



November 16, 2016

Honourable Kevin Murphy
Speaker
House of Assembly
Province of Nova Scotia

Dear Sir:

I have the honour to submit herewith my Report to the House of Assembly under Section 18(2) of the Auditor General Act, to be laid before the House in accordance with Section 18(4) of the Auditor General Act.

Respectfully,

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Office of the Auditor General

Our Vision

A relevant, valued and independent audit office serving the public interest as the House of Assembly's primary source of assurance on government performance.

Our Mission

To make a significant contribution to enhanced accountability and performance in the provincial public sector.

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Conduct and report audits that provide information to the House of Assembly to assist it in holding government accountable.

Focus our audit efforts on areas of higher risk that impact on the lives of Nova Scotians.

Contribute to a better performing public service with practical recommendations for significant improvements.

Encourage continual improvement in financial reporting by government.

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Who We Are and What We Do

The Auditor General is an independent nonpartisan officer of the Legislature, appointed by the House of Assembly for a ten-year term. He or she is responsible to the House for providing independent and objective assessments of the operations of government, the use of public funds, and the integrity of financial reports. The Auditor General helps the House to hold the government to account for its use and stewardship of public funds.

The Auditor General Act establishes the Auditor General's mandate, responsibilities and powers. The Act provides his or her Office with a modern performance audit mandate to examine entities, processes and programs for economy, efficiency and effectiveness and for appropriate use of public funds. It also clarifies which entities are subject to audit by the Office.

The Act stipulates that the Auditor General shall provide an opinion on government's annual consolidated financial statements; provide an opinion on the revenue estimates in the government's annual budget address; and report to the House at least annually on the results of the Office's work under the Act.

The Act provides the Office a mandate to audit all parts of the provincial public sector, including government departments and all agencies, boards, commissions or other bodies responsible to the crown, such as school boards and the provincial health authority, as well as funding recipients external to the provincial public sector. It provides the Auditor General with the authority to require the provision of any documents needed in the performance of his or her duties.

In its work, the Office of the Auditor General is guided by, and complies with, the professional standards established by CPA Canada. We also seek guidance from other professional bodies and audit-related best practices in other jurisdictions.



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Why we did this audit:

- Safe and affordable child care is important to Nova Scotians
- There are 17,200 licensed child care spaces in Nova Scotia
- \$37 million for families and child care centres through the child care subsidy and early childhood enhancement grant programs

Overall conclusions:

- Department does good job monitoring licensed child care centres
- Complaints investigation works well
- Department needs better monitoring of agencies overseeing family home day cares
- Department hasn't defined accessibility and affordability of child care
- Department needs to better manage grant and subsidy programs

What we found in our audit:

- Child care centres properly licensed according to policies
- Department inspects licensed child care centres and agencies as required
- Department follows up on violations from inspections to see if corrected
- Department investigates complaints against child care providers in a timely and appropriate manner
- In 2015, Department did a child care review that included accessibility and affordability
- Department not inspecting approved family home day cares as required by policy
- Inspectors uncertain at times how to treat high-priority violations such as criminal record checks
- Province has not defined what it considers to be accessible and affordable child care
- Performance measures do not measure accessibility and affordability
- At 26%, Department didn't meet its 31% target for subsidized spaces
- Department not managing grant and subsidy programs to ensure they achieve what they were intended to



Recommendations at a Glance	Auditee Agreement and Page Reference
Recommendation 1.1 The Department of Education and Early Childhood Development should clarify its policy on higher-priority violations, including defining direct contact with children.	Agree 14
Recommendation 1.2 The Department of Education and Early Childhood Development should develop and implement a quality assurance process to review inspectors' work.	Agree 15
Recommendation 1.3 The Department of Education and Early Childhood Development should update and follow its licensed family home day care inspection policy. This should include mechanisms for the Department to verify the inspection information reported by family home day care agencies.	Agree 16
Recommendation 1.4 The Department of Education and Early Childhood Development should develop and implement a policy outlining how complaints against child care providers and agencies are to be investigated.	Agree 18
Recommendation 1.5 The Department of Education and Early Childhood Development should develop relevant performance measures to assess the effectiveness of its affordability and accessibility initiatives.	Agree 20
Recommendation 1.6 The Department of Education and Early Childhood Development should use project management structures to plan, oversee the work, and monitor results of the <i>Affordable, Quality Child Care: A Great Place to Grow</i> action plan. Work plans should be detailed and specify what needs to be done, when, and expected results.	Agree 21
Recommendation 1.7 The Department of Education and Early Childhood Development should review its policy for determining the status of subsidy claimants and conduct status reviews as required.	Agree 23
Recommendation 1.8 The Department of Education and Early Childhood Development should implement review processes to help verify grant and subsidy claims.	Agree 24

1 Licensed Child Care

Background

- 1.1 There are two categories of licensed child care in Nova Scotia: child care centres and family home day care agencies.

<p>Child Care Centres</p> <ul style="list-style-type: none"> • Commercial or nonprofit organization • Licensed and inspected by Education and Early Childhood Development • 391 licensed child centres in Nova Scotia caring for 16,000 children
<p>Family Home Day Care Agencies</p> <ul style="list-style-type: none"> • Licensed by Education and Early Childhood Development • Approves and monitors family home day cares • 15 in Nova Scotia
<p>Family Home Day Care</p> <ul style="list-style-type: none"> • Child care in private home for up to six children, or eight school-aged children, including the provider's own • Inspected by licensed family home day care agencies • 207 family home day cares in Nova Scotia caring for 1,200 children

- 1.2 Licensed child care in Nova Scotia is governed by the Day Care Act and Regulations, which outline licensing requirements and other conditions for the operation of child care centres, approved family home day cares, and family home day care agencies including:

- Child-to-staff ratios and maximum child capacity, depending on the type of centre
- Qualification requirements and background checks for staff
- Regular onsite inspections
- Recordkeeping requirements
- Compliance with health and safety authorities, including health and fire prevention

- 1.3 The Department of Education and Early Childhood Development is responsible for licensing child care centres and family home day care agencies. The agencies are then responsible for approving family home day cares and ensuring these are managed in accordance with the Act and Regulations. While Department staff completes inspections of licensed child care centres to ensure compliance with the legislation, approved family home day cares are inspected by the family home day care agencies. Prior to September 2013, the Department of Community Services was responsible for licensed child care centres.



- 1.4 The Department of Education and Early Childhood Development offers funding programs to families and licensed child care providers. The child care subsidy program provides funding to child care centres on behalf of eligible families to reduce the cost of licensed child care. The early childhood enhancement grant offers funding to child care providers to support operating expenses and pay higher wages to child care staff. The total funding provided under these programs in 2014-15 was approximately \$37 million.
- 1.5 In March 2016, the Department of Education and Early Childhood Development released the results of a review of child care within Nova Scotia. The report made 18 recommendations in areas such as accessibility and affordability of child care programs.

Audit Objectives and Scope

- 1.6 In summer 2016, we completed a performance audit at the Department of Education and Early Childhood Development. The purpose of the audit was to determine whether the Department oversees licensed child care centres in a manner that provides safe, affordable and accessible child care for families.
- 1.7 We completed this audit because safe and affordable child care is important to Nova Scotians. In August 2014, the Minister of Education and Early Childhood Development issued a memo to child care providers across the province outlining frequent violations that were being identified, which included child abuse registry checks, criminal record checks and first aid certifications for staff. The memo noted the need for child care providers to be in compliance with all requirements of the Day Care Act and Regulations.
- 1.8 The audit was conducted in accordance with sections 18 and 21 of the Auditor General Act and auditing standards of the Chartered Professional Accountants of Canada. It covered the period from April 1, 2014 to March 31, 2016.
- 1.9 The objectives of the audit were to determine whether the Department of Education and Early Childhood Development:
 - is adequately monitoring and enforcing compliance with the day care legislation, and related standards and policies;
 - is adequately monitoring and assessing the accessibility and affordability of child care;
 - is managing the child care subsidy and early childhood enhancement grant programs in accordance with agreements, policies and procedures; and



- has adequate processes to ensure the child care subsidy and early childhood enhancement grant programs are achieving intended outcomes.
- 1.10 Generally accepted criteria consistent with the objectives of the audit did not exist. Audit criteria were developed specifically for this engagement. Criteria were accepted as appropriate by senior management within the Department of Education and Early Childhood Development.
- 1.11 The audit approach included reviewing relevant legislation, policies and processes. We interviewed management and staff at the Department of Education and Early Childhood Development and tested licensing, inspection, subsidy, and grant files to determine compliance with the relevant legislation, policies and processes. We also examined the Department's goals related to the affordability and accessibility of child care, along with related performance information.

Significant Audit Observations

Licensing and Inspection – Child Care Centres

Conclusions and summary of observations

The Department of Education and Early Childhood Development is adequately monitoring licensed child care centres. During our audit period, centres met all requirements prior to being issued a license to operate. Department inspectors are conducting both scheduled and unannounced inspections of licensed child care centres and the majority of violations are corrected in a timely manner. When violations are not corrected within the time period set by inspectors, steps are taken to achieve compliance. However, there is some confusion around addressing high-priority violations related to criminal and child abuse registry checks. We recommended the Department clarify its policy around these types of violations.

- 1.12 *Initial licensing process* – The Department of Education and Early Childhood Development has a documented process for licensing child care centres. We tested 10 child care centres that were granted licenses during the audit period and found the licensing process was followed. Applicants submitted the required documentation and licensing inspections were completed before the license was issued.
- 1.13 *Licensed child care centre inspection process* – Licensed child care centres have two inspections a year to confirm compliance with the Day Care Act and Regulations. One of these inspections is scheduled in advance, while



the second is unannounced. Inspections are completed by staff from the Department of Education and Early Childhood Development using an inspection checklist. If violations are identified, the centre is given a date by which these must be corrected and follow-up inspections are completed to ensure violations have been addressed.

1.14 *Licensed child care centre inspections* – We examined the inspections of 45 licensed child care centres across the province between April 1, 2014 and March 31, 2016. For these centres, there were 158 inspections which identified 225 violations of the Day Care Act and Regulations. The number of violations was similar at announced versus unannounced inspections.



1.15 The ten most frequent violations identified in the inspections we tested are listed below.

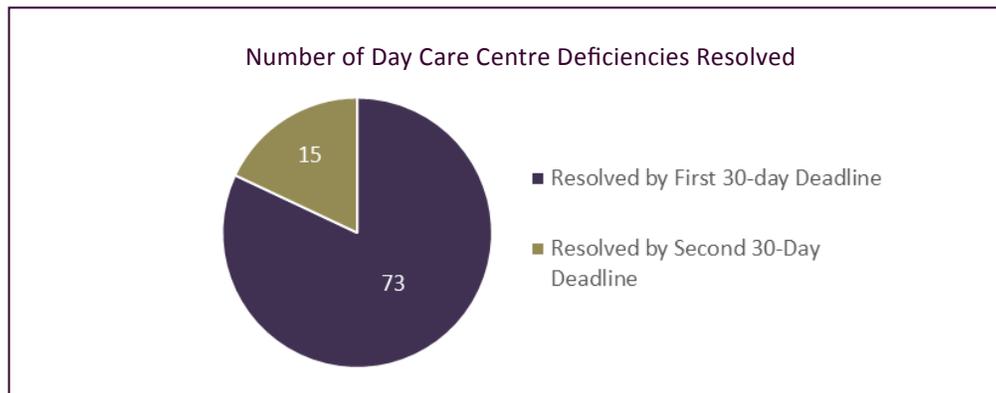
Number of Violations	Violation	Day Care Regulation
17	All Day Care staff who work directly with children must have a valid first aid certificate, including infant CPR.	28(1)
15	Licensees must complete a child abuse registry check for any person, 13 or older, who will have contact with children in a licensed day care program.	43(2)(a) 43(4)
13	For each child in the centre, the care provider must document semi-annual reports regarding the child's development.	31(1)(i)
12	For each child in the centre, the care provider must keep a health questionnaire completed by the child's parent or guardian on file, including immunization dates.	31(1)(d)
11	A person who holds an early education classification must complete at least 30 hours of professional development related to early childhood care/ education every three years.	38
10	Children enrolled in day care must be provided with one or more safe and suitable outdoor play spaces located at the centre.	22(2)(a)
7	A Parent Committee must meet at least 2 two times per year.	48(1)
7	A licensee must follow Provincial guidelines for promoting and maintaining health and safety and preventing and controlling communicable diseases.	28(3)
6	Criminal record checks (vulnerable sector checks) are required for any person, 18 or older, who has contact with children, including volunteers.	43(1)(a) 43(2)(a) 43(3)
6	A licensee must have a behaviour guidance policy and ensure that all staff and volunteers have training in the policy prior to starting employment or volunteering.	19(2)(a)



► **Most violations corrected in a timely manner**

1.16 *Enforcement of requirements at licensed child care centres* – If violations are identified, licensed child care centres have another inspection in 30 days to confirm the issues have been corrected. If a violation is not corrected after the 30-day period, centres are issued a warning letter stating a probationary license will be issued if the violations have not been fixed within another 30 days.

