Chapter 8
Horizon School Division No. 205—Maintaining Facilities

1.0 Main Points

Horizon School Division No. 205 is responsible for maintaining 38 schools and four other facilities located across east-central Saskatchewan. Almost 90 percent of its schools are more than 50 years old, and on average, in poor condition (similar to the 2017 estimated provincial condition of schools).

At September 2019, Horizon had effective processes to maintain its facilities other than in the following areas. Horizon needs to determine whether it is doing enough and has the right maintenance to move towards having its facilities and components in a satisfactory condition. Specifically, Horizon needs to:

- Prioritize all identified maintenance deficiencies associated with fire protection and suppression systems and boilers. The audit identified seven sprinkler and 19 fire alarm systems with deficiencies unrepaired more than a year after the Division identified the deficiencies.

  Prioritizing important maintenance deficiencies can help the Division avoid non-compliance with applicable codes and provide safe environments for all students, staff, and the public.

- Use the maintenance IT system to its full capacity, and keep information in that system up-to-date and accurate. Horizon did not use the system to keep up-to-date information about the condition of its assets, track key preventative maintenance activities it expected to do, or to fully track or monitor the completion of certain planned maintenance. We also found some information in the system was not accurate (e.g., not updated for completed maintenance).

  Improved use of the maintenance IT system would assist the Division in better prioritizing identified maintenance deficiencies, and monitoring the completion of maintenance. Tracking key information for significant components in the maintenance IT system would enhance the Division's ability to plan, track, and monitor the maintenance of its facilities and components. This would enable the Division to use the system to monitor changes in facility conditions and deferred maintenance to help determine whether it is doing maintenance at the right time.

- Give the Board periodic, comprehensive maintenance reports about the results of its maintenance activities and anticipated impact to inform decision-making. The Division did not fully utilize its facilities maintenance budget over the past three years (including preventative maintenance funding from the Ministry of Education), even though it had an estimated deferred maintenance of over $70 million.

  Sufficient analysis and reporting of maintenance results enables the Board to assess whether the Division effectively maintains its facilities and components, and effectively uses maintenance funding.

2.0 INTRODUCTION

This chapter reports the results of our audit of the effectiveness of the processes Horizon School Division No. 205 uses to maintain its facilities. In general, maintenance is the process of keeping existing facilities in operating condition and functional.

2.1 Legislated Responsibility for Maintaining Schools

2.1.1 Ministry Responsibility

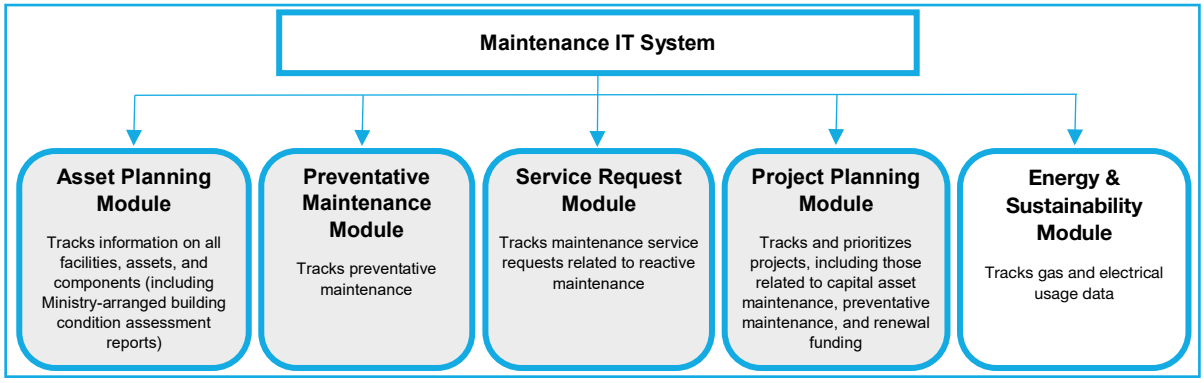
Under *The Education Act, 1995*, and related regulations, the Ministry of Education is responsible for providing leadership and direction to the Pre-Kindergarten through Grade 12 education sector. This includes providing school divisions with leadership in all areas, which includes maintenance of facilities. The Act requires the Ministry to review and approve school divisions' estimated expenditures and significant capital projects.[1] Each year, the Ministry gives divisions funding to operate, including funding for facility maintenance.

The Ministry of Education expects divisions to maintain facilities in satisfactory operating condition.[2]

To help divisions manage their facilities, the Ministry has supplied each of the 27 Saskatchewan school divisions with an electronic asset maintenance system (maintenance IT system). This system is designed to track key information about facilities and their components. Significant components of these facilities include playgrounds; heating, cooling, and ventilation systems; fire protection and suppression systems (e.g., alarm and sprinkler systems); roofs; flooring; and windows.

As shown in **Figure 1**, the maintenance IT system has five modules, four of which relate to maintenance activities (gray-shaded boxes). Horizon implemented the maintenance IT system in 2011.

Figure 1—The Maintenance IT System



[1] *The Education Act* requires the Ministry to approve capital projects of divisions costing more than $1 million (i.e., major). Capital projects include school building renovations. Also, the Ministry may supply divisions with capital grants to help fund renovations (s. 311). It may also provide divisions with grants to assist with preventative maintenance and repairs costing less than $1 million (minor). Furthermore, it may appoint a person to provide advice with respect to approval of plans for the maintenance of school buildings (s. 4(1.1)(k)).

[2] *Ministry of Education Preventative Maintenance and Renewal Funding Program Policy Guidelines*, Revised July 1, 2017, pubsaskdev.blob.core.windows.net/pubsask-prod/87251/87251-PMR_Funding_Program_-_Guidelines.pdf (22 January 2020).

The **Asset Planning Module** is designed to track information about facilities and components such as detailed descriptions, location, purchase date, history, and replacement costs. It can automatically determine the facility condition index and amount of deferred maintenance of each facility and for each division.

