

JUL 19 2023

Honourable Kelly Regan, MLA
Chair of the Standing Committee on Public Accounts
c/o Legislative Committees Office
2nd Floor, One Government Place
1700 Granville Street
Halifax, NS B3J 3P7

RECEIVED JUL 21 2023

Dear Honourable Kelly Regan:

Re: Standing Committee on Public Accounts June 14, 2023 – Selection and Quality Management of Bridge Projects in Central and Western Districts and Contaminates sites.

Thank you for your correspondence dated June 23, 2023, requesting follow up information regarding provincial infrastructure.

Further to our appearance at the above noted committee meeting, Public Works has compiled the attached additional information in response to the following committee requests:

1. The Department has prepared a table of major capital projects that have been announced and are in progress. This table is attached as Appendix A and includes the announced budget and the location of the project.
2. As per direction from Justice and ISD, the information on Donaldson bridge should all be held until the investigation and settlement is concluded.
3. Based on end of 2022 year statistics, the number of poor bridges was 583 (14.01%), which is down from 618 (14.7%) in 2018.
4. The Province follows the DC350 Design Requirements Manual Part 2 (<https://novascotia.ca/tran/works/dc350/Part2.pdf>) for education facilities. In these design standards a soccer field is included for senior highs schools. When new schools are built, the Province follows a practice of consulting with municipalities and community groups to determine if there are any interests in making enhancements to school facilities beyond its normal facility standards. If there is interest, the difference in the cost of the enhancement and the standard is requested to be funded by the municipality and/or community group.

Appendix B includes a Halifax Regional Municipality staff report regarding the request to fund an enhanced field at the new J.L. Ilsley High School. This report includes a letter from the Province requesting confirmation for HRM to support and fund the enhancement of the sports field. HRM Council made a motion at its August 31, 2021, meeting to authorize the Chief Administrative Officer of HRM to contribute up to \$250,000 towards the project. This amount was 27% of the estimated cost at the time. The Department received a letter from the Executive Director of Parks & Recreation (Appendix C) confirming HRM's motion to contribute up to \$250,000. As this amount was less than the expected cost for the field enhancement the Department informed (Appendix D) the municipality that it is unable to proceed with the enhancement project.

5. The Department of Public Works is responsible for performing routine inspections of its structures to determine their condition. Timely intervention including maintenance, repairs and/or rehabilitation will prolong the safe service life of a structure. Appendix E is the current inspection of structures procedure.
6. To date in 2023, the Department of Public Works has completed 2308 level 1 inspections on structures. The Department has a target date to complete all level 1 bridge inspections by August 31 every year.
7. The bridge at Exit 13 at Highway 104 is currently reduced to one lane with a traffic signal system to maintain public safety. The tender for work to complete repairs to the bridge closes July 21st and is expected to be completed by the end of November 2023.

I trust you will find the information satisfactory.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Peter Hackett', with a stylized flourish at the end.

Peter Hackett, P. Eng
Deputy Minister

Enclosures:

- Appendix A – Major Infrastructure Projects
- Appendix B – HRM Staff Report
- Appendix C – HRM Correspondence
- Appendix D – DPW Correspondence
- Appendix E – Inspection of Structures Procedure

Appendix A

Major Infrastructure Projects

Healthcare Infrastructure			Location	Budget
Bayer's Lake Community Outpatient Centre	HRM	\$259.4 million (DBFM)		
Cape Breton Regional Hospital redevelopment	CBRM	Announced as contracts are awarded		
Halifax Infirmary expansion project	HRM	Announced as contracts are awarded		
IWK Emergency Department	HRM	\$101 million		
Mental Health and Addiction Campus	HRM	Announced as contracts are awarded		
Pictou dialysis unit	HRM	\$3.58 million		
North Cumberland Health Centre	Pictou	\$25 million		
Modular dialysis unit	Pugwash	Announced as contracts are awarded		
South Shore Regional Hospital Redevelopment Project	Various	\$112.7 million		
Transition to Community facilities	Bridgewater	Announced as contracts are awarded		
Yarmouth Emergency Department	HRM	Announced as contracts are awarded		
	Yarmouth			