1.17 Of the 158 inspections we tested, 88 identified at least one violation. Approximately 83 percent (73 of 88), were corrected by the centre within the 30-day deadline. Of the 15 inspections with violations which were not corrected within the first 30-day period, warning letters were issued to the centre in all but one instance. All violations identified were corrected by the centre by the second 30-day deadline.



► **Policy on treatment of high-priority violations not clear**

1.18 *High-priority violations* – As of March 1, 2015, the following violations were considered high priority by the Department of Education and Early Childhood Development.

- Failure to obtain or renew criminal record checks and child abuse registry checks
- Serious nutrition violations, such as failure to provide adequate and nutritious meals and snacks

1.19 High-priority violations are to be corrected immediately. In the case of criminal record checks and child abuse registry checks, employees who do not have these on file, or who have not appropriately renewed these checks as required, are not allowed to work directly with children. If an individual’s position requires them to be in direct contact with children, they must be removed from this duty immediately and not permitted to be in direct contact with children until the required checks have been obtained.



- 1.20 Several inspectors told us there was confusion around what direct contact with children means. For example, inspectors told us centres may ask if a staff member with an expired child abuse registry check can work in the kitchen while waiting for updated checks. In some instances, requiring a day care staff member to leave could result in violations of the child-to-staff ratios. This could lead to parents being asked to remove their children from the centre until the child-to-staff ratios are corrected.

Recommendation 1.1

The Department of Education and Early Childhood Development should clarify its policy on high-priority violations, including defining direct contact with children.

Department of Education and Early Childhood Development Response: The Department agrees with this recommendation and will be releasing a new compliance policy within the coming months that will clearly identify what high priority violations are and the process that will be followed when they are identified. Additional information to assist with interpretation of these violations and the expectations for compliance will be included on the Licensee's Manual for Regulated Child Care Settings. In the interim, frequently asked Questions went out to Department staff and the sector, on August 18, 2016, which clarified the definition of contact with children.

- 1.21 As noted above, the Department's high-priority violations policy was implemented on March 1, 2015. Three of the six violations related to criminal record/vulnerable sector checks, noted in an earlier chart, occurred after the new policy was implemented. There were two instances in which a high-priority violation was not corrected immediately. In one case, an individual with an expired criminal record check continued to work with children for two weeks until the issue was resolved. In this particular instance, the inspector did not tell centre staff this was a high-priority violation that needed to be fixed immediately. In the other instance, the individual did not have contact with children until the check was provided.
- 1.22 *Timing of inspections* – Under Education and Early Childhood Development's policy, an unannounced inspection is required to be conducted four to nine months after the scheduled inspection. The goal of this inspection is to surprise the centre and get a view of the normal day-to-day operations. We found that for 11 of 32 centres with an unannounced inspection in each of the two fiscal years during our audit period, the inspections were completed around the same time each year. There was a variance of five or less days between the annual dates of unannounced inspections. The predictability of an unannounced inspection removes the element of surprise and may allow the centres to prepare. An effort should be made to vary the time between unannounced inspections from one year to the next.



- 1.23 *Performance management* – Education and Early Childhood Development does not monitor or review licensing officer performance, including if work is completed on time or documentation is filed appropriately. A review process would allow the Department to help ensure standards are appropriately and consistently applied by all inspectors across the province.

Recommendation 1.2

The Department of Education and Early Childhood Development should develop and implement a quality assurance process to review inspectors' work.

Department of Education and Early Childhood Development Response: *The Department accepts and intends to implement this recommendation. The Department currently does licensing file reviews, a review of every complaint investigation and monthly meetings with licensing officers to review inspections and processes. In addition to this we will develop a standard for how often this will occur and introduce a "peer review" process by January 2017 with full peer reviews starting in April 2017. These reviews will be used as a basis for Licensing Officers to engage in discussion and analysis of licensing issues that have arisen during the month to ensure that consistent interpretations of the regulations are made and to standardize practices and decision-making processes.*

Licensing and Inspection – Family Home Day Care Agencies

Conclusions and summary of observations

Improvements are needed in the Department of Education and Early Childhood Development's monitoring of licensed family home day care agencies. The Department is not following its policy which requires inspectors from Education and Early Childhood Development to complete some inspections of approved family home day cares. While the Department reviews agency records for the inspection of approved family home day cares, it does not follow its policy to complete some of the inspections. As a result, Education and Early Childhood Development cannot verify the thoroughness of the inspections completed by agency staff or that all violations are identified and corrected. In some instances, the agencies were not completing the required inspections of the approved family home day cares.

► **Department not inspecting approved family home day cares in accordance with departmental policy**

- 1.24 *Licensed family home day care agency inspection process* – Licensed family home day care agencies are responsible for monitoring approved family home day cares within their region in accordance with the Day Care Act and Regulations. The Department of Education and Early Childhood Development relies on licensed agencies to monitor the approved family home day cares



for compliance with legislation. Agencies are to annually inspect approved family home day cares for compliance with regulations using a checklist prepared by the Department. As noted earlier, licensed child care centres are inspected twice per year by Education and Early Childhood Development.

- 1.25 The Department inspects the records of licensed family home day care agencies twice per year. One inspection is scheduled in advance, while the other is unannounced. Department inspectors check documentation to confirm the agency's annual inspection of the family home day cares. The Department will also ensure agency staff have the appropriate criminal record and child abuse registry checks and first aid training. Education and Early Childhood Development's policy on the inspection of licensed family home day care agencies requires a departmental inspector, accompanied by the inspector from the family home day care agency, to inspect at least 25 percent of the family home day cares under the agency each year. However, we were told this policy is not followed. Education and Early Childhood Development staff thought departmental inspectors should be more involved in the monitoring of the inspections of approved family home day cares.
- 1.26 While the Department is monitoring agencies to determine whether approved family home day cares are inspected, there are risks associated with the agency inspecting and reporting on approved family home day cares under its management. Since staff from the Department of Education and Early Childhood Development are not present for the inspections of approved family home day cares, the Department cannot verify the thoroughness of the inspections completed by Family Home Day Care Agency staff or that violations are being corrected.

Recommendation 1.3

The Department of Education and Early Childhood Development should update and follow its licensed family home day care inspection policy. This should include mechanisms for the Department to verify the inspection information reported by family home day care agencies.

***Department of Education and Early Childhood Development Response:** Feedback received through the Child Care Review also supports this recommendation and the Department plans to update and fully implement the family home day care inspection policy. In 2017, the Department will develop the process to ensure staff inspect a minimum of 25% of homes as part of the agency licensing process in the future.*

- 1.27 *Licensed family home day care inspections* – We examined the Department of Education and Early Childhood Development's inspections of five family home day care agencies. There were 20 inspections of five agencies during our audit period. Nine of 20 inspections identified at least one violation by the agency. There were a total of 21 deficiencies across the nine inspections.



1.28 The chart below provides details of the four most common violations identified through the Department’s inspections of the family home day care agencies’ files.

Number of Violations	Violation	Day Care Regulation
6	An Agency must annually assess care providers and family day care homes under its management.	14(f)
2	Criminal Record Checks are required for any persons 18 or older who have contact with children (including volunteers).	43(2)(a)
2	Licensees must complete a child abuse registry check for any person, 13 or older, who lives in a home which operates as a family home day care.	43(4)
2	A licensee must obtain written confirmation that a parent has received the parent handbook.	44(5)

1.29 The most frequent deficiency related to the requirement of the agency to annually review the approved family home day cares under its management. Of the six total violations related to the annual review, there were two cases where the agency had not completed a review of all homes under its management. For the remaining four violations, all areas to be included in the review were not completed. Without these reviews, there could be an increased risk to the safety of children cared for by approved family home day cares.

1.30 *Enforcement at licensed family home day care agencies* – When the Department finds a violation at a licensed family home day care agency, it follows the same process as it does for licensed day care centres. As noted above, nine of the 20 agency inspections identified violations. The violations related to seven inspections were corrected by the agency within the Department’s 30-day deadline. The two remaining inspections were each from the same agency and while the violations were corrected by the agency, additional enforcement action was needed by the Department to achieve compliance. For one of these inspections, a probationary license warning letter was issued. For the other inspection, the agency was issued a probationary license when the deadlines for correction were not met.

Complaints

Conclusions and summary of observations

While the Department of Education and Early Childhood Development does not have a documented policy for responding to complaints related to both licensed and unlicensed child care, we found the Department did a good job of responding to complaints received during the audit period. We recommended the Department establish a formal complaints policy.



Department does not have a documented complaints policy

- 1.31 *Complaints* – The Department of Education and Early Childhood Development is responsible for receiving and investigating complaints against licensed day care centres and licensed family home day care agencies and approved family home day cares, along with complaints related to unlicensed child care. The Department does not have a complaints policy or standards around prioritizing categories of complaints and response times for conducting an investigation.
- 1.32 We selected a sample of 30 complaints received during the audit period and reviewed the Department’s response. Despite the lack of a policy, we found a reasonable process to record, investigate, and sign off complaints against child care centres and agencies. We did not identify significant issues with Department responses to these complaints. If regulatory violations were found as result of the complaint, these were followed up to ensure compliance. Although the Department’s informal processes are good, it is still important to have a documented policy so all staff have clear direction.

Recommendation 1.4

The Department of Education and Early Childhood Development should develop and implement a policy outlining how complaints against child care providers and agencies are to be investigated.

Department of Education and Early Childhood Development Response: The Department agrees that a clear policy for complaint investigation is required. The Department currently has draft Complaint Guidelines that the Early Years Branch staff will work with Policy and Planning to formalize. The guidelines address priority of response and identify response timelines. It is expected that the Guidelines will be implemented by January 2017.

Accessibility and Affordability of Child Care

Conclusions and summary of observations

The Department of Education and Early Childhood Development (and previously Community Services) reported some success in achieving performance outcome targets for access to safe and affordable child care. However, these results may not tell the entire story. Government has not adequately defined what it means by accessible and affordable child care. However, the Department’s recent child care review included recommendations to improve accessibility and affordability of child care. An action plan was developed to implement changes over the next five years. Some of these actions will require more work to achieve; diligent planning



and oversight will be required to keep the action plan on track. We recommended relevant performance measures be established to assess effectiveness in these areas.

1.33 *Background* – Access to safe and affordable child care has been an area of focus for the Department of Education and Early Childhood Development (and previously Community Services). Measures of success have included targets for the number of regulated child care spaces available and the percent of spaces subsidized by government.

1.34 There has been some success in achieving these outcome targets. The Department reported that a target of 17,000 regulated child care spaces was surpassed in 2014-15. Regulated child care spaces includes child care centres licensed by the Department and family home day cares approved by licensed family home day care agencies. The Department also had a target that 31 percent of these spaces would be subsidized; that has not been reached (26 percent). However, there has been an improvement from the baseline of 23 percent. A new measure was developed for 2015-16 that looks at the use of available subsidized spaces; however, a performance target was not set for this measure.

Child Care Performance							Base Year	
	Target	2015-16	2014-15	2013-14	2012-13	2011-12	2006-07	2013-14
Number of spaces in regulated child care setting	17,000		17,027	16,396	16,749	16,377	13,249	
Percentage of subsidized child care spaces	31%		26%	27%	26%	27%	23%	
Percentage of average daily subsidized child care spaces used out of total available spaces	Increase over baseline	NA						97%

► **Department has not defined accessible and affordable child care**

1.35 The Department has not defined what it means by accessible and affordable child care; this is seen in the performance measures reported. The number of subsidized spaces used may indicate whether the program is used, but it does not fully address whether the Department has been successful in making child care more affordable. The child care subsidy program is discussed later in this chapter.

1.36 Department management told us that defining what is accessible and affordable is difficult; for example, these may have different meanings depending on where you live or when caring for children with special needs. For these reasons, there should be performance measures that gauge the results of specific department initiatives versus expected outcomes. With



the Department's child care review, completed in 2016, the Department has an opportunity to fine-tune performance measurement in these areas.

Recommendation 1.5

The Department of Education and Early Childhood Development should develop relevant performance measures to assess the effectiveness of its affordability and accessibility initiatives.

***Department of Education and Early Childhood Development Response:** Over the next five years, the Department will implement nine actions that relate to affordability and accessibility including increases to the child care subsidy per diems, introduction of a limit on the amount by which child care centres can raise their fees and by raising the eligibility criteria for families to receive the maximum subsidy rates. The Department will measure these changes through analysis of uptake in the program, demographic data, utilization rates, and the number of families receiving maximum per diem rates. This information will be compared over time and be used for reviews of the program. A key initiative for the Department is the introduction of a strategic growth plan. This will enable the Department to ensure new child care spaces are funded in communities where they are needed most by looking at factors like birth rates, housing growth, and population health data.*

► **Recommendations in child care review to address accessibility and affordability concerns**

1.37 *Child care review* – In early 2015, the Department of Education and Early Childhood Development began a review of child care in the province. It involved public surveys, stakeholder submissions, and interviews. The review was completed in March 2016 and included five recommendations to address access and affordability concerns identified.