The following three modules are designed to track maintenance activities as follows:

- **Preventative Maintenance Module**—routine repairs and inspections intended to assist in systematic correction of emerging failures before they occur or before they develop into major defects
- **Service Request Module**—minor repairs (reactive maintenance) initiated through service requests (these can be prioritized)
- **Project Planning Module**—larger or more complex maintenance activities (e.g., projects to repair or replacements of components) such as those receiving specific Ministry funding

Source: Horizon School Division No. 205 Maintenance IT System. The maintenance IT system also includes a condition rating system for components (range of 1–10; 1 for critical response and 10 for non-essential response).

About every five years, the Ministry hires a third party to determine the condition of each school facility and its components within a school division. The third party updates the condition of components in the maintenance IT system at the related division during its assessments. The third party also enters the expected replacement year of facilities and components into the maintenance IT system.

Information included in the system enables school divisions to plan, track, and monitor facility maintenance. Furthermore, the system automatically determines the facility condition index (FCI) and amount of deferred maintenance of each facility and for each division.[3] This information can help school divisions assess the result of maintenance undertaken or deferred.

The third party last updated information for each of Horizon's facilities and significant components in 2017.

2.1.2 School Divisions

The Act gives each school division's Board of Education the authority to administer and manage the educational affairs of its division and to exercise general supervision and control over the schools in the school division.

Under the Act, a division is responsible for:

- Providing and maintaining school accommodation, equipment, and facilities necessary for the educational programs and instructional services approved by the school division for each of its schools.

- Setting out procedures with respect to the maintenance of school accommodation for the purpose of maintaining satisfactory standards of comfort, safety and sanitation for the students and other users of the accommodation.

School divisions must also obtain approval from the Ministry at key stages during major capital projects.

[3] The facility condition index is the amount of deferred maintenance divided by the current replacement value. Deferred maintenance is the amount of maintenance postponed or phased for future action.

2.2 Facilities of Horizon School Division No. 205

Horizon School Division No. 205 is located in central Saskatchewan and covers 30,970 square kilometers (see map in **Section 6.0**). It is one of Saskatchewan's 27 school divisions and educates about 6,400 students annually.[4,5]

A 14-person, elected Board of Education governs the Division.[6] Its strategic plan includes a goal to provide safe and caring learning environments for all students and staff.

The Division owns 38 of the 43 schools it operates across east-central Saskatchewan.[7] At September 2019, as shown in **Section 5.0**, the Division's facilities include:

- A head office located in Humboldt, which includes a maintenance shop
- Thirty-eight schools located in 30 communities with an average age of 56 years (ranging from three to 97 years)—87 percent of Horizon's 38 schools are more than 50 years old[8]
- A bus garage located in Foam Lake
- Two maintenance shops located in Lanigan and Wadena[9]

Similar to the estimated 2017 provincial average facility condition index (FCI), Horizon's schools have an average FCI of about 20% (poor condition) and deferred maintenance of almost $66.5 million.[10,11] At that time, Horizon's FCIs by school ranged from about 6% (fair) to 48% (critical).[12]

The Division employs approximately 844 full-time equivalent staff (FTE)—of which, approximately 50 percent are teachers and the other half include a wide range of positions (e.g., educational assistants, bus drivers, caretakers).[13] The Facility Services Unit is responsible for the maintenance of the Division's facilities, and employs nine FTE positions located throughout the Division.

As **Figure 2** illustrates, in each of the last three years, the Division planned for an operating deficit, and had one in two of the last three years—it also expects to have an operating deficit in 2019–20. The amount of its tangible capital assets (which includes its facilities and components) has remained relatively constant at $77 million over the last two years.

[4] *Horizon School Division No. 205 Board of Education Annual Report 2018–19*, p. 6.
[5] www.horizonsd.ca/Lists/Media%20Releases/DispForm.aspx?ID=48#/= (8 January 2020). This also includes students at schools the Division is not responsible for maintaining, as well as home-schooled students, and distance education students.
[6] *Horizon School Division No. 205 Board of Education Annual Report 2018–19*, p. 4.
[7] The Division supplies staff and support to five schools in its area it does not own—three Hutterite schools, a school owned by a village, and a school on George Gordon First Nation.
[8] *Horizon School Division No. 205 Board of Education Annual Report 2018–19*, pp. 35-36.
[9] www.horizonsd.ca/About/Directory/Pages/default.aspx (5 June 2019).
[10] The Ministry of Education classifies a good FCI as between 0–5%, fair between 5–10%, poor between 10–30%, and critical greater than 30%.
[11] The Ministry estimated a FCI for all provincial schools in 2017-18 of just over 16% (poor condition) with deferred maintenance of about $1.25 billion and replacement values of about $7.63 billion.
[12] Based on 2017 data, given the Ministry's third party last updated information for each of Horizon's facilities and significant components in 2017. At that time, Horizon's 38 schools had replacement values of about $358.2 million
[13] *Horizon School Division No. 205 Board of Education Annual Report 2018–19*, p. 34.

Figure 2—Division Financial Overview from 2017 to 2019, including 2019-20 Budget

$ in thousands	2016-17 Actual	2017-18 Actual	2018-19 Actual	2019-20 Budget
Revenues[A]	$86,107	$84,598	$85,646	$84,619
Expenses	$87,310	$87,946	$85,407	$85,634
Surplus (Deficit)	($1,203)	($3,348)	$239	
Budgeted Deficit	($2,563)	($1,336)	($1,100)	($1,015)
Tangible Capital Assets at August 31	$74,785	$77,341	$77,488	$75,771

Source: Horizon School Division No. 205 Annual Reports and the 2019-20 budget approved by the Ministry of Education.
[A] Includes preventative and maintenance renewal project grants from the Ministry of Education as follows: 2016–17 $1.8 million; 2017–18 $2.1 million; 2018–19 $2.4 million; 2019–20 $2.4 million (budgeted). Preventative maintenance and renewal projects relate to maintenance a school division undertakes using Ministry funding. The Ministry expects these projects to address a division's highest needs and top maintenance priorities.

In 2018–19, the Division spent $3.2 million (2017–18: $3.2 million) specific to maintenance of its facilities (e.g., contracted maintenance, renovations, supplies).[14]

2.3 Importance of Facility Maintenance

Maintenance is one key aspect of asset management. Effective asset management takes a risk- and evidence-based approach to managing assets through their entire life cycle (from purchase to disposal). It requires a coordinated approach. It also requires linkage between the organization's overall strategic direction and decisions about maintenance and capital planning.