Major Highway Projects

Highway 101: Three Mile Plains to Falmouth twinning (Multiple Year Project)	HRM	\$151 million
Highway 101: Cambridge interchange and connector roads	Annapolis	\$47 million
Highway 102: Aerotech Connector (Multiple Year Project)	HRM	\$20 million
Highway 103: Bridgewater Interchange (Exits 12-13) (Multiple Year Project)	Lunenburg	\$50.8 million
Highway 103: Upper Tanlation to Hubbards twinning (Multiple Year Project)	HRM	\$140 million
Highway 104 / Route 344: Auds Cove intersection realignment, access improvements	Guyborough	Announced as contracts are awarded
Highway 104: Sutherland's River to Antigonish twinning (Multiple Year Project)	Antigonish	\$364.3 million
Highway 105 / 104: Port Hastings, rotary upgrades (Multiple Year Project)	Inverness	Part of Highway Safety Improvements
Highway 107: Sackville-Bedford-Burnside Connector (Multiple Year Project)	HRM	\$210 million
Trunk 4: Antigonish Active Transportation Corridor Conversion (Multiple Year Project)	Antigonish	\$19.3 million

New Schools and Major Renovations

Three Mile Plains / Windsor Forks District School (PP-5) - Merger	Location TBD	
Breton Education Centre	New Waterford	
Glace Bay Area Elementary School	Glace Bay	
Northside Middle School	Northside	
Trenton Elementary and Middle Schools (PP-8) merger	Trenton	
Springhill Elementary	Springhill	
Ecole des Beaux-Marais (PP-8)	Porter's Lake	
Halifax Peninsula Elementary School	Halifax	
Clare Area Elementary School	Clare	
Ecole Wedgeport	Wedgeport	Part of \$948 million capital plan
West Bedford School	Bedford	
West Bedford High School	Bedford	
Clayton Park - Fairview Junior High School	Clayton Park	
Eastern Shore Consolidated School	Eastern Shore	
St. Joseph's - Alexander McKay School	Halifax	
New Germany Elementary School	New Germany	
Modular Units	Various	\$40 million

Other Buildings

NSCC Akereley Residence	HRM	
NSCC Ivany Residence	HRM	\$112 million
NSCC Pictou Residence	Pictou	
NSCC Marconi Campus	CBRM	Announced as contracts are awarded
Cape Breton Correctional Facility	CBRM	Announced as contracts are awarded

APPENDIX B - HRM Staff Report



P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No. 11.1.4
Halifax Regional Council
August 31, 2021

TO: Mayor Savage and Members of Halifax Regional Council

SUBMITTED BY: Original Signed by 
Jacques Dubé, Chief Administrative Officer

DATE: Aug 10, 2021

SUBJECT: Funding for Field Enhancement – JL Ilsley High School

ORIGIN

June 29, 2021 Regional Council Meeting:

MOVED by Councillor Cuttell, seconded by Councillor Russell.

THAT Halifax Regional Council request a staff report in response to the request from the Province for funding for an enhanced grassed field at the new JL Ilsley High School in Spryfield, as per the attached letter from Transportation and Active Transit dated June 3, 2021.

MOTION PUT AND PASSED UNANIMOUSLY

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter

Section 79A (1) Subject to subsections (2) to (4), the Municipality may only spend money for municipal purposes if

- (a) the expenditure is included in the Municipality's operating budget or capital budget or is otherwise authorized by the Municipality;

RECOMMENDATION

It is recommended that Halifax Regional Council direct the Chief Administrative Officer to respond to the Province of Nova Scotia declining the funding request for an enhanced natural grass football field at the new JL Ilsley High School in Spryfield.

BACKGROUND

JL Ilsley High School is in the community of Spryfield and was originally built in 1971 (Attachment A). In 2017, the province decided to replace the school at its existing location through a complete redevelopment of the site by removing its existing facilities and building a new school building, parking areas, and playing field. Construction is underway and the school is planned to be occupied in September 2021 (Attachment B).

The Province follows certain standards for the facilities that are to be established as part of any new school planning and construction (DC350 Design Requirements Manual). For a high school playing field, the standard is for the Province to construct a soccer field that is 67 by 107 metres in size. This makes them capable of being able to accommodate soccer games, other types of games that may not require larger fields, as well as practices for a full range of field sports. However, this field size does not enable regulation football games to be played.

When new schools are built, the Province consults with municipalities and community groups to determine if there are interests in making financial contributions to enhance school facilities beyond its normal facility standards. These may include enlarged gyms, equipment storage areas, theatres, and outdoor recreation infrastructure that may fill service gaps within communities. The difference in cost between the provincial standard and the enhancement is the amount that is requested that HRM contribute to the Province.

The construction of the new school is underway. However, the playing field and other site features such as parking areas, have yet to be built. The Province and the District Councillor have identified a local interest in an enhancement of the playing field, to change it from a soccer field to a football field. This change would narrow the playing field by 8 metres while considerably extending its length. On the current site plan (Attachment B), the field extension would replace the student parking area to the south and slightly extend it to the north, as well as change a small part of the driveway.