- Sharing information and resources with families and early childhood educators
- Increasing options available given the needs of urban versus rural communities
- Improving access to infant care and care for children with special needs
- Updating the subsidy program to make it easier to apply
- Improving support for low-to-middle-income families to make it easier to access child care

1.38 In June 2016, the Department released its action plan *Affordable, Quality Child Care: A Great Place to Grow*. This plan is meant to address the child



care review issues over the next five years. Twenty-seven actions were identified along with timeframes for completion. For example, the plan called for increases to subsidy amounts in 2016-17 and limiting fee increases permitted by regulated day cares to help address affordability. This would make more people eligible for the subsidy by raising the income cap. The Department expects other actions concerning access to child care will need more consultation and study. For example, one action discusses improving choices for child care by increasing the number of regulated family home day care programs, and another, increasing the number of child care spaces in communities with the greatest need.

- 1.39 Since the child care action plan is multi-year and involves a number of unknowns, the Department should take a project management approach to oversee, plan, develop milestones, manage the work, and monitor results, to ensure the action plan remains on track.

Recommendation 1.6

The Department of Education and Early Childhood Development should use project management structures to plan, oversee the work, and monitor results of the *Affordable, Quality Child Care: A Great Place to Grow* action plan. Work plans should be detailed and specify what needs to be done, when, and expected results.

Department of Education and Early Childhood Development Response: *The Department agrees with this recommendation and has created and is following work plans for all of the initiatives to be rolled out in 2016/17 and will continue to track progress and develop work plans for all initiatives which will clearly document timelines, deliverables and outcomes.*

Child Care Grants and Subsidies

Conclusions and summary of observations

The Department evaluated the early childhood enhancement grant and child care subsidy programs as a part of its child care review completed in 2016. It determined the program objectives had not been met. We also saw similar issues in our work. The Department has taken some steps to address the issues, for example, the subsidy program has been changed to attract more participation. However, the Department relies on self-reporting by child care centres in the distribution of program funding, which means it may not be based on actual eligibility. We also found annual reviews of subsidy clients were not conducted as required by department policy.

- 1.40 *Early childhood enhancement grant* – The early childhood enhancement grant is meant to help licensed child care providers pay additional wages to staff who work directly with children, provide funding for staff professional



development, and offset some centre operating costs. In 2014-15, the grants totaled \$19 million. The program is intended to help the recruitment and retention of early childhood education professionals.

- 1.41 *Child care subsidy* – Families can get support for child care expenses through a subsidy that is paid from the Department directly to regulated child care providers. In 2014-15, the amount paid for the subsidy program was \$18 million. The purpose of the subsidy is to help eligible families with the cost of child care expenses to enable them to work, pursue employment, attend school, and cope with family crises.

► **Early childhood enhancement grant and child care subsidy program not meeting objectives**

- 1.42 *Grant and subsidy program evaluation* – We expected the Department to evaluate the child care funding programs in relation to their objectives. Issues with achieving objectives of both programs were identified during the Nova Scotia Review of Regulated Child Care completed in 2016.
- 1.43 The Nova Scotia Review of Regulated Child Care found that the objectives of the early childhood enhancement grant were not met. Staff recruitment and retention continues to be a challenge due to low wages and benefits. There are also differences in how centres allocate their grant funding, which leads to inconsistencies in wages for childhood education staff.
- 1.44 The review made recommendations to address the issues, and included: improving wages, working with child care providers to work on recruitment and retention strategies, and increasing professional development opportunities. It also recommended improved funding accountability and reporting requirements to ensure grants are used as intended.
- 1.45 The June 2016 action plan created minimum wages for each professional level of early childhood educators. These requirements are to take effect October 2016.
- 1.46 With respect to the child care subsidy program, the review also found that even if applicants are eligible, the program may not be effective in allowing families to work, pursue employment, attend school, and cope with family crises. The review reported that the subsidy rates for low income parents are the lowest in the country and subsidy assistance is well below the cost of care. So even when eligible and subsidized, in some cases, families may not be able to afford child care at a licensed centre.
- 1.47 The Department has recently attempted to address concerns identified in the review by raising the income level of those who can qualify for the maximum subsidy, increasing the subsidy amount, and placing a limit on fee increases that regulated child care centres can charge.



► **Weaknesses in the administration of early childhood enhancement grant and child care subsidy program**

- 1.48 *Grant administration* – For the early childhood enhancement grant, there is a documented application process, eligibility criteria, and a funding formula based on centre attendance, and an annual review process. We looked at 30 regulated child care centres and assessed grant funding in light of the Department’s policy. We found minor issues with the files reviewed, including minor grant calculation errors, and missing or incorrect file documentation. We also found nine instances reported by the centres in which wage allocations appear to be inconsistent with the spirit of the terms and conditions of the grant. For example, some entry level or level 1 educators were allocated more of the grant than those at higher levels. In other cases, the grant amounts paid within a level varied significantly or were paid equally to all regardless of level.
- 1.49 According to the grant’s terms and conditions, the wage portion is meant to be paid out according to the professional level of the early childhood educators. However, there was no real guidance on how the wage grant should be divided among child care staff. As previously discussed, the Department’s action plan attempted to address this issue by setting minimum wage standards for early childhood educators.
- 1.50 *Subsidy administration* – We looked at 30 child care subsidy files to compare them to Department policy.
- 1.51 Annual reviews are to be conducted with families to ensure the Department has current financial, family, and child care information. We found this did not always happen. There were 23 instances in which annual reviews were completed late. Of these, 15 recipients did not have an annual review for more than two years, and 6 for more than three years. Income and other factors impacting the subsidy, such as marital status, may have changed during that time. Department management has suggested that a lack of available resources has contributed to this work not being done.

Recommendation 1.7

The Department of Education and Early Childhood Development should review its policy for determining the status of subsidy claimants and conduct status reviews as required.

Department of Education and Early Childhood Development Response: The Department agrees with this recommendation and intends to implement it by ensuring the timely processing of applications to determine eligibility. The Department will implement process improvements to enable staff to perform regular reviews to ensure that families who need subsidy most and meet requirements are



able to access it. The first step towards this will be the release of an improved subsidy application process in December 2016. The new application will make it easier for applicants to complete and for staff to review and process applications more efficiently. Additional policy revisions focused on strong client service and efficient service delivery will be implemented in spring 2017.

- 1.52 We also looked at 30 child centre subsidy claims to verify accuracy of the monthly payment versus the claim. Payments were correctly made based on the claims, except in the case of one payment which we could not verify because the file could not be found.
- 1.53 *Self-reporting for funding programs* – The annual review process for the early childhood enhancement grant involves the child care centre filing an annual review report with the Department. The Department does not review the supporting documentation. By relying solely on self-reporting, the grant money may not be distributed according to actual need. Similarly, the Department does not review supporting records for child care centre subsidy claims, despite a requirement that this be done. The Department has no processes to know that the claims are accurate.

Recommendation 1.8

The Department of Education and Early Childhood Development should implement review processes to help verify grant and subsidy claims.

Department of Education and Early Childhood Development Response: *The Department agrees with this recommendation and intends to implement it to ensure that grant funding programs and the subsidy program are working as effectively and efficiently as possible. As per Action 23 in the child care plan, over the next several months, we will be implementing new reporting requirements, accountability measures, and random audits to ensure grants are utilized as required by policy and criteria. With respect to the child care subsidy program, we will also be exploring options for enabling claim payments to be made in secure and efficient manner through an online system.*



Why we did this audit:

- Roughly \$80 million per year for new schools and major renovations
- Many schools in Nova Scotia in need of repairs or replacement
- Enrollment is dropping in many areas of the province
- Up to \$200 million in decisions pending for P3 schools
- Sound decision making and capital planning protects public finances

Overall conclusions:

- Overall, the Department is doing a poor job of planning for new or renovated schools
- Eastern Passage High approved for \$21 million, despite no evidence of need
- Government approved four school projects for \$63 million which were ranked significantly lower by public service evaluating committees who review capital submissions
- Despite 17 years to prepare, Department failed to take timely and appropriate action on the future of P3 schools

What we found in our audit:

- Department is not conducting multi-year capital planning for schools
- Annual decisions are ad hoc and often without supporting evidence
- New projects and school closure decisions are approved without considering how connected these decisions are
- Department selects new projects and school boards decide on closures and grade reallocation independently
- School Capital Construction Committee decisions were not supported by analysis for one of the two years we examined
- Final decisions on capital projects rests with Executive Council, which we do not audit
- New Eastern Passage high school will leave Cole Harbour and Auburn Drive high schools at less than 50% combined use
- New schools in Bridgetown and Tatamagouche and renovations to schools in Truro and Wolfville were approved by Executive Council while ranked significantly lower by the committees examining capital planning
- Department spent \$700 million on P3 schools and would pay up to \$200 million more to purchase all 39, but has failed to appropriately manage P3 decisions to date



Recommendations at a Glance	Auditee Agreement and Page Reference
Recommendation 2.1 The Department of Education and Early Childhood Development should work with school boards to have a coordinated and comprehensive long-term capital plan for schools considering all relevant factors.	Agree 30
Recommendation 2.2 The Department of Education and Early Childhood Development should work with Department of Finance and Treasury Board to develop a school-specific form for tangible capital asset requests which captures the relevant information needed for analysis.	Agree 31
Recommendation 2.3 The Department of Education and Early Childhood Development should review the decision to build a new high school in Eastern Passage and its impact on the surrounding schools.	Does Not Agree 34
Recommendation 2.4 The Department of Education and Early Childhood Development should establish and follow a consistent and clear process for evaluating capital project requests to support long-term capital planning. All new school and renovation projects should follow this process.	Agree 34
Recommendation 2.5 The Department of Education and Early Childhood Development should immediately develop and implement a process to assess future P3 decisions that provides sufficient time for all parties to make decisions and incorporates a full assessment of factors including: <ul style="list-style-type: none">• the cost of operating and maintaining schools;• projected enrollment in the school area to assess the length of time a school will be needed; and,• actual future lease rates provided by the developer.	Agree 38

2 School Capital Planning

Background

- 2.1 In 2015-16, there were 389 public schools across Nova Scotia, with provincial enrollment of over 118,000 students from grades primary to twelve. The Department of Education and Early Childhood Development is responsible for informing Executive Council on decisions related to new schools and significant renovations to existing facilities.
- 2.2 School closures are the responsibility of school boards and require the completion of a comprehensive review as outlined in the Education Act and the School Review Policy established by the Minister.
- 2.3 The Department convenes a multi-departmental committee, the School Capital Construction Committee, to review capital priorities submitted by the school boards. These proposals are scored against a set of criteria, ranked, and submitted to the Tangible Capital Asset Committee at the Department of Finance and Treasury Board. After review and ranking by the Tangible Capital Asset Committee, projects are submitted to Treasury and Policy Board for final approval.
- 2.4 The Department's budget for new school construction and renovations for the past five years has been approximately \$80 million per year (this includes funding for ongoing construction).

Fiscal Year	2012-13	2013-14	2014-15	2015-16	2016-17
Budget	\$79 million	\$84 million	\$82 million	\$82 million	\$82 million

Audit Objectives and Scope

- 2.5 In spring 2016, we completed a performance audit of the Department of Education and Early Childhood Development's capital planning process. The purpose of the audit was to determine if the Department has adequate processes to allocate available school capital funding to the areas of highest priority based on needs. We conducted the audit in accordance with sections 18 and 21 of the Auditor General Act and auditing standards of the Chartered Professional Accountants of Canada.
- 2.6 The objectives of the audit were to determine whether the Department of Education and Early Childhood Development:



- has a clearly-defined, long-term capital plan for the provincial school system;
 - makes capital decisions which are consistent with long-term plans;
 - followed its required procedures for allocating school capital funding and made decisions which are supported by evidence; and
 - has completed its due diligence in preparing to make decisions on the future of P3 schools.
- 2.7 Criteria were developed specifically for this engagement by our Office. The criteria were discussed with, and accepted as appropriate by, senior management at the Department of Education and Early Childhood Development.
- 2.8 Our audit approach consisted of interviews with management and staff at Education and Early Childhood Development, as well as staff at Finance and Treasury Board, and examination of any policies and procedures or other relevant documents to determine the capital planning process. We tested a sample of capital funding decisions to determine if the Department is following the process and making supported decisions. We examined supporting documentation as applicable. Our audit period covered April 1, 2011 to March 30, 2016. We examined documentation outside of that period as necessary.

Significant Audit Observations

School Capital Planning Process

Conclusions and summary of observations

We found that the Department of Education and Early Childhood Development has not given adequate attention to capital planning. There is little information on the general condition of the almost 400 schools in the province and no long-term plan for the provincial school system. The Department does not have documented processes to guide capital planning and decision-making practices are ad hoc and unsupported. This results in inconsistent and potentially poor decisions, as was evident in our testing. We found decisions were not supported by sufficient analysis, used unsubstantiated information, and in some cases, were not consistent with committee rankings. We are particularly concerned by decisions which appear to contradict information on which areas are most in need of new schools or significant renovations. We understand that ultimately Executive Council makes the final decisions. Beyond the information provided by the Committee, we do not



know what Executive Council's rationale is for approving school projects. Clear and consistent processes increase accountability and decrease the risk of poor decisions, which is particularly important when funding is limited.