The condition of facilities changes over time due to use and physical deterioration. All buildings require regular, ongoing repairs and maintenance to the interior, exterior, mechanical, heating, cooling, and water systems to keep them in good operating condition. In general, the cost of maintenance rises as the infrastructure ages.

Organizations can take two approaches to maintenance. A preventative maintenance approach does inspections (at prescribed intervals) and repairs/replacements to assist in systematic correction of emerging failures before they occur or before they develop into major defects. For example, it may include replacing HVAC filters every six months, checking and recalibrating the pressure in boilers, or caulking windows annually.

A reactive maintenance approach does repairs in response to the requests identifying deficiencies or urgent issues, and typically, staff complete them as issues arise.

Effective maintenance:

- Helps ensure facilities can perform at optimum levels over their expected service life, and reduce the risk of service disruption
- Identifies and reduces risks associated with aging facilities, and reduces environmental impact by controlling resource usage

[14] Adapted from information obtained from Horizon School Division No. 205's financial system.

- Increases confidence in budgeting facility maintenance costs over time (short-, mid-, and long-term), and includes understanding the business consequences of reducing or increasing capital or maintenance budgets today, and in the years ahead

- Provides a foundation for continuous process improvement and feedback to improve future applications of the maintenance process[15]

In addition, effective maintenance planning helps justify asset expenditures to internal and external stakeholders, and considers whether employees have the right competencies and capabilities for managing facilities.

The consequences of not carrying out effective maintenance and repairs on facilities includes potential health and safety problems for users of the facilities (administrators, staff, and students), reduced quality of space, loss of facility value, higher future repair costs, and facilities not meeting their expected service life (e.g., replacing a building earlier than intended).

3.0 AUDIT CONCLUSION

We concluded for the 12-month period ended September 30, 2019, Horizon School Division No. 205 had effective processes to maintain its facilities, except for the following matters.

We found the Division did not use the maintenance IT system to its full capacity. Rather, the Division used many varied and informal processes to plan for and track its maintenance activities. It did not actively make sure requested and expected maintenance was completed when expected.

Furthermore, it did not determine whether it was doing enough and the right maintenance to move towards having its facilities and components in a satisfactory condition. Improved usage of the maintenance IT system would assist the Division in improving its prioritization of identified maintenance deficiencies, and the monitoring of maintenance completion.

Figure 3—Audit Objective, Criteria, and Approach

Audit Objective: To assess whether Horizon School Division No. 205 has effective processes, for the 12-month period ended September 30, 2019, to maintain its facilities.

Facilities include all of the Division's buildings and significant components (e.g., heating, air conditioning).

Audit Criteria:

Processes to:

1. Keep reliable information on facilities
   - 1.1 Identify the facilities, including components to maintain
   - 1.2 Keep current, reliable information needed to manage maintenance (e.g., facility condition, remaining service potential, estimated maintenance costs, estimated replacement cost)
2. Develop a risk-informed maintenance plan
   - 2.1 Determine expected service life, desired facility condition index, condition standards for critical equipment (i.e., service objectives) for long-term performance
   - 2.2 Assess risk that facilities will not meet required service objectives
   - 2.3 Establish specific maintenance strategies to achieve service objectives `
   - 2.4 Set maintenance priorities (short-, medium-, and long-term)
   - 2.5 Evaluate strategies against available resources

[15] *New South Wales, Total Asset Management Guideline – Asset Maintenance Strategic Planning*, (2006), p. 2.

3. Carry out maintenance effectively
   - 3.1 Use recognized maintenance standards
   - 3.2 Provide staff with guidance (e.g., maintenance procedures)
   - 3.3 Implement maintenance procedures consistent with standards and assessed priorities
   - 3.4 Adjust maintenance priorities as new information becomes available
   - 3.5 Track maintenance activities
4. Monitor performance of maintenance
   - 4.1 Analyze progress in carrying out maintenance
   - 4.2 Periodically report on maintenance (e.g., progress against maintenance plan, total deferred maintenance, facility condition index, condition of components) to internal and external stakeholders (i.e., Board, Ministry of Education, public)

Audit Approach:

To conduct this audit, we followed the standards for assurance engagements published in the *CPA Canada Handbook—Assurance* (CSAE 3001). To evaluate Horizon School Division No. 205's processes, we used the above criteria based on our related work, reviews of literature including reports of other auditors, and consultations with management. Division management agreed with the above criteria.

We examined the Division's criteria, policies, and procedures relating to maintaining facilities. We interviewed staff responsible for maintenance. We examined maintenance documentation (i.e., policies and procedures, maintenance plans, tracking of maintenance activities, work orders, contracts). We tested a sample of service requests, preventative maintenance items, and projects, and evaluated significant maintenance within the maintenance IT system to assess operating effectiveness of the Division's processes.

4.0 Key Findings and Recommendations

4.1 Qualified Staff Responsible for Maintenance

The Division has clearly assigned responsibility for facility maintenance to suitably qualified staff.

In addition to a manager and an administrative assistant, the Division's Facility Services Unit employs two journeymen (plumber, electrician) and five maintenance staff.

The Division has job descriptions for each of its maintenance staff positions. We found these appropriately outline necessary qualifications, and key responsibilities. The job descriptions require staff to be aware of and keep up-to-date on related building codes and requirements. For example, the job description of the Manager of Facility Services makes the Manager responsible for monitoring the safety of playgrounds and facilities, and long-term maintenance planning.

New maintenance staff receive orientation and job-shadow another maintenance staff to learn about the facilities and the required work. The Facility Services Unit monitors staff training and qualifications.

The Division relies on its journeymen's expertise to know about changes to facility standards. It makes copies of mechanical codes, building codes, binders listing key equipment in each school, and manuals for equipment available to staff.

The Division gives maintenance staff additional direction through semi-annual Facilities Services meetings (e.g., reminders about safety).