Pursuant to the letter dated June 3, 2021 (Attachment C) from the province, two figures were provided relating to the financial request. Upon further investigation into the request, the amounts are not firm as they are estimates and subject to market conditions. For the purpose of this staff report, the preliminary cost estimate of this enhancement is deemed to be \$950,000, subject to market conditions and further investigations. The June 3, 2021 letter from the Province to the Municipality also outlines a local interest in the playing field enhancement.

Regional Council's June 27, 2021 motion is for a staff report to provide a response to the field enhancement request from the Province. In order to be able to complete the overall project in time for the upcoming school year, provincial staff have confirmed that they require HRM's response by mid- August.

DISCUSSION

From a general perspective, the proposed field enhancement would have merit if the new school would be disadvantaged without it or if there was a unique circumstance that warranted the football field. From a municipal service perspective, the field enhancement would be warranted if it were to fill a service gap.

Purpose of Field Enhancement Request

JL Ilsley originally had a sports field which was lined for soccer, measuring approximately 60 by 90 metres, with the appropriate space for run off at the sides and ends of the field of play. Consistent with provincial standards, the new field, which has been planned to be developed as a soccer field, will be slightly larger at 67 by 107 metres, with 3m of run off space on all four sides. This field would be comparably programmed but larger than a number of Halifax Regional Centre for Education (HRCE) high schools, including but not limited to:

- Sackville High School
- Auburn Drive High School
- Cole Harbour High School
- Prince Andrew High School
- Dartmouth High School; and
- Millwood High School

From this perspective, the soccer field standard does not present a particular disadvantage to JL Ilsley, and is indicative of an overall service approach in which practices occur at these fields, while many games for sports, such as football, take place at larger fields and regional facilities.

School Football Program

While school athletic programs are not part of the municipality's mandate, they are supported by municipal recreation infrastructure. Extracurricular sports programs at HRCE high schools vary, but a large portion offer football, soccer, and rugby. Although many high school fields can accommodate soccer games, there is a tendency for them to be played at all-weather fields. Football games tend to be played on a combination of natural grass and all-weather field locations.

In the high school football season, there are typically eight regular season games and playoffs that extend into the middle of November. Except for Lockview and Bay View high schools, no other HRCE high school football program has what is deemed as a home field on the school site. Halifax West is located within walking distance of the Mainland Common all-weather fields and Charles P. Allan (CPA) High School is adjacent to an all-weather field which was constructed as a part of the overall partnership between the Province and HRM in developing the new CPA facility with the adjoining Bedford / Hammonds Plains Community Centre. Typically, HRCE high school football programs practice on their respective school grounds then play their games off site at a field which can accommodate competitive football.

The high school football regular season operates during the fall when there is less daylight. In 2019, 83% of HRCE regular season high school football games were played on municipal all-weather sport fields, which have flood lights. Natural grass sports fields have shorter seasons which often ends in October, leading to sports being scheduled at all-weather sport fields for extended seasons, which includes high school football. All-weather fields are also better suited for more intensive sports, such as tackle football, as they can withstand more wear and are available during and after high precipitation events that may close a grass field.

Additionally, due to the high school football league being province wide, there is a large portion of games played on weekends to accommodate travel. This scheduling counteracts the rationale for hosting games at school sites to convenience players or provide convenient access for the student body directly after school hours. In 2019, the JL Ilsley football program hosted three "home" games at the Graves Oakley sports field (2.6 km from the school) and one game at Mainland Common's all-weather field facility (7.6 km from the school). All other regular season games were hosted at all-weather locations when they were the visiting team.

Proposed Field Enhancement

As noted, a high school project includes a standard soccer field (67 x 107m) as part of its construction. An increase to a regulation football field would reduce the width to approximately 59m but increase the length to approximately 137m. The change to a football field would be approximately an additional 914 square metres or a 13% increase to the overall field area. Typically, in a community enhancement project, the additional funding provided by a municipality is based on the increased size of the recreational component or additional amenities and the related costs associated with the specific increase. The costs associated with the construction of the overall asset are not considered as a community enhancement as they are part of the base construction of the provincial facility.

In this case, based on the configuration of the site and proposed changes required to the field to accommodate the size of a football field, the request to HRM includes both the increased recreational amenities as well as significant construction costs such as earthworks, retaining wall and general construction expenses. Further, the letter outlines that the costs are subject to market conditions and requires that HRM agree to fund any overages in the budget. As a result, the cost to HRM could increase through the completion of the expansion and the municipality would not be in a position to mitigate and manage the work.