► **There is little importance placed on capital planning within the Department**

- 2.9 *Focus on capital planning required* – We found there is little importance placed on school capital planning at the Department of Education and Early Childhood Development. There is no dedicated staff responsible for capital planning in a manner which examines the school infrastructure system as a whole. While management told us that the Executive Director of Facilities Management is responsible for acting as the Chair of the School Capital Construction Committee, and as the Department's representative on the Tangible Capital Asset Committee, there is no job description for this role. During our audit, the Department prepared a description, but it was focused on the management of school capital projects after they are approved, rather than the process required to plan and approve projects.
- 2.10 There is no long-term or multi-year capital planning within the Department and key information, such as details on facility conditions across the province, are not collected. Since spring 2015, school boards are required to complete a long-range outlook annually; however, this document provides only a high-level view of expected school enrollment. The long-range outlook does include some information on building condition, but at a very basic level, and the Department does nothing further with this information. Proper planning requires a long-term view including multi-year funding commitments. Key information such as school condition is important for this, but is also necessary for annual decision making. The failure to obtain basic information is an indication of the lack of overall attention paid to school capital planning at the Department.
- 2.11 *Lack of collaborative decision making* – Decision-making responsibilities for capital planning are divided between the Department and school boards, despite being interdependent. The Department is responsible to approve new schools and major renovations, while school boards are responsible to close schools and reallocate grade levels to make the best use of existing facilities.
- 2.12 School boards are required to make school closure decisions before any funding for a new school is approved and the closure decision cannot be contingent on funding. A school review is required prior to the closure of any school. The School Review Policy directs school boards on their role and serves two overall purposes. It is intended to guide school closure decisions made by school boards by establishing criteria for assessment and it helps ensure that school reviews are consistent across the province. The review process includes developing a plan to be implemented following a closure decision; however, if the transition plan involves renovations or a new school,



there would be nowhere to put the students impacted by the board's decision to close the school if the funding for a new school is not subsequently approved by the Province. It is difficult to understand how this approach supports sound capital planning.

- 2.13 The Department faces a similar challenge with P3 school decisions. The Department may prefer to keep some P3 schools while closing nearby schools, but the Department cannot make the decision to close a school. Instead they allow the school board to make the decision on what schools they require, regardless of what an analysis may indicate. Further concerns on this issue are addressed in more detail later in this chapter.
- 2.14 Decisions on new school construction and renovations are made based on a traditional government funding cycle of one year. This can result in years in which no new projects are approved as all available funding is required for previously-approved projects. We noted some concern from school boards with the capital planning process, particularly around the year-by-year approach to planning and the disjointed nature of decision making between the Department and school boards. This process is inefficient for planning purposes and leaves school boards to make decisions based on hypothetical future funding scenarios. A long-term capital plan in which Department and Board decisions are linked would be a more strategic approach.

Recommendation 2.1

The Department of Education and Early Childhood Development should work with school boards to have a coordinated and comprehensive long-term capital plan for schools considering all relevant factors.

Department of Education and Early Childhood Education Response: The department agrees with the recommendation there be a coordinated and comprehensive long-term capital plan for the school system, and also recognizes the current governance structure, defined in the Education Act, assigns school boards with responsibility for the control and management of its schools, including the identification of capital needs. All school boards have long-term plans. Based on this governance structure, the department expects board facilities and operations staff to provide the analysis referenced by the Auditor General to their elected boards to inform capital needs.

Within this governance structure, the department has taken steps to improve capital planning. Since 2014, government has required school boards to complete long-range regional plans for their schools. Those have been completed and are the basis for more detailed discussions between the department and school boards.

The current provincial budget process provides annual funding approvals for schools. However, the department is in discussions with the Department of Finance and Treasury Board on a multi-year capital planning process for schools.



- 2.15 *Poor support for capital decisions* – The Department evaluated capital project proposals from school boards twice between 2011-12 and 2015-16. The School Capital Construction Committee was convened each time. We found no terms of reference or documented responsibilities for the Committee and our testing showed the number of committee members scoring each proposal varied, as did the process followed. An overall casual approach to decision making and the lack of defined processes from the Department has led to inconsistent results lacking adequate support or explanation for decisions.
- 2.16 Management told us that the Committee may conduct site visits as part of their evaluation, but we found no defined process for the visits and visits are not documented. We therefore cannot determine the objective of the visits, whether the members who attended were qualified to meet the objective, what was observed, or whether a visit even occurred.
- 2.17 We attempted to test decision making for the two years that projects were assessed by the Committee. The 2013-14 evaluations were limited to a final score out of 100 with no documentation of the review process, or even a scoring breakdown on a per criteria basis. As there was no detail or support for scores available, we were unable to assess whether the evaluation of projects was reasonable. Documentation for the 2014-15 evaluations included a breakdown of the score by criteria, although there was minimal justification for the overall score. Qualitative assessment of proposals was limited, but based on the information available we found that the scoring was reasonable. However, final government decisions did not always follow the scoring results as described later in this chapter.
- 2.18 A standard provincial tangible capital asset request template is used for school board submissions. We noted in our testing that a large number of sections were not completed on many of the submissions. Sections of the template, such as return on investment, information management and policy, regulations and legislation were often left blank as there was nothing relevant to the submission. A school specific request form would ensure the Department and school boards capture the necessary information to assess school capital requests.

Recommendation 2.2

The Department of Education and Early Childhood Development should work with the Department of Finance and Treasury Board to develop a school-specific form for tangible capital asset requests which captures the relevant information needed for analysis.

Department of Education and Early Childhood Education Response: The department agrees that adjusting the tangible capital request template to make it more relevant to school capital construction would be helpful. For example, the



standard template has sections that do not apply to school submissions. Template revisions could also support the evaluation of proposals submitted by school boards.

The department is consulting Finance and Treasury Board on how to best implement this recommendation.

2.19 *No process or due diligence* – The risk of poor decision making increases when the process is not defined and documentation and justification of decisions is not required. We identified several unsupported decisions during our audit, each of which approved a new school or renovation that was either not being requested by the local school board or had been scored lower by the committees than other projects which were not approved.

► **New Eastern Passage high school not requested by school board in last 12 years**

2.20 *Eastern Passage high school* – In April 2012, the Province announced a new high school for Eastern Passage and renovations to Cole Harbour District High School, including a skilled trades centre. A proposal for a high school in Eastern Passage was submitted as a priority of Halifax Regional School Board in 2004 but was not recommended by the Department at that time. Neither project was submitted in recent years as a priority of the school board. As the projects were not submitted as a school board priority, they were not evaluated by the School Capital Construction Committee and were approved outside of the practice we described earlier in this chapter.

2.21 A report completed for the Halifax Regional School Board in 2010 indicated there was no need for a new school in Eastern Passage, and a 2007 report went further, suggesting that one fewer high school would be feasible for the area within 10 years. Although no evidence of further consultation or detailed plan could be provided by the Department, the government announced plans for a new school in April 2012. The cost for the new school is budgeted around \$21 million and construction is to begin in the fall of 2016.

2.22 A key argument in favour of adding a new school to the area was the impact that adding a new skilled trades centre at Cole Harbour High would have on enrollment. Information provided to the Policy and Priorities Committee estimated 300-400 students outside the current school area, but within Halifax Regional School Board, would elect to enter the program. Those new students would replace the approximately 400 students that would leave Cole Harbour High to attend the new high school. Ultimately, 87 students entered the program in 2015-16 and no students were accepted into the program from outside of the school's boundaries. This appears to be due to high demand from local students and the existence of other skilled trade centres in three high schools in the region, along with an automotive program at Auburn Drive High. Therefore the program has had no impact on enrollment at Cole Harbour High. The Department was unable to provide explanation or support for its original position or estimate.



2.23 *System-wide impact of decisions* – There is no evidence to support the need for additional high school capacity in the Cole Harbour and surrounding areas, in fact the enrollment figures of local schools clearly show it is not required. Enrollments in 2015 for Cole Harbour High and Auburn Drive High, which are 1.5 kilometers apart, show the schools are just over 70% of their capacity. This figure drops below 50% when estimating the enrollment in 2018 after the new school in Eastern Passage opens.

School	Capacity	2015 Actual	2015 Utilization	2018 Estimate (including new high school*)	2018 Utilization
Cole Harbour High	1032	835	81%	325	31%
Auburn Drive High	1352	846	63%	854	63%
Total	2384	1681	71%	1179	49%

Source: HRSB 2016 Long-Range Outlook

* Based on 2015 enrollment in applicable grades at Eastern Passage area junior high schools

2.24 Cole Harbour High received \$12 million in funding for renovations which were completed in 2015 and the long-range plan for Auburn Drive High includes minimal concerns with building condition. Each school offers specific advantages for high school programming which the province has already invested in. Cole Harbour High has a newly built skilled trades centre and Auburn Drive High has an automotive shop. However, with a new high school in Eastern Passage, operating two large high schools so close together at less than 50% capacity would not be fiscally prudent.

2.25 There is currently no plan on how to address the underutilization of these schools. Any changes in grade configuration to increase enrollment at the high school level will create further empty space at some of the junior high and elementary schools in the area. A school review of the Cole Harbour High and/or Auburn Drive High family of schools was only approved by the school board in September of 2016. If the new school proceeds, the Board will need to consider various options including consolidation of high schools in the area along with probable closures of some local elementary schools as the system is adjusted to reflect the new and unnecessary capacity.

2.26 School capital planning decisions should be made based on sufficient, reasonable, and supportable analysis which considers the impact of the decision on the school system as a whole. No one at the Department could tell us what led to the desire for a new Eastern Passage High School, but the evidence provided prior to that decision consistently showed it was not necessary. No consideration was given to the impact a new school in Eastern Passage would have on schools in the surrounding area. The school board will now have to make difficult decisions regarding the future of multiple



schools at all levels across the region to avoid redundant space rather than focusing on other areas in need of attention. On a provincial level, decisions such as this reduce the funding available for all other projects and reduce the Department's ability to meet the needs of all students. No one in government can appropriately explain why this school is being built.

- 2.27 Due to the timing of the construction process, the Auditor General discussed this issue with the Deputy Minister of Education and Early Childhood Development in early September 2016 to ensure the government was aware of our concerns prior to proceeding with a construction contract. While the contract has been signed, we believe this decision should be reviewed to ensure the right approach is being taken for all students.

Recommendation 2.3

The Department of Education and Early Childhood Development should review the decision to build a new high school in Eastern Passage and its impact on the surrounding schools.

Department of Education and Early Childhood Education Response: The department does not agree with this recommendation. The current government is honoring the school capital construction commitments made by the previous government. The Halifax Regional School Board has begun a school review process for the Cole Harbour and Auburn families of schools. The process will encourage dialogue with the school communities to ensure the best outcomes are achieved for students in these areas.

Recommendation 2.4

The Department of Education and Early Childhood Development should establish and follow a consistent and clear process for evaluating capital project requests to support long-term capital planning. All new school and renovation projects should follow this process.

Department of Education and Early Childhood Education Response: The department agrees that improvements can be made to the capital planning process and documentation to increase accountability and transparency. The department has initiated discussions with the Department of Transportation and Infrastructure Renewal and school board operations directors to identify the key components of a revised school capital planning process. School boards will be required to submit business cases, considering project scope, timeframes, and arrangements for continuity of operations. Regional fairness will continue to be part of the process by government.

School boards are responsible for identifying school capital needs. The process for school capital planning, therefore, relies heavily on information provided by



elected boards. This information supports the principle of regional fairness in this decision-making.

The process also requires internal analysis from within government.

The provincial government then makes decisions on all available information.

► School capital projects approved without justification

2.28 The approved Government of Nova Scotia 2014-15 capital plan included four projects requested by local school boards which had been ranked much lower by the School Capital Construction Committee or by the Tangible Capital Asset Committee than other projects not included in the capital plan. The committees had concerns about these projects, including inadequate investigation of alternative options and less expensive options which had been ignored. In the cases of the new school construction projects in Bridgetown and Tatamagouche, assessments by the committees concluded that more consideration of possible renovations, or other options within the region, was needed. The Wolfville school evaluation included discussion of a less expensive alternative that should have been considered. Instead, government selected the more expensive option requested by the school board.

2.29 There is no evidence to support why these projects were approved ahead of other projects ranked higher by the evaluating committees, but not approved. We audited the work of the public service, but understand the ultimate decisions are the authority of Executive Council and we do not audit that part of the process. Therefore, we are lost to understand why these schools were approved given the analysis provided to us. The four school projects approved and included in government's capital plan which had been ranked much lower by the evaluating committees are shown in the table below.

School Capital Project	Type of Project	Approved Funding	TCA Committee Project Ranking (top 10 projects approved)
Bridgetown P-12	New School Construction	\$23,920,000	26
Tatamagouche P-12	New School Construction	\$21,570,000	28
Wolfville	Major Renovation	\$14,500,000	21
École acadienne de Truro	Major Renovation	\$2,500,000	19

► Public-private partnership school decisions not addressed in a timely or adequate manner

2.30 There are 39 schools across the province which are under a public-private partnership (P3) agreement and all have leases coming to an end within the next five years. Advance notification on the Province's intent to purchase,



renew the lease, or return the schools to the private service providers is required. Notification deadlines were negotiated in the original leases in 1998 and 1999, therefore the Department of Education and Early Childhood Development had at least 17 years to take action in preparing for these decisions.

