Section 1.9.3, as follows:

"Whenever pay quantities for material are determined by weight, the material shall be weighed on scales furnished by the Contractor and certified to be accurate by the federal or provincial agency responsible. A weight or load slip shall be obtained from the weigher and delivered to the Region's representative at the point of delivery of the material."

Several material tickets were obtained by the auditor. The Consultant Requirements Manual, Section 8.4.2 Maintain a Construction Works Diary, requires the Consultant to record the daily on-site happenings, including making entries for the delivery of materials. A requirement for the collection of material delivery tickets will be included on the Daily Site Inspector's Report identified in the management response to Section 4.3 of this report, including an emphasis on appropriate logging of ticket information. Training sessions will be conducted with the Region's project management teams including Engineering Managers, and construction staff including Construction Administrators and Construction Coordinators to confirm understanding of this requirement and their responsibilities for oversight, to promote consistent enforcement and to emphasize the importance of checking the adequacy of all information provided.

2. The Consultant Requirements Manual, Section 1.5 Document Management describes the requirements for centralized storage of documents on the Project Server project site. An update will be made to Table 1.5-1: Document Management – Key Considerations, Deliverables, References and Tools to explicitly define the expectation for timely uploading of project documents, including but not limited to materials testing records.

3. Construction specification template 01400 Quality Control identifies a high level requirement for a Quality Control Program submission by the Contractor. We will develop requirements and details to better define what a Quality Control Program is. The language in the specification template will be strengthened to include guidance on plan content, in particular materials testing quality control requirements. Similar to the QMPs, a deliverable approval form will be required for formal acceptance of the Contractor's Quality Control Program, and a verification of the formal acceptance of the Contractor's Quality Control Program will be added to the Project Closeout Audit Checklist for construction. Materials testing records will also be explicitly added to the Construction deliverables section of the Project Closeout Audit Checklist.

Enforcement of the construction specifications is the responsibility of the Consultant Contract Administrator and our project management team. Training sessions will be conducted with the Region's project management teams including Engineering Managers, and construction staff including Construction Administrators and Construction Coordinators to promote understanding of the required quality control submittals in accordance with the 01400 Quality Control specification and the requirement for management oversight. The requirement for pre-pour plans specifically for concrete applications under cold or hot weather conditions as described in the specification template 03300 Cast in Place Concrete will be discussed in the training.

4.5 Consistency of QC testing standards

Observation

During the course of our review of two contract documents requiring concrete material we noted inconsistency in the standards for QC testing. The standards were either CSA or OPS / CSA.

Recommendation

Management should determine which standards are most appropriate and update contract wording with the assistance of Legal Services.

Management Response

Management is in agreement with Audit Services' recommendation.

In the specification template 03300 Cast In Place Concrete, Section 3.5 Field Quality Control, inspection and testing of concrete and concrete materials is required to be carried out by a testing laboratory designated by the Consultant in accordance with CSA 23.1-14 Concrete Materials and Methods of Concrete Construction. Further to this, the specification template states that non-

destructive methods for testing concrete shall be in accordance with CSA A23.2-14 Test Methods and Standard Practices for Concrete.

The references to Ontario Provincial Standard Specifications (OPSS) that are described in the observation form part of the standard Articles of Agreement template, in particular Article A-3 Contract Documents. The Articles of Agreement template is a corporate document owned and maintained by Legal Services and shared amongst departments, including Transportation Services. In preparing contract documents, Article A-3 is populated with a list of all of the applicable contract documents, including relevant OPSS.

In the case of the observation, OPS specifications related to concrete testing (OPSS 1350 Material Specification for Concrete – Materials and Production and 1359 Material Specification for Unshrinkable Backfill) were listed in the Articles of Agreement as forming part of the contract documents, while Specification 03300 Cast In Place Concrete, referencing the CSA standards was also included in the same contracts, resulting in the noted “inconsistency”.

To address the recommendation, Management notes the following:

Our contract language General Condition clause GC 3.1 provides direction in the case of conflicts between specifications as follows:

GC 3.1 - In the event of conflicts between the specifications of the Region and the specifications of other entities, including OPS specifications and drawings, the specifications of the Region shall govern.

The CSA A23 standards and OPS specifications 1350 and 1359 are quite similar. Within the OPS specifications there are explicit references to the CSA standards. A focused review of the CSA and OPS standards will be required to determine which single standard (OPS or CSA) should be referenced in our concrete specifications. Following this review, specification template 03300 Cast In Place Concrete will be updated accordingly and changes will be communicated to staff. This work will be completed by CPD by Q1, 2020.

4.6 The requirement for rebar testing should be re-evaluated

Observation

QA testing for rebar, used in two projects placing reinforced concrete, were required in the form of a ‘mills test’. For one project, the mills test was required to be submitted by the Contractor. For the second project, the mills test was to be submitted ‘upon request’.

The result of this change in wording transfers the onus of the collection and submission of the mills test from the Contractor to the Engineering Consultant. Thus the risk of placement of faulty rebar could impact the overall level of risk for the Region. Mills testing report was not obtained for either project.

Recommendation

The necessity of a ‘mill’s test’ should be reevaluated by management. The Region specification calling for the ‘mills test’ should then be amended to reflect whether or not the test is required.

Management Response

Management is in agreement with Audit Services’ recommendation.