The \$950,000 estimated cost of the enhancement is significant given that field size would increase by only a small amount, although this is due to the limitations of the site and the considerable earthworks that would be required to support the field extension.

Community Programs Related to Football

While the municipality provides regional facilities that are considered multi-use, rather than sport specific, those fields are also able to accommodate community or recreational league play for football related games. There has been growth in youth non-contact flag football, however, it is played on shorter field dimensions than a standard tackle football field. Flag football takes place during the spring season and does not conflict with tackle football. Overall, there has not been increased demand for full-sized football fields within the municipality.

Community Enhancement

The *Education Act* provides the opportunity for HRM to provide funding to a school project to enable a community enhancement of the school to meet a community need. HRM has partnered with the Province in the past, primarily to co-locate recreation space with a school or to expand the size of a gymnasium such that it can be separated to host two activities.

School enhancement projects have been governed through the development of a Joint Use Agreement (JUA) between HRM and the Province. A JUA is a governing document which contains clauses and terms recognizing HRM's capital investment for the facility enhancement and a reciprocal access to the facility in exchange for the capital investment to meet recreational needs of the general community.

The construction of the new soccer field at the JL Ilsley school will meet the recreational needs of the general community and there will continue to be community access to the field similar to other schools. Therefore, there would be limited ability to achieve reciprocal access to a field for which there is already HRM and community access.

Findings

The enhanced football field does not present distinct advantages for community or alternative football programs. While it would accommodate additional high school football games, it would not have the same capabilities as regional all-weather field facilities that have flood lights and can be used in a variety of weather situations. Based on the regional field approach outlined in this report, the offer to enhance the field at JL Ilsley would not serve to fill an existing municipal service gap.

The findings in this report should not negate that there may be local interest and support in the football field being established at JL Ilsley. The short duration of time to prepare this report has not allowed a fulsome understanding of this request or more detailed assessments of overall field use. Based on the information as gathered and the overall approach to regional facilities being used for competitive football, there is limited municipal purpose for an enhanced football field that, in addition, would be at a relatively high cost. Therefore, the municipality should decline the offer to enhance the field at the school.

FINANCIAL IMPLICATIONS

There are no immediate financial implications associated with the recommendation in this report.

If the staff recommendation is rejected and Regional Council chooses to proceed with one of the options outlined in the alternatives section, estimated costs are outlined in that section, estimated between a maximum of \$500,000 for alternative 1 and \$950,000 for alternative 2. Actual project costs may differ due to market conditions and potential cost overruns.

RISK CONSIDERATION

The risks associated with this recommendation are low. Based on the recommendation the municipality would continue to concentrate its resources on regional recreational facilities for competitive field games.

There are a number of risks should the municipality agree to fund the school field enhancement as requested including that the municipality would be asked to contribute to other school field enhancements that are unrelated to filling a municipal service gap and the costs could rise putting undue burden on municipal taxpayers.

COMMUNITY ENGAGEMENT

The request for funding by the Province specified some discussion with the local community. No community engagement was undertaken in the preparation of this report.

ENVIRONMENTAL IMPLICATIONS

No environmental implications were identified.

ALTERNATIVES

If Regional Council chooses to proceed with an alternative, Regional Council must defeat the staff recommendation directing the Chief Administrative Officer to decline the funding request and pass a new motion such as one of the motions included in Alternative One or Alternative Two.

1. Should Regional Council decide a contribution is merited, on the basis of the high cost of the field enhancements (which are due to the characteristics of the site), Regional Council could direct the CAO offer to the Province HRM's support of the expansion project with a contribution of 50% of the cost of the expansion project up to \$500,000 or an alternative percentage and amount at Council's discretion.

It should be noted that provincial staff have advised that the Province would likely proceed with the standard sized soccer field should the municipality not fund the full cost of the enhancement. In accordance with Administrative Order Number 2020-009-ADM Respecting COVID-19 Regional Council can authorize a withdrawal from reserve without the review and recommendation of the Audit and Finance Standing Committee.

If Regional Council chooses to proceed with this alternative, the following motion may be passed:
"That Halifax Regional Council direct the Chief Administrative Officer (CAO) to negotiate and execute an agreement with the Province of Nova Scotia for a sport field enhancement at JL Ilsley High School

for 50% of the cost up to \$500,000 for reciprocal community benefit as deemed reasonable by the CAO with funding from Q421 (General Contingency Reserve)."