Calendar Year	Notifications Due
2016	31
2017	6
2018	2

- 2.31 The Province has spent roughly \$700 million on P3 lease payments over the 20-year term for these schools and would have to pay upwards of \$200 million to purchase them all. Despite knowing the precise timelines required for these decisions, the Department has failed to fulfill its responsibility to the taxpayers and has not taken the necessary steps to make appropriate and timely decisions with respect to those schools with 2016 notification dates. Instead they have delayed to the point where school boards are rushed to make their choices and the Province is forced into a weaker negotiating position with the private service providers, thereby costing tax payers an unknown further amount to obtain the necessary delays and extensions.
- 2.32 There are two main components to these decisions: first is whether the school is needed, and if so, whether it is in the best interest of the province to lease or buy the school. It is important to note that our audit work covered a period up to June 1, 2016. Work on these decisions was ongoing at that time and we requested all information prepared by the Department up to that time. Any comments on content of the government's analysis included below are based on what they had done up until that date.
- 2.33 The responsibility for closure decisions is assigned to the school boards; meaning the first decision point is their responsibility. For those schools with notification dates in 2016, the Department sent letters in December 2015, requesting each board inform the Department 30 days in advance of the notification date whether they need each school. The provincial school review policy requires any school closure or consolidation efforts undergo a defined review process completed by the board. This process can take, on average, seven to nine months. The first eight schools had notification dates in June or July 2016, giving school boards less than six months' notice to complete a school review process. This is not sufficient time for school boards to complete a provincially-mandated review process, does not show appropriate concern for public funds, and is another indication of the lack of attention to capital planning within the Department.
- 2.34 While we noted some boards made decisions in the required time, some of these were decisions that the school was still needed and therefore did not



require a detailed review, while at least one board had started the process months in advance of being asked. One school board did not meet the deadline for the notifications due in June 2016, while another has already notified the Department they will not be initiating a school review prior to the November 2016 notification date. This leaves the Department unable to provide notification to the developers and requires negotiation of extensions. This is another example of the lack of attention to capital planning and the disjointed approach currently in place.

- 2.35 Once a school board decides it wants to keep a P3 school, the Department has to decide whether to lease or buy the school outright. There are many factors that should go into that decision, including the expected population in the area, the costs of leasing compared to buying, and any maintenance or operating costs that may be cheaper or more expensive depending on whether the Province is doing it themselves or are paying the private developer to do it as part of a lease.
- 2.36 As was evidenced by the timing of the request to school boards regarding the need for the school buildings, we found the Department's process was completely inadequate; it was both late and disjointed. There were various starts and stops in preparing an analysis of options, including work done by staff at the Department of Finance and Treasury Board. Ultimately, we were not provided any documented final decisions on the various schools, but did identify a number of concerns in the analysis we were given. As noted, these concerns relate to the approach taken and analysis prepared by government up to June 1, 2016.
- Operating expenses were not considered. The analysis was completed using an assumption that these would be the same whether the school is operated by the school board or service provider. Our 2010 audit of P3 schools noted that two developers were paid by the Province to deliver operating and maintenance services but subsequently subcontracted this work back to school boards for far less than the Province had paid. This resulted in a profit for the service provider of \$52 million over the length of the original 20-year lease. This shows that further consideration of operating and maintenance expenses are a key factor in the buy versus lease analysis.
 - The analysis focused on a 30-year lease term. The assumption is that the Province will continue leasing the school until the end of its life expectancy, without considering projected enrollments. Some schools may only be required for another 10 or 15 years, but when only a 30-year lease is considered the costs will likely suggest buying as the most economical option.
 - No proposed lease rates had been obtained from one developer, therefore no buy versus lease analysis could be performed for those



schools. It is unclear how the Department is going to make informed decisions for these schools.

2.37 The Department is creating a situation in which decisions are made without proper analysis. If the information used in completing the assessments is not accurate, complete, and supportable, the recommendations may not be reasonable or in the best interest of the Province. As this process is still underway, it is important the Department conduct a thorough analysis to obtain the best result for the Province as a whole.

Recommendation 2.5

The Department of Education and Early Childhood Development should immediately develop and implement a process to assess future P3 decisions that provides sufficient time for all parties to make decisions and incorporates a full assessment of factors including:

- the cost of operating and maintaining schools;
- projected enrollment in the school area to assess the length of time a school will be needed; and,
- actual future lease rates provided by the developer.

Department of Education and Early Childhood Education Response: The department agrees with this recommendation; a process is in place to assess P3 decisions. School boards determine their school needs, as defined in the Education Act. Treasury and Policy Board conducts extensive financial analysis.

In terms of timelines, in 2014, government required school boards to develop 10-year long-term regional outlooks. Government invested in planning software to enable boards to complete reliable enrolment projections.

Once the long-range plans were complete, the department asked boards what schools they needed. Some responded with requests outside the current contract. In some cases, this led to extension requests to allow boards to consult further with their communities. Extensions cost \$1.5 million, 0.0065 per cent of the \$230 million P3 budget.

Financial analysis could not begin until developers provided base lease rates. Based on the service agreements, developers are not required to provide these rates until a timeframe (12 or 18 months, depending on the agreement) prior to the notification dates.



Department of Education and Early Childhood Development: Additional Comments

The Education Act places responsibility for management of schools with school boards, and relies on community input on school needs through elected board members. Government also values the principle of regional fairness in decision-making, as part of all information considered in capital planning.

The current P3 process involves extensive financial analysis and school board decisions on school needs.

School boards had to determine their school needs at the right time, so plans reflect the age and condition of schools, and current and projected demographics. The current government initiated and supported a long-term planning process in 2014.

Chapter 3: AMANDA Case Management and Compliance System



Why we did this audit:

- AMANDA has Nova Scotians' information such as:
 - personal information
 - permits and inspection results related to public safety; day cares, homes for special care, elevators, and lifts
 - provincial fees and fines – \$530 million per year is monitored and/or collected.
- AMANDA was implemented in 1999 and has cost over \$50 million to date; \$4 million annually.

Overall conclusions:

- Department is better managing IT controls since our 2009 audit
- More work needed to fully comply with IT security standards
- Internal Services is managing technical services provided by Unisys but better contract management is required
- An assessment of the value for money of AMANDA is required
- User departments' needs are generally being met; however, improvements can be made in the management of services

What we found in our audit:

- Centrally-managed systems have improved consistency since our 2009 audit
- Security settings for systems supporting AMANDA are implemented, but need improvement to fully meet IT security standards
- Some departments do not have the expertise to customize reports to help them manage programs
- The Department should assess AMANDA to be sure it is providing value for money prior to the 2018 contract renewal
- Internal Services did not get feedback from user departments on how well their needs are met
- Internal Services is not reviewing Unisys reports on how well AMANDA is working
- Internal Services has not told departments to manage their own employee accounts



Recommendations at a Glance	Auditee Agreement and Page Reference
Recommendation 3.1 The Department of Internal Services should apply security configuration standards for AMANDA and its related infrastructure to protect the confidentiality, integrity, and availability of information. Configuration standards should include: <ul style="list-style-type: none">• password standards• Linux operating system configuration standards• Oracle database configuration standards	Agree 47
Recommendation 3.2 The Department of Internal Services should develop and communicate a policy requiring departments to periodically assess their employees' AMANDA access permissions.	Agree 49
Recommendation 3.3 The Department of Internal Services should better manage the Unisys contract to ensure it meets program needs and should reassess the contract terms before the 2018 renewal to ensure they meet the requirements of the Province.	Agree 50
Recommendation 3.4 The Department of Internal Services should assess the value for money of AMANDA before the June 2018 Unisys contract-end date.	Agree 51
Recommendation 3.5 The Department of Internal Services should develop and use a process to prioritize department change requests.	Agree 53
Recommendation 3.6 The Department of Internal Services should develop and use a process to periodically obtain and assess feedback from client departments on whether AMANDA and related services meet their needs.	Agree 54

3 AMANDA Case Management and Compliance System

Background

- 3.1 The AMANDA Case Management and Compliance System (AMANDA) is a commercial software product used by government departments to manage the processing of business licensing, permits, registration, certificates, rebates, and collections. AMANDA is also currently used for the regulation of alcohol, gaming, fuel, and tobacco activities. System information includes names, addresses, birthdates, debt owed, and inspection reports.
- 3.2 In the late 1990s, the Province relied on eight databases to store registration and licensing information. AMANDA was selected to centrally store information and eliminate the duplication of information contained in those eight databases. It was also integrated with systems from Workers Compensation Board and Canada Revenue Agency.
- 3.3 The Province approved AMANDA in 2012 to be the standard application to support the processing of business licenses and permits. Provincial departments, agencies, and commissions using AMANDA include:
- Agriculture
 - Community Services
 - Education and Early Childhood Development
 - Environment
 - Fisheries and Aquaculture
 - Labour and Advanced Education
 - Natural Resources
 - Nova Scotia Liquor Corporation
 - Service Nova Scotia
 - Tourism Nova Scotia
 - Workers' Compensation Board
- 3.4 In 2015, responsibility for AMANDA was transferred from Service Nova Scotia to the Department of Internal Services, Information Communications and Telecom Services division. That division's mandate is *"to provide quality services and supports that allow other government departments*



and public service entities to deliver the programs and services Nova Scotians rely upon.” It is responsible for the government’s IT infrastructure, including the hardware and software for departments’ business applications, the government network, telecommunications, and the provincial data centre.

- 3.5 The application support for AMANDA has been outsourced to Unisys Canada Inc. This includes providing access for government employees and making changes requested by government departments. Unisys also investigates and resolves IT issues impacting AMANDA and monitors system performance. Departments are responsible for ensuring their employees have access to AMANDA as needed to perform their job responsibilities.
- 3.6 Under its contract with Unisys, the Province pays monthly fees for two levels of service: base and extended.
- 3.7 Base service covers the day-to-day management of AMANDA and the provision of technical support to the Province’s employees who utilize the application. This includes providing, modifying, and removing access accounts and permissions, fixing the application when it is not working properly, or addressing difficulties employees may encounter, such as resetting forgotten passwords.
- 3.8 Extended service covers changes to the application to meet new business needs of client departments.
- 3.9 On average, the Province pays Unisys \$4.0 million a year for all technical services the company provides, including the base and extended services.

Year	Technical Support Fees (millions)
2015-16	\$3.3
2014-15	\$4.8
2013-14	\$3.6
2012-13	\$4.3
2011-12	\$4.0

Audit Objectives and Scope

- 3.10 In summer 2016, we completed a performance audit of the Province’s use of AMANDA. When this application was first implemented, Service Nova Scotia was responsible to manage the Province’s contract with Unisys; however, on April 1, 2015, responsibility was transferred to the Department of Internal Services.



- 3.11 Our audit period was January 1, 2015 to December 31, 2015. The audit period included the period from January 1, 2015 to March 31, 2015 when Service Nova Scotia was responsible for AMANDA; however, all recommendations in this chapter are addressed to the Department of Internal Services because it is now responsible for AMANDA.
- 3.12 We carried out audit work in a sample of five departments that utilize AMANDA to support their business needs.
- Community Services
 - Education and Early Childhood Development
 - Environment
 - Labour and Advanced Education
 - Service Nova Scotia
- 3.13 The purpose of the audit was to determine whether Internal Services has controls over the information stored in AMANDA to protect the privacy, reliability, and availability of the data and if AMANDA supports the operational and strategic needs of its users.
- 3.14 The objectives of the audit were to determine:
- if there are adequate controls to:
 - reduce risks impacting AMANDA; and
 - protect the confidentiality, accuracy, and availability of information in AMANDA;
 - whether there are processes in place to monitor and evaluate those controls;
 - whether contracts applicable to AMANDA are monitored to ensure services are received in compliance with contract terms and contract goals are achieved; and
 - whether AMANDA meets the operational and strategic needs of its users.
- 3.15 The information that is obtained and stored in AMANDA is used to collect money owed to the Province (2015-16 – \$530 million) and to complete inspections or licensing in such areas as day cares, homes for special care, food safety, elevators, and lifts. In 2015-16, the Province collected \$9 million in business registration, permit, and license fees.



- 3.16 We conducted the audit in accordance with sections 18 and 21 of the Auditor General Act and auditing standards of the Chartered Professional Accountants of Canada. Certain audit criteria were derived from Control Objectives for Information and Related Technology, an internationally recognized IT control framework, while others were developed by our Office specifically for this engagement. Criteria were accepted as appropriate by senior management of the Department.
- 3.17 Our audit approach consisted of interviews with management and staff; tests of relevant processes; and an analysis of IT security, data integrity, and contracts. We examined records for the period from January 1, 2015 to December 31, 2015 and evaluated system settings at the point in time of testing.