We found maintenance staff were suitably qualified, and had received expected training (e.g., first aid, fall protection). In addition, we found the Division obtains annual permits for electrical and gas for its facilities that allow the journeymen to perform required maintenance.

In addition, the Division uses its Board Policy Handbook and various administrative procedures to assign responsibilities for facility maintenance planning and monitoring, and set out certain key expected maintenance activities.

For example, the Board Policy Handbook expects the Board to receive facility services accountability reports. It makes the Director of Education responsible for giving the Board facility project budgets, construction schedules, and timely variance reports.

For another example, an administrative procedure makes the Manager of Facility Services responsible for ensuring the ongoing operation of clean, safe, well-maintained facilities to support students, staff, and public. This procedure also requires the Chief Financial Officer or superintendent to do an annual walkthrough of each facility. Another procedure requires monthly inspections of playgrounds.

In addition, the Division appropriately restricts staff's access and ability to make changes to the maintenance IT system (and modules therein) consistent with their responsibilities.

Clearly defining responsibilities helps ensure managers and staff understand their roles and work better together.

4.2 Functionality of Maintenance IT System Not Fully Utilized

The Division does not fully use the functionality of the maintenance IT system to help it plan for, track, and monitor maintenance of its facilities and significant components (e.g., boilers, roofs). The Division generally has key information necessary to plan for maintenance in various locations and formats.

The Division did not update condition and replacement year information in the asset planning module based on the results of its typically annual or periodic inspections of significant components (e.g., roofs, heating systems, boilers), or completed maintenance activities. As a result, as of September 2019, this key information remained unchanged from the 2017 Ministry third-party assessment.

Thereby, the Division cannot use the maintenance IT system to monitor the condition of its facilities and significant components to help prioritize its planning activities. The maintenance IT system uses condition and expected replacement year information for significant components to calculate the facility condition index (FCI) and amount of deferred maintenance. Changes in FCI and deferred maintenance can help show whether the right maintenance is done at the right time.

The Division uses the service request module to receive and assign staff requests for primarily small repairs (that is, reactionary maintenance) and some preventative maintenance (e.g., to track its inspection and maintenance of window cranks and screens). It expects staff making the request to categorize the urgency of the request using a standardized rating scale. The scale ranges from a low priority (minor issues staff will

address when time and weather permit) to urgent priority (health and safety issues staff will address within a day). It expects maintenance staff to use the system to track the completion of the requested maintenance. It does not estimate costs to complete service requests.

The Division uses the project planning module for larger and more complex maintenance projects to fix identified deficiencies (e.g., roofs) or larger and urgent service requests for repairs (e.g., sidewalk repairs). It expects maintenance staff to use the system to prioritize the urgency of the projects using a standard classification system, estimate project cost and start date, and track the completion of the project.

The Division uses the preventative maintenance module to track its preventative maintenance requirements and activities for only a few significant components (primarily playground inspections, and heating systems). It does not use the module to track estimated cost of required preventative maintenance of these components.

Furthermore, the Division does not use the preventative maintenance module to track its preventative maintenance requirements and activities for several significant components where it uses third party contractors to carry out the maintenance activities (e.g., fire protection and suppression systems, boilers, and roofs).

For these components (fire protection and suppression systems, boilers, and roofs):

- It used differing formats (binders or files with individual contractor-prepared reports for fire protection and suppression systems, and roofs, and summarized division-prepared excel spreadsheets for boilers) to collect key information.

  We found it had key information (timing of last inspection, results of inspection, identified deficiencies) necessary to determine and prioritize maintenance requirements.

- It used the results of third party contractor inspections to prioritize roof repairs and replacements based on age and condition of the roofs.

- It had not documented its preventative maintenance requirements (e.g., expected frequency of inspections, process to decide what maintenance to do when). While not documented, we found maintenance staff had a clear understanding of expected inspection frequency and the frequency was in accordance with good practice. They also understood the Division hired third parties to inspect the condition of fire protection and suppression systems, boilers, and roofs, and would engage third parties to fix deficiencies depending on available resources.

- It does not always formally track and prioritize identified deficiencies, and recommended maintenance for fire protection and suppression systems and boilers. Rather it relied on the small number of staff involved in maintenance decisions to informally prioritize and address deficiencies.

  However, we found staff did not address all significant identified deficiencies within an appropriate timeframe. For example, as of September 2019, our review of third-party September 2018 inspection reports of fire sprinkler and alarm systems found the Division had not repaired seven sprinkler and 19 fire alarm systems with identified

deficiencies more than a year later. As a result of these deficiencies, the facilities did not comply with the Provincial Fire Code (e.g., failure of heat detectors, horn audibility issues, pull station indicator lights not functional), resulting in expired inspection certificates for 23 facilities.[16]

When we brought this to management's attention, the Division did not have plans to address these deficiencies. Since then, the Division is working with a contractor to fix them; it expects the contractor to address all of them by mid-2020.

Prioritizing identified maintenance deficiencies can help the Division avoid non-compliance with applicable codes and provide safe environments for all students and staff.

1. **We recommend Horizon School Division No. 205 prioritize all identified maintenance deficiencies associated with fire protection and suppression systems and boilers to enable determination of the nature and timing of necessary maintenance.**

Management indicates it has been increasing its use of the maintenance IT system as time permits. It informally plans to use the preventative maintenance module for these components in the future (e.g., hopes to do so by mid-2020).

Tracking key information for almost all significant components in the maintenance IT system would enhance the Division's ability to plan, track, and monitor the maintenance of its facilities and components. It would also enable the Division to use the system to monitor changes in FCI and deferred maintenance to help determine whether it is doing the right maintenance at the right time.

2. **We recommend Horizon School Division No. 205 develop a strategy to better use the maintenance IT system to plan, track, and monitor maintenance of its facilities and significant components.**

4.3 Frequency of Expected Inspections Consistent with Good Practice

For key components like playgrounds, boilers, roofs, heating, cooling and ventilation systems, and fire protection and suppression systems, we found the Division's expected frequency of inspections consistent with good practice. For example:

- It has fire protection and suppression systems inspected annually; annual inspections align with the term of the contractor-issued inspection certificates issued to show compliance with the Provincial Fire Code
- It expects monthly playground inspections consistent with guidance from the Canadian Playground Safety Institute

[16] Saskatchewan adopts the National Fire Code by regulation under provisions of *The Fire Safety Act* as the standard for the fire safe operation of the buildings and facilities. The National Fire Code establishes three core objectives; safety; health; and fire protection of buildings and facilities.