2. Regional Council could choose to fund the field enhancement at JL Ilsley at an estimated cost of \$950,000 subject to market conditions and acceptance of cost overages. This alternative would have some risk to the municipality such as the possibility of cost overages. The following motion may be passed:

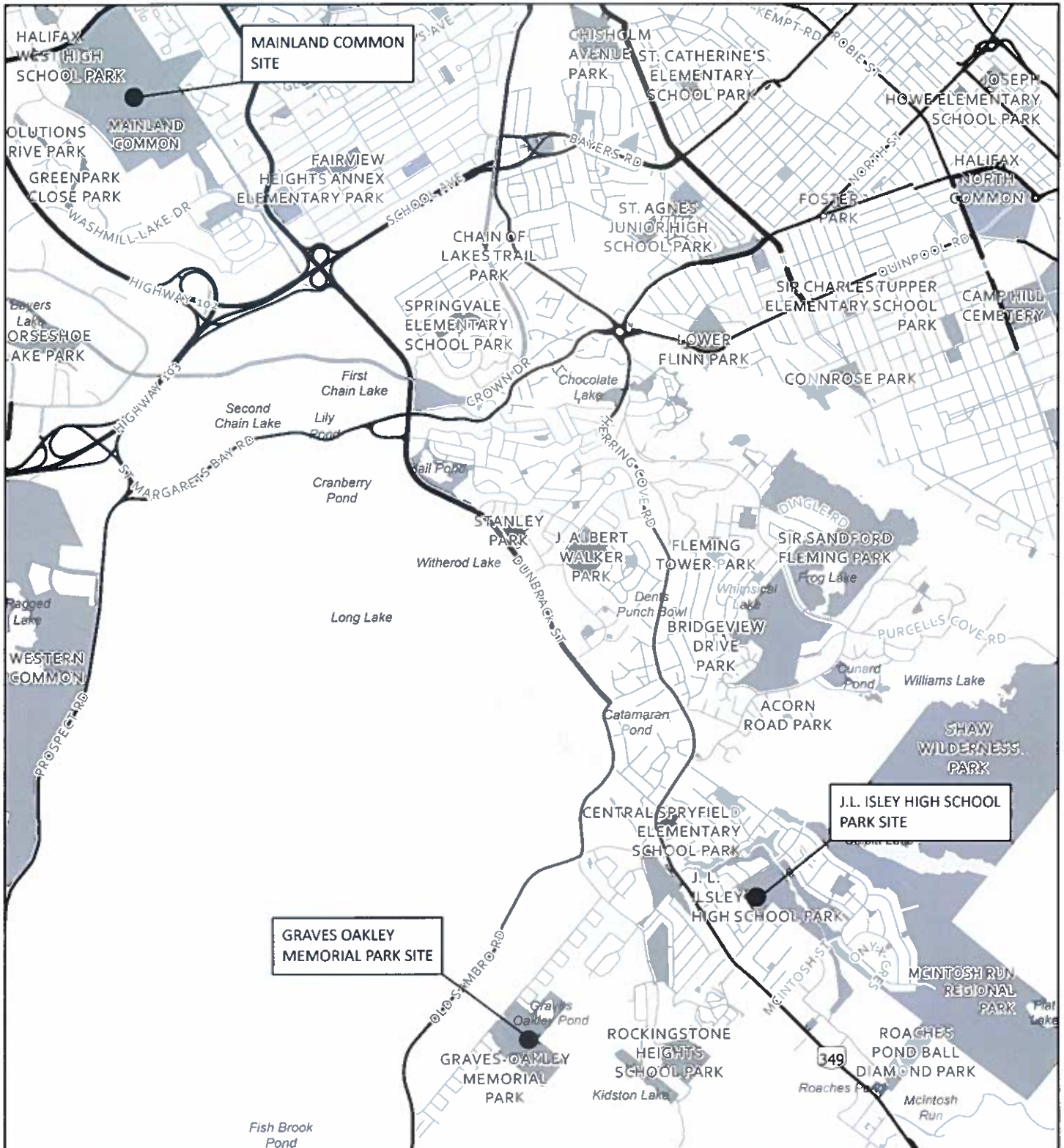
"That Halifax Regional Council direct the Chief Administrative Officer (CAO) to negotiate and execute an agreement with the Province of Nova Scotia for a sport field enhancement at JL Ilsley High School at a cost of \$950,000.00 with funding from Q421 (General Contingency Reserve).