Significant Audit Observations

Management of Information Technology Controls

Conclusions and summary of observations

AMANDA and its supporting systems have settings that do not fully meet the Province's IT security standards. We found weak passwords, weak failed login settings, and other settings, which should be improved. We also found that Departments are not properly managing employees' AMANDA access permissions. However, we did note significant improvements in the management of IT controls from an audit we conducted in 2009. Additionally, Unisys is properly performing services under its contract with the Province.

► Settings do not fully meet provincial security policies and standards

- 3.18 *Internal Services* – The Department of Internal Services is responsible for defining and applying IT security policies and standards. Among other things, IT policies and standards address password length, password difficulty, and account lockout limits. Weak security settings give individuals the opportunity to gain unauthorized access to view, modify, or delete information.
- 3.19 We assessed settings in AMANDA, as well as those of supporting systems, against the Province's IT security policies and standards. Supporting systems are management software, monitoring software, operating systems, databases, and user access management software.
- 3.20 We identified systems that do not fully meet the Province's IT security policies and standards. We found weak passwords, weak failed login settings,



and other settings for both the AMANDA database and its operating systems which should be improved.

- 3.21 While improvements are required to fully meet IT policies and standards, we did note significant improvements in the management of information technology from an audit we conducted in 2009. This includes the implementation of administrative software to centrally manage systems and to compare security settings against standards. This helps promote consistency across systems. However, not all improvements have been applied to AMANDA. Internal Services administrators told us that upgrades are required and will be performed within the next year to support these new management tools.

Recommendation 3.1

The Department of Internal Services should apply security configuration standards for AMANDA and its related infrastructure to protect the confidentiality, integrity, and availability of information. Configuration standards should include:

- password standards
- Linux operating system configuration standards
- Oracle database configuration standards

***Department of Internal Services Response:** As the steward of much of the Province's data, ICT Services understands the responsibility it has to protect the confidentiality, integrity, and availability of information. ICT Services currently uses standards and best practices to protect and secure the data. ICT Services will evaluate current standards and controls in place and additionally will ensure that AMANDA and related infrastructure meet the standards in the recommendation. The evaluation will be completed and a work plan developed Q2 of fiscal year 2016/17.*



Unisys is performing the technical support services contracted by the Province

- 3.22 *Unisys* – The Province contracts with Unisys to provide day-to-day technical services related to AMANDA. This includes making requested changes, providing government employees with access, solving user problems, and managing IT resources to ensure they are available. We assessed these services and found that Unisys is properly:

- performing changes requested by the Province;
- granting access to AMANDA for government employees;
- addressing employee problems with using AMANDA;
- identifying underlying issues that could be causing recurring problems for employees; and
- monitoring and managing the performance and capacity of the system.



Internal Services needs to communicate departments' responsibility to manage employee access

- 3.23 *Access management: government departments* – While Unisys is responsible for managing and completing access changes, government departments are responsible to determine the access their employees require. This includes requesting that Unisys provide, change or remove access when it is no longer required.
- 3.24 We would expect user departments to periodically review their employees' permissions to ensure they only have the access they need to perform their job responsibilities. However, we found that Internal Services has not told department management it is responsible to periodically review permissions. Staff in some of the departments we visited told us they performed reviews of employees' permissions, but they were not aware that this was a requirement. Staff in other departments told us they were not aware of this requirement and have not reviewed employee access to confirm it is appropriate.
- 3.25 While we did not audit departments' reviews of their employees' access, we tested a sample of user accounts and found departments were not properly managing their employees' access. We looked at user accounts to determine if they were:
- Dormant – accounts owned by employees who no longer need access or accounts for terminated employees which should have been disabled or deleted
 - Generic – accounts for administrative or temporary training purposes. These are risky because often no one is monitoring the account
 - Excessive – accounts with more access than the employee needs
- 3.26 *Dormant* – Of the 1006 AMANDA user accounts, we identified 197 as potentially belonging to employees who are no longer employed by the Province. We examined 30 of those accounts and found 18 were no longer required. Department management told us that employees are assigned work in AMANDA and when they are no longer employed by the department or change job responsibilities, that work must be reassigned to other employees before the accounts can be deleted. There is no process to secure the account during this transition period to prevent someone from using it to access the system.
- 3.27 *Generic* – We identified 25 generic accounts and department management confirmed that 13 should have been disabled.
- 3.28 *Excessive* – We selected a sample of 30 employees with access to AMANDA to determine if they could only view those areas they required for their job.



We have concerns with 10 of the accounts we tested. Two accounts were not needed and should have been removed and eight employees had more access than required for their current positions. Staff told us they had asked for one of the accounts to be removed but that did not occur.

3.29 *Role-based access* – When computer administrators assign access to each individual employee, there is increased risk that mistakes can be made and employees will have more access than they need to do their job. Role-based access helps reduce this risk. It creates groups with access permissions related to performing specific job responsibilities. This reduces the need for IT administrators to assign individual permissions.

3.30 Internal Services management told us Unisys is working with some departments to create user roles; others had not created roles at the time of our audit. Unisys management told us that new or updated roles are not always tracked to ensure they have been properly approved and are appropriate.

Recommendation 3.2

The Department of Internal Services should develop and communicate a policy requiring departments to periodically assess their employees' AMANDA access permissions.

Department of Internal Services Response: The AMANDA system is currently undergoing a review of current policies and operating model. Work is anticipated to be completed before the end of Q2 of the 2017/18 fiscal year that will enable ICT Services to deliver AMANDA as a corporate service. ICT Services will as part of that work, create a policy that will require departments that use AMANDA to periodically review access permissions.

Contract Management

Conclusions and summary of observations

Internal Services is not properly monitoring its contract with Unisys. Although the company provides performance reports, Internal Services is not reviewing these reports. Since 2004-05, the Province has paid Unisys over \$50 million for its services, an average of \$4.0 million annually. A value-for-money assessment for AMANDA should be performed prior to renewing the contract in 2018.

► **Province is not properly managing its contract with Unisys for AMANDA technical support**

3.31 *Lack of oversight* – There is a lack of management oversight of the Province's contract with Unisys. The steering committee, consisting of Unisys and



department management, is responsible for the overall management of the contract and is contractually required to meet quarterly to review Unisys performance. We found the steering committee did not meet as required, but staff meetings at an operational level were held monthly to discuss performance issues. Internal Services management told us that organizational changes have resulted in the steering committee meetings not occurring as required.

- 3.32 Unisys is providing the contractually-required monthly performance reports, which include information on meeting targets as outlined in the contract. We found no evidence that the Department was reviewing these reports.
- 3.33 *Required contract terms* – In addition, provincial contracts with service providers are supposed to include terms to meet the Province’s IT security policies and standards. However, the contract with Unisys does not include such terms. Unisys staff must sign off indicating they have read Nova Scotia’s security policy; however, there is no indication that they have also read and agreed to the Province’s IT standards.
- 3.34 The Province has a long relationship with Unisys and management believes less oversight is needed than what was defined in the contract. Without proper oversight, the Department cannot ensure contract terms are fulfilled to the level required.

Recommendation 3.3

The Department of Internal Services should better manage the Unisys contract to ensure it meets program needs and should reassess the contract terms before the 2018 renewal to ensure they meet the requirements of the Province.

Department of Internal Services Response: ICTS Services is in the process of developing a governance structure that will engage clients and therefore will be able to assess whether the Unisys contract is meeting the program needs. Contract management is a critical component used to ensure value is delivered for the services that are paid for. The AMANDA contract is set to expire in 2018 and, as a result, ICT Services will soon begin the procurement process to obtain a new AMANDA support contract.



Province needs to assess the value for money of AMANDA

- 3.35 *Assessment of services* – Prior to the 2010 Unisys contract renewal, Service Nova Scotia hired consultants to perform an analysis for future technical support of AMANDA. The analysis considered three options.



Consultant Options Assessed	
Option 1	Move services in-house
Option 2	Tender from other companies for some or all services
Option 3	Maintain services with Unisys

- 3.36 The analysis concluded that it would take seven years for the Province to have savings if it selected option 1. The Province decided to continue with option 3 and maintain existing services with Unisys. However, there were other options which could have been considered. For example, processing credit card payments was not assessed separately from providing the day-to-day technical services Unisys provides. Similarly, the analysis did not assess if there would be savings if the Province completed system changes and provided day-to-day technical support for AMANDA while contracting with Unisys for other services.
- 3.37 The consultant report also noted the Province is highly dependent on Unisys for AMANDA and recommended contracting with more than one service provider. The Province did not implement that recommendation and all services supporting AMANDA are still provided by Unisys. If Unisys were no longer able to provide technical support services for AMANDA, it could take time to find a replacement; this could impact the Province's ability to use the application.
- 3.38 *Costs of operating AMANDA* – The Province has paid Unisys over \$50 million for AMANDA since 2004-05 (licensing fees – \$8 million, technical support fees – \$45 million). Unisys services include the daily maintenance and administration of the application and changes requested by departments. Annual spending is approximately \$4 million per year. The current contract expires in June 2018.
- 3.39 The continuous yearly costs for technically supporting and maintaining AMANDA warrant an analysis to determine if the Province is receiving value for money from AMANDA. This should be completed before the current contract ends in 2018. A value-for-money assessment would help identify whether the Province is receiving economy, efficiency, and effectiveness for the funds spent on AMANDA.

Recommendation 3.4

The Department of Internal Services should assess the value for money of AMANDA before the June 2018 Unisys contract-end date.

Department of Internal Services Response: *The AMANDA service was transitioned to ICT Services as part of the creation of the Province's Shared Services initiative in April 2015. A review of the AMANDA service and how to deliver it as a corporate service is underway and will necessitate a review of the*



support model options going forward. This work will be completed prior to issuing an RFP for a new AMANDA support contract.

Service Management

Conclusions and summary of observations

Although AMANDA is the standard for business permitting and licensing, this system was selected without consultation with potential stakeholders. Internal Services can improve support provided to other departments using AMANDA to ensure the application is meeting their business needs. Departments identified inefficiencies in completing their work because of limitations in accessing information from the system. Improvements are required to prioritize requests from departments to ensure the most important changes are made first.

- 3.40 *Designated application for government* – AMANDA was implemented in 1999 for Service Nova Scotia; however, in 2010, AMANDA was assessed to determine if it could support the business needs of another department. The assessment found that it would be useful to many other departments performing similar functions. AMANDA was approved in 2012 to be the government standard for business permitting and licensing.
- 3.41 The ability to customize AMANDA to meet the needs of different departments was a key factor in making it the government standard. However, there was no consultation with potential stakeholders or a consideration of costs associated with making changes to the application over time. As departments began to use AMANDA, they were each responsible to cover the costs of customizing the application to meet their business needs. Internal Services management told us the assessment process to select standard applications has matured and now includes assessing costs and meeting with stakeholders.

► A formal process is required to prioritize department change requests

- 3.42 *Changing AMANDA to meet department needs* – The Department of Internal Services is responsible for working with departments to ensure AMANDA meets their needs. Unisys is primarily responsible for day-to-day technical support, including implementing changes to AMANDA to suit specific business requirements for individual departments. Under the Province's contract with Unisys, Nova Scotia pays minimum and maximum monthly fees (\$43,000 to \$72,000) for these services. Internal Services recovers costs from the department requesting the changes.
- 3.43 Historically, Service Nova Scotia's changes were prioritized separately from other departments' requests for change. This practice continued when Internal Services took responsibility for managing AMANDA. It results



in there being two lists of change requests and Internal Services having to decide which changes should take priority. There is a risk one department may not have its business needs met while it waits for another department to receive a less important change. There is also no forum for all users to share ideas or identify changes that could benefit all departments. This can lead to delays as each department waits for its own solution to a common problem.

Recommendation 3.5

The Department of Internal Services should develop and use a process to prioritize department change requests.

Department of Internal Services Response: *ICT Services has begun a review of the AMANDA service. This review includes the governance structure of AMANDA. It is expected that current prioritization challenges will be addressed by a modernized corporate governance model. This work is expected to be complete by end of Q2 in the 2017/18 fiscal year.*

► **Departments have concerns with the services supporting AMANDA**

3.44 *Supporting services* – We met with staff from five government departments that use AMANDA and asked if the application was effectively supporting their business and reporting needs. Staff told us that AMANDA generally supports their needs; however, they have concerns with the services supporting the application.

- Internal Services has not requested feedback from user departments about services provided.
- Some departments lack the expertise to create custom reports which would help them manage their program.
- The application is not very user-friendly and has a steep learning curve.
- There is no forum between departments to discuss success, issues, or changes related to AMANDA.

3.45 Staff in several departments also told us there can be difficulties using AMANDA in the field to complete checklists. In some cases, staff members complete their required checklists or inspection notes on paper and then enter those notes into AMANDA later. This duplication is an inefficient use of resources and staff time.



Recommendation 3.6

The Department of Internal Services should develop and use a process to periodically obtain and assess feedback from client departments on whether AMANDA and related services meet their needs.