- It has boilers inspected twice each year, exceeding the requirements set out in *The Boiler and Pressure Vessel Regulations, 2017*[17]

In addition, we found the Division or the third-party consultants are to use standard checklists to document the inspection and its results. We found the standard checklists were appropriate and consistent with good practice.

For the five schools we tested, consistent with the Division's facility inspection and maintenance policy, we found the Superintendent of Operational Services and Chief Financial Officer toured these schools in 2019 and met with principals to discuss medium- and long-term priorities at their respective schools. Principals gave them a list of items they would like renewed or updated (e.g., gym floor). We observed manual notations of observations from these tours.

Sufficiently frequent inspections help identify deficiencies and provide essential information to determine when best to address them before they present health and safety risks. In addition, earlier identification and repair of deficiencies is often more cost effective than deferring maintenance until major repairs and renovations are necessary. Use of checklists help ensure inspections are robust and assist in documenting inspection results.

4.4 Maintenance Plan Primarily Based on Available Budget

The Division does not fully cost out maintenance funding it needs to keep its facilities and their significant components in satisfactory operating condition. Rather, anticipated Ministry funding for maintenance, approved budgets, and cash available throughout the year are its primary determinants for determining what maintenance the Division does and when. It generally uses a risk-informed basis to decide what maintenance to do in the upcoming year.

The preventative maintenance and renewal (PMR) activities represent the most significant portion of the Division's maintenance budget—these activities range from about 45 percent to almost 60 percent of its total maintenance budget between 2016-17 and 2019-20. The Division hires third-party contractors to complete most of these projects.

The Division assumes its maintenance budget for other maintenance activities will be similar to prior years. It uses its staff to carry out this maintenance and expects them to follow applicable codes and manufacturer requirements, where applicable.

The Division uses Ministry preventative maintenance and renewal grants to fund its PMR projects.[18] It utilizes these grants for both preventative (e.g., roof replacements and repairs), and reactive maintenance (e.g., replacing windows with broken seals).

The Division uses the Ministry of Education guidelines for the PMR funding program, as summarized in **Figure 4**, to select projects and develop a rolling three-year PMR plan.[19]

[17] *The Boiler and Pressure Vessel Regulations, 2017* require inspections every year for high pressure boilers and every two years for low pressure boilers.
[18] The Ministry bases its annual distribution of PMR funding on the gross floor area of all schools owned by a division. The Division is made aware of this funding on an annual basis in conjunction with the Government's release of the *Estimates* (typically in March for the upcoming year).
[19] *Ministry of Education Preventative Maintenance and Renewal Funding Program Policy Guidelines*, Revised July 1, 2017, pubsaskdev.blob.core.windows.net/pubsask-prod/87251/87251-PMR_Funding_Program_-_Guidelines.pdf). (22 January 2020)

Figure 4—Ministry of Education Preventative Maintenance and Renewal Program Requirements

The Ministry of Education expects the program to allow divisions to maintain facilities in satisfactory operating condition.

A PMR Maintenance Plan lists the prioritized deficiencies of owned facilities over a three-year period. The Ministry will notify school divisions of the specific years required in the plan.

Each year, boards of education must approve their PMR Maintenance Plans, by way of motion, and submit them to the Ministry with a Preventative Maintenance and Renewal Authorization Form. Revisions to an approved PMR Maintenance Plan will require the submission of a Preventative Maintenance and Renewal Amendment Form and a Preventative Maintenance and Renewal Authorization Form.

Project activity types eligible for PMR funding include, but are not limited to, the following: architectural, mechanical, and/or electrical systems, site (e.g., retaining walls, paved pathways), environmental (e.g., asbestos), and related fees and studies.

Source: Ministry of Education Preventative Maintenance and Renewal Funding Program Policy Guidelines Revised July 1, 2017, (pubsaskdev.blob.core.windows.net/pubsask-prod/87251/87251-PMR_Funding_Program_-_Guidelines.pdf (22 January 2020).

We found the Division used identified deficiencies from third party contractor inspections of significant components, internal service requests for more complex or expensive repairs, and information obtained from its annual facility tours to identify deficiencies and desired projects. The Division uses the IT maintenance system's project planning module to capture key information about these projects.

The Division prioritizes projects based on health and safety, efficiency, facility condition, and timing, and documents this priority in the project planning module. As **Figure 4** shows, the Ministry requires the Division's plan to list prioritized deficiencies of owned facilities over a three-year period.

We found, as illustrated in **Figure 5**, the Division provided the Ministry with a board-approved three-year PMR plan each year. The plan set out its top maintenance priorities particularly for the upcoming year (year 1).

Figure 5—Annual Estimated Project Costs in Division Rolling Three-Year Preventative Maintenance and Renewal Program Submissions

$ in thousands	Year 1	Year 2	Year 3
May 2017 submission for 2018 to 2021	$3,477	$2,424	$23,200
May 2018 submission for 2019 to 2022	$3,729	$2,150	$20,196
May 2019 submission for 2020 to 2023	$4,252	$9,175	$12,320

Source: Horizon School Division No. 205 Preventative Maintenance and Renewal Funding Board-Approved Submissions.

For nine of 11 maintenance projects using PMR funding tested, we found the priority of the project consistent with underlying information (e.g., third-party inspection report, service request). The remaining two projects we tested related to lower priority service requests (e.g., installation of window coverings).

We found, from time to time, the Division adjusts the projects included in its PMR plan as it obtains new information about its facility needs. For example, for seven of 11 maintenance projects using PMR funding tested, the Division undertook the project (e.g., installation of security cameras, sidewalk repair, science lab renovations) because it assessed the deficiency as presenting a high risk to the health or safety of students or staff.