ATTACHMENTS

Attachment A JL Ilsley High School Location
Attachment B School Site Plan
Attachment C Letter from the Province

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Phillip Hammond, Recreation Program Specialist, 902.233.0593
Gareth Evans, Recreation Program Specialist, 902.292.1264
Richard Harvey, Manager, Policy and Planning, 902.476.5822



J.L. ISLEY HIGH SCHOOL LOCATION

Nearest Sports Fields used by J.L. Isley Football Program (based on 2019 Field Schedule)

●
HRM Park

Distance from J.L. Isley High School Park site to:

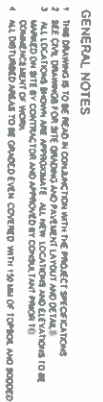
Graves Oakley Memorial Park Site (2.9km)
Mainland Common Site (7.6km)

HALIFAX

Parks & Recreation
Policy & Planning

0 0.5 1
Kilometers

Date: 7/23/2021



DAVID R. FINE, RAMP
HILL & CROWN DRIVE
TAMPA, FL 33604
NO VEHICLE

[illegible][illegible][illegible]

APPENDIX C - HRM Correspondence



September 8, 2021

Peter Hackett,
Deputy Minister, Public Works
PO Box 186
Halifax, NS B3J 2R7

RE: JL Isley School Field

Dear Mr. Hackett,

Congratulations on your new role as Deputy Minister. This letter is in response to a previous letter from your predecessor to Jacques Dubé, Chief Administrative Officer. I have attached a copy of that original letter for your information.

As outlined in the letter, the request from the province was for HRM to fund the full cost of an enhancement to the planned soccer field replacing it with a football field. Based on the original cost estimates, the cost to upgrade the field was approximately \$950,000.

This type of funding request could only be considered by Regional Council. As a result, HRM staff presented a report to Regional Council for their consideration on August 31, 2021. Regional Council deliberated on the request and considered the municipal benefit. Subsequently, Regional Council passed the following motion:

THAT Halifax Regional Council direct the Chief Administrative Officer (CAO) to negotiate and execute an agreement with the Province of Nova Scotia for a sport field enhancement at JL Isley High School for 50% of the cost up to \$250,000 for reciprocal community benefit as deemed reasonable by the CAO with funding from Q421 (General Contingency Reserve).

As the next step in the process, HRM staff will contact your staff to confirm whether the Province will be proceeding with the field enhancement. Following this confirmation, the cost sharing agreement will be developed by HRM for your consideration. If you have any questions regarding this matter, please feel free to contact me at 902-490-4933.

Sincerely,

Denise Schofield
Executive Director
Parks & Recreation

c. Jacques Dubé, Chief Administrative Officer
Patty Cuttall, Councillor District 11, Spryfield
Brendan MacGuire, MLA, Halifax Atlantic

HALIFAX

Halifax Regional Municipality
PO Box 1749, Halifax, Nova Scotia
Canada B3J 3A5

halifax.ca

June 3, 2021

Mr. Jacques Dube
Chief Administrative Officer
Halifax Regional Municipality
P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5

Dear Mr. Dube:

I am pleased to advise the construction of the new JL Ilsley High School is proceeding very well, and it will open this upcoming school year. This modern educational facility will service the community for many years to come.

As part of this school construction project, we will construct a soccer field next to the new school. Discussions have taken place within the community and a request has been made by representatives of the community to construct a football field instead of the standard soccer field. This change is considered an enhancement to our provincial standard and therefore requires the financial support of the municipal unit to proceed. The current estimate to upgrade the standard soccer field to a standard football field is \$950,000, see attachments. The cost estimate is subject to change due to current market conditions. This estimate covers the incremental cost to increase the size of the field to the standard size football field and all the additional site work required.

To proceed with the construction of the football field, HRM is required to provide written confirmation to support and fund the enhancement and any overages in budget due to market conditions. We require approval and funding support from HRM regarding this enhancement by July 9, 2021. Any delay in receiving this information will impact the schedule for the project.

We look forward to your decision.