***Department of Internal Services Response:** As the AMANDA corporate service is modernized, ICT Services will regularly engage with client departments to gather feedback. Feedback will be assessed looking for ways to add value to the corporate service and increase our client department satisfaction. The work to create this engagement model will be completed by end of Q2 of the 2017/18 fiscal year.*



Why we did this audit:

- Critical infrastructure is required for the health and security of Nova Scotians, including the economy
- Impacts on everyday life – drinking water, transportation, food, power, communications, and health care
- Rate and severity of natural disasters is increasing; as are intentional threats
- Province must ensure critical infrastructure is available when needed or that options are presented

Overall conclusions:

- Executive Council has not assigned responsibility for the critical infrastructure program
- Province has not identified all operators of critical infrastructure that could impact the Province
- Province has not identified critical infrastructure it owns, except for the health sector
- Province has not done what it signed on to do under the National Strategy

What we found in our audit:

- No department given responsibility for a critical infrastructure program. However, the Emergency Management Office:
 - had senior management direction to act, but not given mandate
 - agreed to the National Strategy for Critical Infrastructure in 2009
 - has some critical infrastructure responsibilities
- There have been communication weaknesses with government responses to events:
 - 2015 fuel disruption
 - 2014 post-tropical Storm Arthur
- Emergency Management Office's list of critical infrastructure partners is incomplete
- The Province has not identified its critical infrastructure and reliance on other critical infrastructure is not known
- Many departments were not aware of the National Strategy for Critical Infrastructure
- Department of Health & Wellness has a risk management process for critical infrastructure in the health sector
- Transportation sector has not done risk assessments for the Canso Causeway or section of highway near Amherst



Recommendations at a Glance	Auditee Agreement and Page Reference
Recommendation 4.1 Executive Council should clearly define if the Emergency Management Office is responsible for establishing a critical infrastructure program, and if not, assign responsibility to another department.	Agree 62
Recommendation 4.2 The Emergency Management Office should develop and execute a strategy for implementing the National Strategy and Action Plan for Critical Infrastructure in the province.	Agree 63
Recommendation 4.3 The Emergency Management Office should identify critical infrastructure owners and operators having an impact on the Province, ensuring all ten sectors are addressed.	Agree 66
Recommendation 4.4 The Emergency Management Office should ensure all critical infrastructure owned by the Province is identified and have documented all-hazards risk assessments which consider interdependencies on other critical infrastructure and mitigation strategies.	Agree 69

Note: Recommendations 2 to 4 have been assigned to the Emergency Management Office because it took responsibility for the National Strategy for Critical Infrastructure when it was first released. If Executive Council assigns responsibility to another entity, these recommendations will need to transfer to that entity.

4 Critical Infrastructure Resiliency

Background

4.1 Public Safety Canada notes:

“critical infrastructure refers to processes, systems, facilities, technologies, networks, assets and services essential to the health, safety, security or economic well-being of Canadians and the effective functioning of government. Critical infrastructure can be stand-alone or interconnected and interdependent within and across provinces, territories and national borders. Disruptions of critical infrastructure could result in catastrophic loss of life, adverse economic effects, and significant harm to public confidence.”

4.2 With the goal of building a safer, more secure, and more resilient Canada, the National Strategy for Critical Infrastructure and the supporting Action Plan for Critical Infrastructure were released in 2010. Each province and territory contributed to the National Strategy and signed on as participants. Together, they established a collaborative federal, provincial, territorial and critical infrastructure sector approach to strengthening critical infrastructure resilience.

4.3 Recent natural disasters demonstrate the importance of critical infrastructure planning and the need to address interdependencies on other infrastructures. For example, in 2012 Hurricane Sandy caused severe power outages and hindered oil and gas transportation which is essential for emergency response vehicles. Combined repair and recovery costs were estimated at \$78.8 billion for the states of New York and New Jersey (US Department of Commerce – September 2013).

4.4 The National Strategy *“recognized that responsibilities for critical infrastructure in Canada are shared by federal, provincial and territorial governments, as well as local authorities, and private critical infrastructure owners and operators. It also recognized that critical infrastructure owners and operators have the expertise and information that governments need to develop comprehensive emergency management plans and, in turn, that governments have information on risks and threats relevant to owners and operators in carrying out their risk management activities.”* The supporting federal Action Plan for Critical Infrastructure is meant to *“strengthen resilience in Canada by helping to prevent, mitigate, prepare for, respond to, and recover from disruptions of critical infrastructure.”*



- 4.5 Nova Scotia classifies its critical infrastructure within the same ten sectors as defined in the National Strategy.
- Energy and utilities
 - Finance
 - Food
 - Transportation
 - Government
 - Information and communication technology
 - Health
 - Water
 - Safety
 - Manufacturing
- 4.6 Some examples of critical infrastructure and ownership are shown below.
- Federal government: police (RCMP), military, border crossings, blood supply, drug labs, medical emergency stockpiles, National Airports System, IT systems
 - Provincial and territorial governments: police, emergency medical care, roadways, transportation equipment, IT systems, water treatment facilities, hospitals
 - Municipal governments: police, fire, roadways, transportation equipment, water and wastewater treatment facilities
 - Private sector: financial institutions, power generating facilities and transmission systems, transportation including rail, flight, shipping, and trucking, farms, food processing facilities.
- 4.7 The Nova Scotia Minister responsible for the Emergency Management Office accepted the National Strategy for Critical Infrastructure on behalf of the Province of Nova Scotia in 2009.

Audit Objectives and Scope

- 4.8 In summer 2016, we completed a performance audit that considered the status of Nova Scotia's critical infrastructure. The audit was conducted in accordance with sections 18 and 21 of the Auditor General Act and auditing standards of the Chartered Professional Accountants of Canada.
- 4.9 The purpose of the audit was to determine whether the Province of Nova Scotia has effectively established the necessary partnerships and implemented an all-hazards risk management approach for critical infrastructure in order to prepare for and respond to events that could negatively impact the well-being and safety of Nova Scotians.
- 4.10 The objectives of the audit were to determine whether the Province of Nova Scotia is:



- working to ensure the resiliency of critical infrastructure required for the safety and well-being of its inhabitants; and
 - fulfilling its commitment to the National Strategy for Critical Infrastructure and the corresponding Action Plan.
- 4.11 Generally accepted criteria consistent with the objectives of the audit did not exist. Audit criteria were developed specifically for this engagement by our Office using the Canadian National Strategy for Critical Infrastructure and information collected during planning. Criteria were accepted as appropriate by senior management of the Emergency Management Office at the Department of Municipal Affairs. Senior management of the Department of Health and Wellness was also asked to review and accept the criteria due to its involvement in the National Strategy.
- 4.12 Our audit approach included interviews with management and staff of the Emergency Management Office at the Department of Municipal Affairs, and other provincial government departments with subject matter expertise for critical infrastructure sectors: Health and Wellness; Justice; Environment; Agriculture; Fisheries and Aquaculture; Energy; Finance and Treasury Board; Transportation and Infrastructure Renewal; and Internal Services. We also reviewed relevant policies, guidelines and processes and examined position descriptions, minutes, reports and other documentation.
- 4.13 We did not audit critical infrastructure owned by private entities in Nova Scotia and cannot speak to its status. We looked at whether government knows what Nova Scotia's critical infrastructure is, who is responsible for it, and whether government has established relationships with private owners of critical infrastructure.
- 4.14 Our audit period was December 2009 to July 2016, running from when the Province accepted the National Strategy to the date the audit was significantly completed.
- 4.15 This chapter has a recommendation to Executive Council that it clarify who is responsible for establishing a critical infrastructure program in Nova Scotia. The remaining recommendations have been assigned to the Emergency Management Office because it took responsibility for the National Strategy for Critical Infrastructure when it was first released. If Executive Council assigns responsibility to another entity, these recommendations will need to transfer to that entity.



Significant Audit Observations

National Strategy for Critical Infrastructure

Conclusions and summary of observations

The Province does not have an implementation plan to meet its commitment to the National Strategy for Critical Infrastructure. There are elements of a program in place to help ensure the resiliency of the critical infrastructure required for the safety and well-being of Nova Scotians, but not a complete program engaging all sectors. In 2009, the Minister responsible for the Emergency Management Office agreed on behalf of the Province to implement the National Strategy and Action Plan for Critical Infrastructure. Emergency Management took responsibility but there was no formal mandate for this program and over time, it has not taken a leadership role in implementing a program to meet the objectives of the National Strategy. With the exception of the health sector, critical infrastructure owned by government has not been identified, the Emergency Management Office does not have a complete list of private sector critical infrastructure owners, and working groups for the remaining nine sectors have not been established.

- 4.16 *Background* – The National Strategy for Critical Infrastructure includes ten critical infrastructure sectors, most of which link to provincial government departments or agencies having subject matter expertise of the sector. For example, the health sector aligns with the Department of Health and Wellness; the energy sector aligns with the Department of Energy.
- 4.17 A critical infrastructure oversight function within the provincial government should ensure departments and agencies with expertise are assigned to appropriate sectors and are made aware of provincial responsibilities included in the National Strategy and Action Plan for Critical Infrastructure.
- 4.18 A provincial program would identify relevant owners and operators of critical infrastructure having an impact on the Province of Nova Scotia, including private sector partners. To succeed, the program would develop partnerships with identified parties and use a framework to share information before, during, and after events impacting critical infrastructure.

► **Emergency Management Office committed to implement National Strategy but has no plan**

- 4.19 The Emergency Management Office was involved in discussions and providing feedback along with the federal government and other provinces and territories when the National Strategy for Critical Infrastructure was drafted. In late 2009, the Minister responsible for the Emergency Management Office accepted the National Strategy and Action Plan for Critical Infrastructure on behalf of the Province.



- 4.20 Senior management responsible for the Emergency Management Office assigned responsibility for implementing a critical infrastructure program in Nova Scotia to that office. The Emergency Management Office included performance measures related to a critical infrastructure program in its accountability report in 2010-11. However, these measures were not tracked or reported against. Subsequent accountability reports did not include these performance measures.
- 4.21 In early 2011, the Emergency Management Office held a meeting with the Emergency Planning Officers of provincial departments. The purpose of the meeting was to explain the program and determine how to identify critical infrastructure owners within sectors. Details included on the meeting agenda demonstrate the Emergency Management Office's commitment to the National Strategy, as well as its intent to lead the program in Nova Scotia. However, this was the only meeting facilitated regarding the implementation of a critical infrastructure program across government. There have been many department restructurings and staff changes since that time and most of the current Emergency Planning Officers throughout government were not aware of the requirements of the program when we interviewed them.
- 4.22 The Emergency Management Office does not have a legislated mandate from Executive Council to implement a critical infrastructure program in Nova Scotia. However, its staff have job descriptions which assign them responsibilities related to critical infrastructure. These include:
- *“ensuring responsibility for public safety and the protection of infrastructure in the Province of Nova Scotia;*
 - *providing government with a professional, effective, efficient, and coordinated preparation for, response to, and recovery from an emergency; and*
 - *developing and implementing policy related to a critical infrastructure program in the province.”*
- 4.23 Despite this, there has been little action in recent years and there are no policies related to critical infrastructure.
- 4.24 The Department of Justice also has a unit within the Public Safety and Security Division – Security Intelligence Management Services – with critical infrastructure responsibilities. This unit is to assess threats to critical infrastructure and distribute information to those responsible for the infrastructure. Although some of the unit's work may identify security threats, the Province does not identify critical infrastructure and does not have a list of provincially-owned infrastructure to conduct threat assessments on. We also noted the unit is supposed to have five members but only two positions are filled.



- 4.25 The Government of Nova Scotia needs to assign responsibility to develop and implement a critical infrastructure program and ensure participation from appropriate departments and agencies. A program which will require collaboration among Government departments and private sector entities requires leadership to achieve buy-in and build trust. Additionally, the provincial entity responsible for the program needs the authority to require provincial government departments to comply.

Recommendation 4.1

Executive Council should clearly define if the Emergency Management Office is responsible for establishing a critical infrastructure program, and if not, assign responsibility to another department.

Executive Council Response: Agree. Executive Council Office will review and determine the appropriate responsibility for critical infrastructure.

- 4.26 Despite committing to the National Strategy, the Emergency Management Office did not have an action plan to implement the Strategy in the Province and the provincial program did not move forward after an initial meeting with department representatives. The requirements of the National Strategy and Action Plan have not been communicated to Government departments. As a result, staff and management in departments with subject matter expertise for critical infrastructure sectors are not aware that their department falls in one of the sectors.
- 4.27 The National Strategy intended that government departments with subject matter expertise would establish partnerships with relevant private sector owners and operators. For example, within the water sector, representatives from the Department of Environment would be expected to develop partnerships with water and wastewater treatment facilities to promote critical infrastructure planning and information sharing. However, provincial representatives we interviewed felt private sector owners had responsibility to protect their own infrastructure and expected that responses to incidents would be coordinated with the Emergency Management Office. Although departmental representatives may communicate regularly with critical infrastructure owners and operators within their sector, they are not engaging these owners and operators for purposes specific to critical infrastructure resiliency planning.
- 4.28 One of the National Strategy's primary objectives was to engage in partnerships and promote information sharing. There are no critical infrastructure working groups, outside of health, tasked with developing sector risk profiles and mitigation plans for critical infrastructure. There are committees and working groups, established for other purposes in critical infrastructure sectors, which have not been used to promote planning and



collaboration between partners. Government could use these groups to develop and expand partnerships with critical infrastructure owners and operators.