We also found, as **Figure 6** illustrates, the Division did not fully utilize its facilities maintenance budget over the past three years, or fully spend PMR funding received from the Ministry. At August 2019, it had not spent $329 thousand of PMR funding.

The Ministry provided between $1.8 million and $2.4 million of funding over this three-year period. It provides the Division with PMR funding in a lump sum during April to June each year. The Division has an August year-end thereby the Division typically spends some of the funding in subsequent years.

Figure 6—Division Maintenance Spending from 2016-17 to 2018-19

$ in thousands	2016-17	2017-18	2018-19
Budgeted Facilities Maintenance Expenses	$3,536	$3,240	$3,787
Actual Facilities Maintenance Expenses	$3,250	$3,227	$3,228
Difference between Budget and Actual	$286	$13	$559
Unspent PMR Funding	$278	$565	$329

Source: Adapted from information obtained from Horizon School Division No. 205's financial system.

Management indicated that the Division adjusts its maintenance spending throughout the year based on Division direction to constrain or minimize costs or to address other operational needs in the short-term. As noted in **Figure 2**, the Division has incurred deficits in two of the last three years.

Division management is aware it may not be spending enough each year to keep its facilities and significant components in satisfactory operating condition. It does not know how much it would cost to maintain all of its facilities and their significant components to a satisfactory operating condition.

The Division recognizes the total estimated costs of projects prioritized for each year exceeds its annual spending. It is also aware preventative maintenance and earlier repair of identified deficiencies is often more cost effective than deferring maintenance until major repairs and renovations are necessary. As **Figure 5** shows, its expected costs associated with Year 2 PMR projects increases significantly by the time they become Year 1 projects.

Deferring maintenance can reduce capacity to provide services, increase future repair costs, and potentially reduce overall service life of facilities (e.g., having to replace a building or components earlier than intended). See **Recommendations 4** and **5** about the need for better monitoring of maintenance activities, and of the overall condition of the Division's facilities. Also see **Recommendation 2** about the need for a strategy to better use the maintenance IT system to plan, track, and monitor maintenance of its facilities and significant components.

4.5 Staff Not Always Doing Maintenance when Expected or Tracking Completion of Maintenance

Staff are not always completing maintenance consistent with expected timeframes or documenting the completion of maintenance.

The Division expects staff to complete assigned maintenance (service requests/preventative) within assessed priority or stated timeframe, and document the completion of maintenance in the appropriate module of the maintenance IT system. For example, as the preventative maintenance module indicates, staff are to inspect playgrounds monthly using a standard checklist.

Maintenance staff can access the service request module on their smartphones and laptops. Maintenance staff self-assign work based on priorities set out in the service requests. If there is an urgent priority, the Manager of Facility Services will contact maintenance staff so they can address the maintenance work immediately. Service requests are generally for reactive maintenance. The Division aims to have each maintenance staff working on only 35 to 40 service requests at a time to help keep workloads manageable.

For 40 service requests in the service request module tested, we found:

- For each, maintenance was completed consistent with a priority determined by the assigned maintenance staff (not necessarily the priority documented in the request)
- For three requests assessed as high priority, staff addressed the high priority aspect of the maintenance request within a reasonable time but had not completed the remaining less urgent work or updated the module to indicate such work was outstanding (e.g., temporarily repaired an exterior door so it can close, but waiting for parts to complete the repairs)
- For two requests, staff did not document the completion of the requested maintenance promptly (e.g., closed request between 11 and 86 days after maintenance completed)

In addition, our analysis of outstanding service requests found staff had not properly documented the completion or status of the request for over 20 percent of service requests listed as outstanding in the service request module at August 31, 2019. Our analysis found 56 of 248 outstanding service requests open at this date were made prior to 2018. Over half of these service requests were of either medium or high priority. We found staff had, for most of these requests, either completed the requested maintenance, or for the larger and more complex service requests, the Division had converted them into PMR projects (i.e., the service requests were no longer required).

Not updating information in the maintenance IT system to reflect the actual priority of service requests may result in maintenance staff inappropriately prioritizing maintenance (i.e., spending time on lower priority maintenance work). Not closing completed maintenance items also reduces the ability to readily monitor maintenance activities.

For 32 preventative maintenance items in the preventative maintenance module tested, we found:

- For all items, the Division documented the planned frequency of the maintenance and the associated maintenance expected in the system.
- For 23 items, we found staff did not complete the expected maintenance (i.e., inspect furnaces and/or playgrounds). The system did not include documentation of reasons

for maintenance not being completed, and management was not aware of why staff did not complete the expected maintenance.

- For the nine items where staff completed the expected maintenance, staff used the required forms to document the expected frequency of the inspection, and track the maintenance. However, for two of these nine items, staff completed the maintenance (e.g., inspected heating units) later than expected (i.e., one month later). The system did not include documented reasons for staff not completing the maintenance promptly, and management was not aware of why.

  In addition, for seven of these nine items, staff did not document the completion of the expected maintenance in the maintenance IT system (i.e., close the maintenance item).

Not documenting completed maintenance promptly results in overstating the number of uncompleted service requests assigned to staff. Not documenting changes to the priority of requests causes inaccuracies of the priority of assigned requests. These may result in an inequitable assignment of service requests to staff.

Documenting the completion of maintenance items or reasons as to why maintenance was not done gives management key information to enable monitoring of maintenance staff performance.

3. **We recommend staff of Horizon School Division No. 205 maintain up-to-date and accurate information in the maintenance IT system about completion of assigned maintenance activities.**

4.6 Monitoring of Completion of Maintenance Needed

The Division does not actively monitor the timeliness of completion of requested and expected maintenance, or the accuracy of information tracked in the maintenance IT system.

The Division assigns clear responsibility for staff to monitor the performance of maintenance activities. The Division's maintenance procedures require the Manager of Facility Services to monitor the ongoing operation of clean, safe, and well-maintained facilities. The Division also makes the Superintendent of Operational Services responsible for facilities, including monitoring performance and improving effectiveness and efficiency.

Maintenance management meets with maintenance staff regularly. Meetings are largely informal interactions given the small size of the Facility Services Unit. We also found the Unit formally met in June 2019, where maintenance staff discussed safety requirements and work schedules.