Sincerely,



Paul T. Lafleche
Deputy Minister

c: Eiryn Devereaux, Deputy Minister, Infrastructure and Housing
Brendan MacGuire, MLA, Halifax Atlantic
Patty Cuttell, Councillor District 11, Spryfield

JL Ilsley High School

Football Field - Construction Costing Matrix

March 2020

Item	Description of Constructability Workslope	Grass Football Field & 8 Stall Parking Lot
1	Delete 64 Student Parking Stalls & walks/curbs	(\$128,000)
2	Delete Soccer Field (Hydroseeded) - Credit	(\$99,055)
3	Add Football Field - Hydroseeded	\$144,609
4	Add Football Field - Artificial Turf	\$0
5	Add Concrete Pads for Bleachers - 4 ea.	\$14,000
6	Add Football Field Bleachers - 4 ea.	\$34,000
7	Additional Earthworks (Rock Cut) - Extend the field south where 56 parking stalls were deleted	\$300,000
8	Additional Earthworks (Rock Cut) - Extend the field east into the highest rock shelf	\$100,000
9	Add North Retaining Wall at Rink Side	\$312,500
10	Replace Loss of 2 LEED credits with Grey water Credits	\$0
11	Reduce Landscaping	(\$2,139)
12	Construction General Expense, Staffing & Mark-Up (1 month schedule extension)	\$165,732
Additional Cost Compared to the original budget		\$841,647
Contingency (5%)		\$42,082
Total		\$883,729
With Inflation (3%)		\$910,241

APPENDIX D - DPW Correspondence



Department of Public Works
Office of the Deputy Minister

PO Box 186
Halifax, Nova Scotia
Canada B3J 2N2

902-424-4036 T
novascotia.ca

SEP 22 2021

Halifax Regional Municipality
Box 1749
Halifax, NS B3J 3A5

Dear Mr. Dube:

I have recently received a letter from Denise Schofield, Executive Director of Parks and Recreation, regarding the proposed enhancement of the sports field at the new JL Isley High School. I truly appreciate the work of your staff on this file, and the consideration of Council regarding the community's request to an enhancement of the planned sports field.

The total funding required for the requested enhancement to upgrade the standard soccer field to a standard football field is \$950,000.00 as stated in Deputy Minister Paul LaFleche's letter to you dated June 3, 2021. As the \$250,000.00 approved by Council does not cover all costs for this enhancement, I must advise that we cannot proceed with the enhancement project.

Please let me know if you have any questions or concerns. Again, please pass on my thanks and appreciation to Council and HRM staff for their work and consideration for this request.

Yours truly,

A handwritten signature in blue ink, appearing to read 'P. Hackett'.

Peter Hackett, P. Eng
Deputy Minister

c: Brendan MacGuire, MLA, Halifax-Atlantic
Patty Cuttall, Councillor, District 11, Spryfield

APPENDIX E - Inspection of Structures Procedure

*Division: Highway Programs
Section: Engineering and Construction
Function: Operations (hp 2.30.73)
Procedure number: PR5061*

Inspection of Structures

Purpose

The Department of Public Works (DPW or the Department) is responsible for performing routine inspections of its structures (bridges and culverts equal to or larger than three (3) metres in span, and overhead sign structures – see PR5072 Bridge Responsibilities Construction and Maintenance for definitions) to determine their condition. Timely intervention including maintenance, repairs and/or rehabilitation will prolong the safe service life of a structure.

Procedure(s)

1. General

- 1.1. The Area Manager (AM) is responsible for ensuring Level 1 Inspections are completed on all structures and the inspection information is documented as outlined in this procedure.
- 1.2. The District Bridge Engineer (DBE) is responsible for ensuring scheduled Level 2 and on-demand Level 3 Inspections are completed, and the inspection information is documented as outlined in this procedure.
- 1.3. The DBE is responsible for arranging inspection training and refresher training for individuals conducting Level 1 and Level 2 Inspections.
- 1.4. The Bridge Maintenance Engineer (BME) is responsible for maintaining the Structure Information System (SIS) database of completed inspections and structure asset information. Requests for access to the database shall be submitted to the BME.
- 1.5. The DBE is responsible to ensure Level 1 follow ups are completed.
- 1.6. The DBE is responsible for the review of Level 2 Inspection reports for structures with an NBI rating of 4 or less, at minimum.
- 1.7. The DBE will prepare an annual report on the status of completed inspections. Information on the status of completed structure inspections shall be made available through SIS. The annual report shall be submitted to the District Director (DD) with copies to the AM.

- 1.8. Inspection photographs, records, notes, drawings, reports and asset records shall be kept for a minimum of five (5) years past the end of structure service life.
- 1.9. The BME will arrange for Quality Assurance / Quality Control audits and calibration in accordance with this procedure.