A mill test report (MTR) is a quality assurance document used in the metals industry that certifies a material's chemical and physical properties and states a product made of metal (steel, aluminum, brass or other alloys) complies with an international standards organization’s (ANSI, ASME, CSA etc.) specific requirements. It provides traceability and assurance about the quality of the steel used and the process used to produce it. This is not a material test that would be conducted onsite, rather, the MTR would be provided by the raw material producer. For rebar, the MTR would confirm the steel that has been ordered conforms to industry standards and would include the final sizes (lengths, diameters, finishes, angles bent, etc.). Consultants are not required to approve the MTR.

The current specification templates make the following references to the MTR.

Specification #	Section #	Wording Excerpt
03200 Concrete Reinforcement	2.3 Source Quality Control	.1 Upon request, provide the Consultant with a certified copy of the mill test report of reinforcing steel, showing the physical and chemical analysis, a minimum of twenty-eight (28) Days prior to commencing any reinforcing work. .2 Upon request, inform the Consultant of the proposed source of material to be supplied.
05120 Structural Steel	1.5.2 Informational Submittals	.1 Mill Certificates of tests made in accordance with CAN/CSA G.40.21 .3 Certified Mill Test Reports for Bolts and Nuts: .1 Name and address of manufacturer. .2 Bolts correctly marked. .3 Marked bolts and nuts used in the required mill tests and the manufacturer’s inspection tests.

The audit findings point specifically to the requirement for rebar testing, but technically, MTRs would be required for both structural steel and for concrete reinforcement.

Pending further investigation into the necessity of this test report, the requirement for the Contractor to provide an MTR should remain in the specifications. To ensure the onus remains with the Contractor to provide the report, the words ‘upon request’ have been removed from the 03200 Concrete Reinforcement specification template.

Further investigation into the necessity of the MTR and updates to documentation, if required, are expected to be completed by Q1, 2020.

4.7 Materials testing laboratories hired by the Engineering Consultant should be required to have a Canadian Council of Independent Laboratories (CCIL) or other acceptable accreditation certificate

Observation

Requests for quotes for testing laboratories do not stipulate the requirement for the laboratory to be accredited by the CCIL or other similar accreditation. Specifications being used by the Region, for example OPS and CSA, requires laboratories performing testing to be accredited by the CCIL or other similar accreditation.

The current reporting of materials testing results is directly to the Engineering Consultant. The Engineering Consultant will request quotes from three laboratories and, once quotes are obtained and formally approved by the Region, they are hired and report directly to the Engineering Consultant.

Recommendation

The requirement for the testing laboratory to be CCIL or have another acceptable accreditation should be included as part of the request for quote issued by the Engineering Consultant.

Management Response

Management is in agreement with Audit Services' recommendation. Typically, a bid item is included for materials testing as a cash allowance within the RFP for design, construction administration and site inspection assignments. To address Audit Services' recommendation, the materials testing language in the ENV CPD RFP template will be updated to specify the requirement for the testing laboratory to be CCIL accredited. As the RFP template is currently undergoing modifications in other respects, this update will be incorporated and released with the final template by the end of Q4, 2019.

4.8 The ENV CPD Toolkit on the Region's portal, which houses reference materials, should be updated

Observation

The online ENV CPD Toolkit Standards Reference Library was reviewed for content related to materials standards and specifications relating to Ontario Provincial Standards for Roads and Public Works (OPS), Canadian Standards Association (CSA) and American Society for Testing and Materials (ASTM). The following observations were noted:

1. None of the OPS hyperlinks were active.
2. There were eight hyperlinks for CSA standards. Of the eight links, six were for CSA standards which were purchased as a single user license and, storage and distribution on a network was prohibited. One hyperlink was nonfunctional.

3. There were seven ASTM standards on the portal. These standards were downloaded / printed in 2017 and no further reproductions are allowed. Storage on a portal could result in numerous copies being printed as needed.

Standards purchased as a single user license should not be made available on a network as per the agreement with the issuing organization.

Recommendation

1. The OPS hyperlinks should be replaced with one hyperlink to the OPS website. The most recent and older versions of specifications can be both accessed from the home website. This will also save time and effort in trying to keep the hyperlinks up-to-date.
2. CSA and ASTM standards should be removed from the portal, unless purchased for network distribution. Standards should also be kept up-to-date as they impact the quality and quantity of materials testing required.

Management Response

Management is in agreement with Audit Services' recommendations. The following responses address each of the corresponding numbered recommendations.

1. The Excel spreadsheet with outdated OPS hyperlinks has been removed from the site and replaced with one direct link to the official OPS website. This recommendation is considered to have been addressed.
2. In order to prohibit distribution of the single-use standards that have already been purchased and are currently posted in the Standards Reference Library on the CPD Toolkit, security will be added to the toolkit page to limit standards folder access to the ENV CPD Design Production Coordinator. Staff will be advised to request standards information from the ENV CPD Design Production Coordinator and information will be provided with a disclaimer related to the permissions for reproduction of the standard as applicable. This task will require a review of the standards that are currently posted and this action will be completed by the end of Q4, 2019.

Where the option is available and the use case justifies the expense, future standards may be purchased via subscription or for network distribution and maintained in the Standards Reference Library by the ENV CPD Design Production Coordinator accordingly.

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