Management did not actively monitor whether staff updated the service request module properly for maintenance completed. It was not aware the information it was using to manage was not accurate. For example, it did not know the inaccuracies caused the number of outstanding service requests at August 31, 2019 to be overstated by 20 percent. See **Recommendation 3** about maintaining up-to-date and accurate information in the

maintenance IT system. It did not analyze how long higher priority service requests (e.g., urgent) were outstanding to assess the timeliness of completion of requested maintenance.

For 11 maintenance projects we tested from the project planning module, we found management did not formally monitor the completion of the projects (i.e., assessment of timeliness, analysis of budget and actual costs). For each project, our assessment of the budget to actual costs found differences in costs to be minimal or management provided us with reasonable explanations. For three of the 11 projects with established planned construction dates, the Division's completion of the projects was within a reasonable timeframe. For the remaining projects, we found the timing of completion to be reasonable based on explanations provided by management.

In addition, management does not actively monitor whether staff complete preventative maintenance set out in the preventative maintenance module as and when expected. See **Section 4.5** for details about incomplete preventative maintenance items.

Without effective monitoring of the timeliness of completion of maintenance activities, there is increased risk of maintenance not being complete as expected—which can result in further deficiencies with the Division's facilities or significant components.

4. **We recommend Horizon School Division No. 205 actively monitor the timeliness of completion of requested and expected maintenance.**

4.7 More Robust Reporting of Maintenance Needed

While management gives the Board monthly reports on its maintenance activities, it does not provide sufficient information about whether its activities are maintaining its facilities and their significant components so that they can operate in a satisfactory manner.

The Division's Board Policy Handbook requires management to provide the Board with periodic reports on maintenance activities, along with information about facility project budgets, schedules, and variance reports.

The Board receives regular information about facilities capital. We found this included the approval of applications for capital project funding, and the three-year PMR plans.

The Board also receives monthly reports (Facility Services Report).

For three Facilities Services Reports tested, we found each report contained the general status of ongoing maintenance projects (e.g., roof repair is in progress), and in addition, one report contained the number of total and outstanding service requests by school and overall at month-end based on information in the service request module of the maintenance IT system.

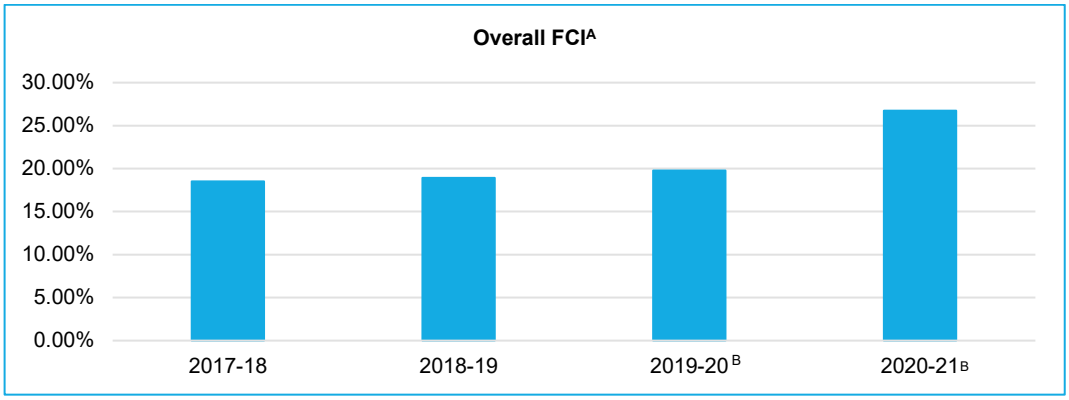
Each of the three reports tested did not include information on planned versus actual maintenance costs, as well as project status or schedules (i.e., actual timelines associated with maintenance). Also, they did not include information about year-over-year trends in the facility condition index (FCI) or deferred maintenance on an overall basis, or by school basis. It did not highlight facilities with higher maintenance concerns. We noted the Board received analysis related to possible school consolidation. We found this analysis included

consideration of health and safety, utilization of the facilities, and deferred maintenance of the potentially affected schools.

The FCI and estimate of deferred maintenance show whether maintenance activities are achieving the desired result (that is, whether the Division is doing the right maintenance at the right time). The maintenance IT system automatically determines this index based on deferred maintenance in the system.

Figure 7 illustrates the Division's system-generated FCI from 2017-18 to 2020-21—this suggests its FCI is expected to grow by about 8 percent over this period. The system-generated expected deferred maintenance is estimated to reach about $95 million by 2020-21; an increase of almost 45 percent between 2017-2018 and 2020-2021. As noted in **Section 4.2**, the Division is not updating condition information in the system. Information was last updated in 2017.

Figure 7—Horizon School Division System-generated Overall FCI from 2017–18 to 2020–21



Source: Adapted from FCI calculations provided by the Ministry of Education.
[A] The Ministry of Education classifies a good FCI as between 0-5, fair between 5 and 10, poor between 10 and 30, and critical greater than 30%.
[B] The Ministry of Education only began maintaining information about the FCI of schools across the Province in 2017-18. The maintenance IT system's calculation of the FCI includes future projections of replacement dates and associated costs.

Without sufficient analysis and reporting of maintenance results, the Board cannot assess whether the Division effectively maintains its facilities and components or whether maintenance funding is sufficient and efficiently used.

5. **We recommend Horizon School Division No. 205 provide its Board with periodic, comprehensive maintenance reports about the results of its maintenance activities (e.g., facilities' condition, deferred maintenance) and anticipated impact to inform decision-making.**

5.0 Facilities in Horizon School Division No. 205 by Year Built

At September 2019, the Division owned and was responsible for maintaining the following facilities.