- 4.29 There are other mechanisms available to identify national and regional threats and risks having an impact on critical infrastructure in Nova Scotia. However, not all of these resources are fully utilized. One example is the Canadian Critical Infrastructure Gateway, an online site hosted by Public Safety Canada for the critical infrastructure community. It aims to allow information sharing among partners. During our audit, we reviewed the content of this site. We found it provides planning guides and risk identification aids that could be useful tools for representatives not experienced with critical infrastructure protection. The Emergency Management Office is not actively using or promoting this site to critical infrastructure representatives within government or the private sector.

Recommendation 4.2

The Emergency Management Office should develop and execute a strategy for implementing the National Strategy and Action Plan for Critical Infrastructure in the province.

***Emergency Management Office Response:** Agree. The Emergency Management Office is currently undertaking a review of its Critical Infrastructure Resiliency Framework. The scope of the work will include an update to reflect alignment with the National Strategy and Action Plan for Critical Infrastructure.*

Identification of Critical Infrastructure Owners and Operators in Nova Scotia

Conclusions and summary of observations

Government has not identified all critical infrastructure owners and operators in the province. Communications from government to the private sector were problematic during two recent events impacting critical infrastructure. Only the Department of Health and Wellness has identified and maintains a list of critical infrastructure in its sector. Some departments have lists available for other purposes which would aid in identifying critical infrastructure owners in their sector, but this has not been done.

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- 4.30 *Background* – The majority of critical infrastructure is owned outside of government, making partnerships between all levels of government and the private sector essential to help ensure the resiliency of critical infrastructure. Partnerships allow for timely sharing of information, which in turn, helps lead to coordinated responses by partners to events impacting critical



infrastructure. Critical infrastructure and its owner or operator must be identified before partnerships can be established.

- 4.31 Critical infrastructure systems are interdependent; one system may be needed to help recover another. For example, clear transportation routes are needed to restore power. This creates the potential for cascading effects in the event of a significant failure.

► **Government does not have a complete list of critical infrastructure owners and operators to partner with**

- 4.32 With the exception of the health sector, the Emergency Management Office has not identified all critical infrastructure owners and operators within the ten sectors and does not know if steps have been taken to ensure resiliency of their critical infrastructure. Examples include risk assessments and contingency plans. Critical infrastructure owned by the private sector may be adaptive and resilient, but government does not know its status or its owner.
- 4.33 The Emergency Management Office considers itself the relationship builder with critical infrastructure owners and operators and has a contact list of partners, including government and private sector representatives. We found this list is not complete and the process to keep it current is not adequate. We noted the following deficiencies:
- provincial government contacts were inaccurate for half of the departments we interviewed;
 - the provincial government contacts we interviewed were often unaware of critical infrastructure responsibilities; and
 - private sector contacts are not included for the finance sector and other sectors do not cover all contacts we would expect.
- 4.34 Communicating with partners in a timely fashion during a time of crisis would be more difficult without a complete and current contact list.
- 4.35 The Emergency Management Office uses an information distribution system similar to an email system to send information such as weather alerts to critical infrastructure partners who have provided a contact person. The notification system can send emails, text messages, and voicemails to recipients to ensure they are reached and the information includes contact information allowing recipients to follow up as necessary.
- 4.36 Although the Emergency Management Office has a system in place to communicate with critical infrastructure partners, availability of useful and timely information has been noted as a significant issue with its response during two recent events impacting critical infrastructure: post-tropical storm



Arthur and the 2015 fuel disruption. An independent review panel prepared a report on the Nova Scotia fuel shortage and made 21 recommendations, 6 of which are specific to communications. The report noted breakdowns in communication between government and key service providers and distribution of inaccurate information. The majority of recommendations were addressed to the Emergency Management Office and can be applied to all critical infrastructure sectors. Additionally, an internally prepared “lessons learned” document on the response to post-tropical storm Arthur identified areas of improvement for communications with critical infrastructure partners.

► **Health and Wellness has identified critical infrastructure in the health sector; other departments have partial lists**

4.37 Through the Health Services Emergency Management division, the Department of Health and Wellness maintains a list of critical infrastructure in the health sector to adequately prepare for emergencies and ensure a consistent, coordinated response in the event an emergency occurs. Of the ten departments at which we interviewed staff and management, Health and Wellness was the only department familiar with the requirements of the National Strategy and Action Plan for Critical Infrastructure and actively planning within its sector.

4.38 Some departments, for purposes not related to critical infrastructure, have information available which would help identify private sector critical infrastructure owners and government-owned critical infrastructure. We identified the following:

Critical Infrastructure Sector	Applicable Department/Entity	What information government has:
Water	Department of Environment	Water treatment facilities in the province
Food	Department of Agriculture and Department of Fisheries and Aquaculture	Partial list of farm infrastructure and seafood processing facilities in the province. Details include monetary impact
Transportation, Food	Department of Agriculture	82 provincially-managed dykes currently being prioritized in anticipation of climate change impacts
Government	Department of Transportation and Infrastructure Renewal	Government-owned buildings with monetary replacement values, but no assessment of whether they are critical
Transportation	Department of Transportation and Infrastructure Renewal	Government-owned bridges with a condition rating of each bridge, but no assessment of whether they are critical



Critical Infrastructure Sector	Applicable Department/Entity	What information government has:
Energy	Nova Scotia Utility and Review Board	Energy providers and fuel distributors for regulatory compliance purposes. Details not shared with the Emergency Management Office

Recommendation 4.3

The Emergency Management Office should identify critical infrastructure owners and operators having an impact on the Province, ensuring all ten sectors are addressed.

Emergency Management Office Response: Agree. The Emergency Management Office has an established Network of critical infrastructure partners internal and external to government. Utilizing the ten section of critical infrastructure, EMO will undertake a mapping initiative to identify contacts in all ten sectors.

Provincially-owned Critical Infrastructure

Conclusions and summary of observations

The Province has not identified critical infrastructure it owns. Documentation of risk assessments for provincially-owned critical infrastructure is inconsistent. At the Department of Transportation and Infrastructure Renewal, there was minimal documentation of risks for two critical sections of highway; the Department had adequate risk assessments for a water treatment facility. Health and Wellness has a risk assessment and monitoring process for the health sector, including identifying interdependencies with other critical infrastructure sectors. Internal Services has a threat-risk analysis underway for a new Trunk Mobile Radio System.

- 4.39 *Background* – The majority of critical infrastructure in the province is owned and operated by private industry, while the remainder is divided among the three levels of government. Examples of critical infrastructure owned by the provincial government include: hospitals, roadways, information systems, water treatment facilities, dykes, and dams. The entities responsible for operating critical infrastructure owned by the provincial government should have documented risk assessments and protection plans. A good understanding of the risks to Nova Scotia’s critical infrastructure means the Province can better prepare itself to respond to events impacting its critical infrastructure.
- 4.40 The provincial government does not have a complete list of its critical infrastructure. Through interviews with government staff, we identified provincially-owned infrastructure items which, if compromised, would have



significant negative impacts on the health and safety of Nova Scotians, as well as economic impacts. We selected critical infrastructure from four sectors: health, transportation, water, and information and communication technology to determine if the Province had adequate documentation of risk assessments and protection plans for its critical infrastructure. The results are detailed below.

► **Completed risk assessments of provincial health systems and a provincially-owned water treatment facility; critical communications system in process**

4.41 *Health-care system* – The majority of the health critical infrastructure sector is owned by, or is the responsibility of, the Province. This includes:

- hospitals, clinics, and pharmacies operated by the Nova Scotia Health Authority and the IWK Health Centre;
- Emergency Health Services;
- HealthLink 811;
- public health services; and
- health-care providers.

4.42 The Department of Health and Wellness has a process to assess and monitor risks impacting critical infrastructure in the health sector using an all-hazards, risk management approach. The Department has comprehensive plans to ensure resiliency of the health system in case of a disruption and regularly conducts training exercises which simulate emergency situations in order to prepare adequate responses. Lessons learned from training exercises and significant events impacting the health system are tracked to ensure risks and responses are updated over time.

4.43 *Hayden Lake water treatment facility* – We tested one of two water treatment facilities owned by the Department of Transportation and Infrastructure Renewal. This facility provides drinking water to a variety of customers in Lockeport, including residential, health-care facilities, schools, and businesses. A prolonged disruption to the water supply could require a care facility or school to transfer residents to another location or pay for bottled water to be brought in.

4.44 In order to ensure safe drinking water across the province, the Department of Environment has testing and reporting requirements that must be followed by all water treatment facilities. In addition, the Department has documentation requirements that facilities must submit in order to receive operating approvals.



- 4.45 We found Hayden Lake's protection and contingency plans include comprehensive documentation of risks to the lake and treatment facility. The plans also include recovery procedures for a range of disruptions. However, the risk assessments do not address the facility's dependency on other critical infrastructure being available during a disruption. For example, if power or transportation is not available to the facility during a significant weather event, that could hinder its ability to provide drinking water. Management told us they believe these risks are largely mitigated by a backup water reservoir that holds over four days of water supply in reserve.
- 4.46 *Trunk Mobile Radio 2.0 System* – In Nova Scotia, virtually all frontline emergency service providers utilize the Trunk Mobile Radio 2.0 System for radio communications. Several federal and municipal partners also use the system or are implementing it in their operations. The Trunk Mobile Radio System network is comprised of 89 communications tower sites, of which the Province owns ten. It is used by emergency responders such as police, fire departments, and paramedics to communicate and is critical for public safety during both widespread emergency situations and nonemergency situations.
- 4.47 In the last two years, the Department of Internal Services and a private partner have migrated to a newer version of trunk mobile radio. A threat-risk assessment for the new system is underway in partnership with one of the primary users.
- 4.48 In the meantime, Internal Services has considered some of the risks for the ten provincial trunk mobile radio sites. Management provided us with descriptions of protective measures for the sites owned by the Province. While this is not a formal assessment of the risks facing each site, it does provide evidence that management has informally assessed risks impacting the sites to make decisions regarding protective measures and redundancies to include at each location.

► **Transportation and Infrastructure Renewal does not have risk assessments for critical sections of highway**

- 4.49 *Canso Transportation Link* – The Canso Causeway, swing bridge, and Canso Canal together form the Canso Transportation Link. It was opened in 1955. The Link provides for vehicle and rail traffic between mainland Nova Scotia and Cape Breton Island, while also allowing for vessel movements through the Canso Canal. All truck traffic in and out of Cape Breton and through to the island of Newfoundland passes over the Canso Causeway. We were told that this critical transportation link supports the following movements:
- Vehicles – 8,300 per day, of which 20% are trucks
 - Rail – two freight trains per day
 - Marine Shipping – 2,050 passages per year through the canal



- 4.50 The Canso Transportation Link is critical to both Cape Breton and Newfoundland and Labrador. Alternative transportation methods would need to be identified if the Causeway was unavailable. A prolonged disruption would impact distribution networks relying on transportation over the Causeway, such as food and medicine.
- 4.51 Transportation and Infrastructure Renewal has not completed risk assessments or protection plans for the Canso Transportation Link. The federal government is in the process of transferring ownership of the Canso Causeway and swing bridge to the Province. The documentation related to the transfer and a \$10.5 million repair project contains information needed to prepare risk assessments and protection plans including: identification of stakeholders, developing a communications plan, conducting impact analyses, assessing physical condition, and prioritizing repairs. However, this information has not been used to help assess risks.
- 4.52 *Amherst Highway 104 border to New Brunswick* – The Chignecto Isthmus is the sole land bridge joining mainland Nova Scotia with New Brunswick; it is one of Canada’s most significant transportation corridors. We found Transportation and Infrastructure Renewal has not prepared risk assessments or protection plans for this section of highway. The Department of Agriculture has completed a study to investigate the most serious risk facing the highway: risks of flooding of the Chignecto Isthmus.
- 4.53 A report was released in December 2012 as part of a joint program among the four Atlantic provinces, with the goal of helping Atlantic Canadians better prepare for, and adapt to, climate change. It concluded that the transportation corridor that crosses the Chignecto Isthmus is vulnerable to coastal flooding from storm surges as well as long-term, sea-level rise. A storm surge of two metres would cause extensive flooding, possible loss of life, a temporary halt in vehicle and rail traffic, and severe damage to a wide variety of public and private assets in the Amherst (Nova Scotia) and Sackville (New Brunswick) areas. This demonstrates the need for a risk assessment and protection strategy for the highway.

Recommendation 4.4

The Emergency Management Office should ensure all critical infrastructure owned by the Province is identified and have documented all-hazards risk assessments which consider interdependencies on other critical infrastructure and mitigation strategies.

***Emergency Management Office Response:** Agree subject to recommendation 4.1. The department(s) assigned responsibility for critical infrastructure will coordinate with all government departments to ensure risks and interdependencies are identified and mitigation strategies are in place.*