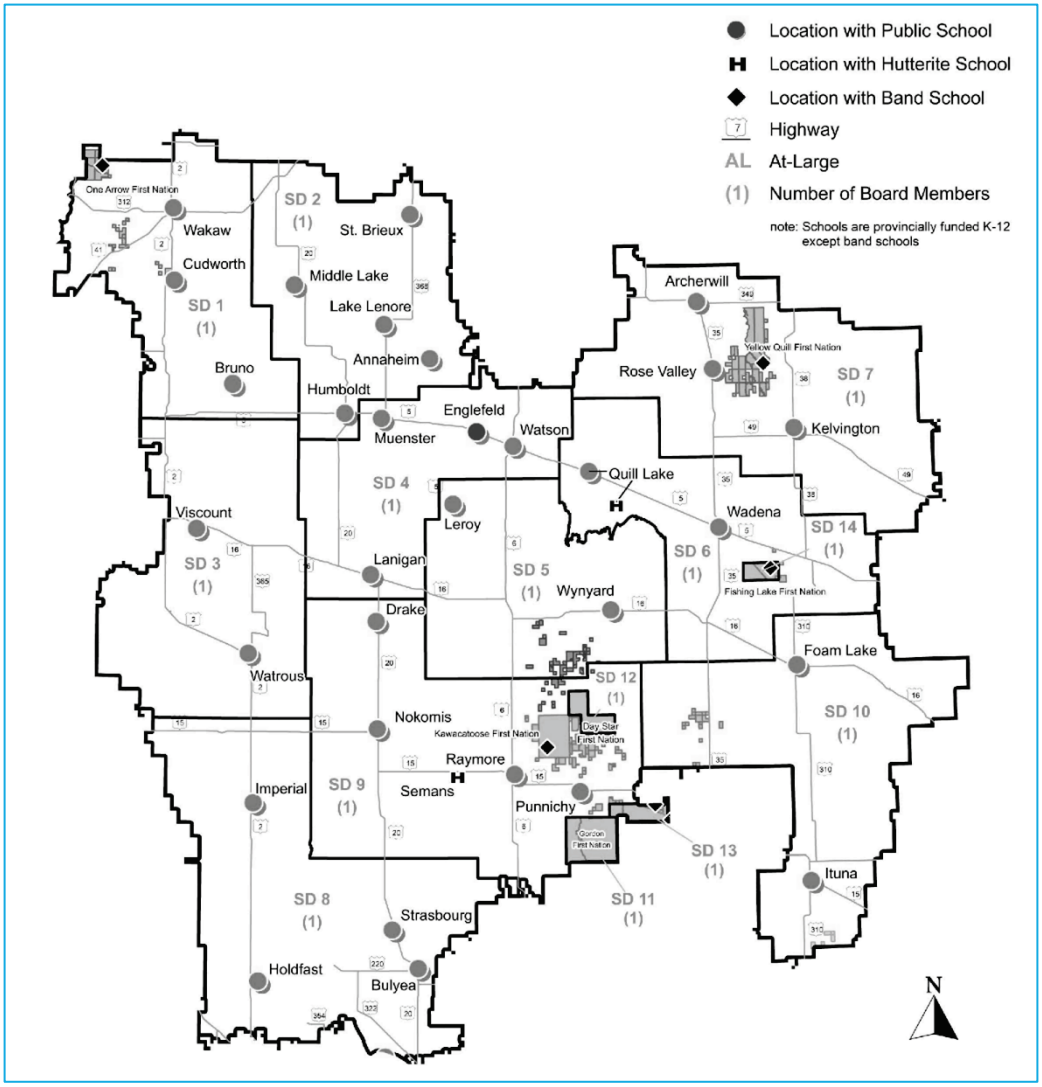
Facility	Year Built	Enrolment	FCI as of 2017-18[C]
Raymore School	1923	240	15.3%
Rose Valley School	1954	87	21.3%

Facility	Year Built	Enrolment	FCI as of 2017-18[C]
Bulyea Elementary School	1955	63	20.5%
Kelvington High School	1956	122	13.9%
Lanigan Central High School	1956	123	23.5%
Ituna School	1956	204	18.9%
Quill Lake School	1958	106	15.7%
Muenster School	1958	157	23.6%
Watson School	1959	138	23.0%
Wynyard Composite High School	1959	184	14.3%
Watrous Elementary School	1959	244	20.5%
Wadena Composite School	1959	149	14.3%
Punnichy Elementary Community School	1959	151	7.3%
Drake School	1959	56	11.5%
Wakaw School	1959	282	23.6%
Wynyard Elementary School	1959	250	10.2%
Viscount Central School	1960	135	15.1%
Foam Lake Composite High School	1960	123	10.1%
William Derby School	1960	229	27.4%
Leroy School	1960	100	19.2%
Imperial School	1960	95	43.8%
Schell School	1960	73	29.2%
Annaheim School	1961	83	36.6%
Winston High School	1961	188	20.8%
Three Lakes School	1961	60	26.0%
Lake Lenore School	1961	84	10.4%
Archerwill School	1963	66	20.4%
Punnichy Community High School	1964	168	39.4%
Foam Lake Elementary School	1965	133	19.5%
Nokomis School	1965	52	48.0%
Lanigan Elementary School	1965	239	20.8%
Robert Melrose Elementary School	1966	98	23.2%
Wadena Elementary School	1966	238	19.4%
Cudworth School	1972	146	17.4%
Bruno School	1980	132	10.2%
Humboldt Collegiate Institute	2011	382	6.0%
Humboldt Public School	2013[A]	300	7.2%
St. Brieux School	2017[B]	263	15.1%

Facility	Year Built	Enrolment	FCI as of 2017-18[C]
School Division Head Office	2018	N/A	N/A
Foam Lake Bus Garage	1962	N/A	N/A
Lanigan Maintenance Shop	1955	N/A	N/A
Wadena Maintenance Shop	1987	N/A	N/A

Source: Maintenance IT system and information provided by Horizon School Division No. 205.
[A] Humboldt Public School built in 1955 had major renovations in 2013.
[B] St. Brieux School built in 1961 had major renovations in 2017.
[C] FCI data as of 2017-18 is the closest available data to when the third party updated the Division's information in the maintenance IT system.

6.0 MAP OF SCHOOLS IN HORIZON SCHOOL DIVISION NO. 205



Source: www.horizonsd.ca/Schools/Maps/Documents/SD_Horizon%20205_2018.08.pdf. (10 March 2020)

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