2. Level 1 Inspection

- 2.1. The Level 1 Inspection is a basic visual inspection to identify safety concerns or maintenance deficiencies.
- 2.2. Level 1 Inspections shall be completed as per this procedure.
- 2.3. Only individuals who have successfully completed the DPW Level 1 Bridge Inspection Training Course or Level 2 Training are qualified to complete Level 1 Inspections.
- 2.4. The DPW Level 1 Bridge Inspection Training Course will be arranged annually by the DBE. The DPW Bridge Inspection Training Course qualifications are valid for three years.
- 2.5. Level 1 Inspections are to be completed on all Department structures every year. Inspections shall not be started prior to April 1 and should be completed prior to August 31. Suggested thresholds to ensure timely completion are as follows:
 - 20% completed by April 30
 - 40% completed by May 31
 - 60% completed by June 30
 - 80% completed by July 31
 - 100% completed by August 31

This aids in timely identification of urgent issues arising from winter conditions. Inspectors should prioritize inspecting structures with known concerns first.

- 2.6. All Inspectors shall strive to complete all inspections accurately and on time.

- 2.7. Inspectors should ensure the completed Level 1 Inspections are entered into SIS as soon as possible from the date of inspection.
 - 2.8. Inspections are not considered completed until they are 'finalized' in SIS.
 - 2.9. If structural problems are observed during a Level 1 Inspection, the Inspector shall request a follow-up via email to the DBE's Office and copy the Operations Supervisor. The DBE's office will complete a follow up within 20 working days of the request.
 - 2.10. If unsafe conditions are observed or immediate action be required, the DBE and AM must be notified immediately for appropriate action.
3. Level 2 Inspection
- 3.1. The Level 2 Inspection is a detailed visual inspection to identify safety concerns or maintenance deficiencies.
 - 3.2. There are two types of Level 2 bridge, culvert and overhead sign structure inspections:
 - Level 2: this inspection shall be conducted in accordance with the United States Federal Highway Administration (FHWA) National Bridge Inventory (NBI) Recording and Coding Guide as described in the DPW Bridge Inspection Manual.
 - Level 2V (verification): this inspection shall be conducted to verify the previous Level 2 NBI rating. This inspection will be a review of the previous Level 2 inspection, confirmation and reassessment of any noted deficiency(s), and new pictures. Any change in the overall NBI rating is cause for a full Level 2 inspection.
 - 3.3. Level 2 Inspections are to be completed by qualified individuals. A qualified individual meets the following requirements:
 - Has successfully completed a minimum two-year program in Civil Engineering Technology or Survey Technology or an acceptable equivalent combination of training and experience.
 - Has successfully completed the FHWA Safety Inspection of In-Service Bridges course, or acceptable equivalent as determined by the Structural Engineering Division

- Has completed refresher training consisting of the FHWA Safety Inspection of In-Service Bridges Course or the FHWA Bridge Inspector Refresher Training Course or acceptable equivalent as determined by the Structural Engineering Division at the frequency shown in Appendix "A".
- 3.4. Structures must receive a Level 2 Inspection based on the following inspection frequency table. The frequency of inspection is based on the condition of the structure, structural configuration and the highway classification on which the structure is located.

Level 2 Inspection Frequency Table:

NBI Rating	Highway Classification			
	Arterial (A, B, C, D)	Collector (E, F)	Local (G, H, I, J, K)	Steel Truss Bridges
9 Excellent 7 - 8 Good	6 yrs	6 yrs	6 yrs	6* yrs
5 - 6 Fair	4 yrs	4 yrs	5 yrs	4* yrs
2 - 4 Poor	2* yrs	3* yrs	4* yrs	2* yrs
0 - 1 Failed or Closed	Structures in failed condition shall receive a site visit annually to ensure any barricades or warning signs remain in place. A Level 2 Inspection is not required.			

* In addition to the frequency as listed in the table, Steel Truss Bridges and all structures having a Poor rating require Level 2V - Condition Verification inspections each intervening year

- 3.5. The frequency for inspections may be increased at the discretion of the DBE.
- 3.6. All Inspectors shall strive to complete all inspections accurately and on time.
- 3.7. Level 2 inspections shall be completed within the calendar year in which they are scheduled.
- 3.8. Inspectors should ensure the completed Level 2 & 2V Inspections are entered into SIS as soon as possible from the date of inspection.
- 3.9. Inspections are not considered completed until they are 'finalized' in SIS.

- 3.10. Inspectors shall make all reasonable efforts to fully complete a visual inspection of the entire structure within 'arms-reach'. Use of aids such as binoculars, camera zoom or other approved aids may be used where access is not possible. Portions of structures which are difficult to obtain a visual inspection within arms-reach may be marked as 'unable to inspect'. Locations marked 'unable to inspect' shall be brought to the attention of the DBE to determine if additional efforts are required to obtain access to those locations of the structure.
 - 3.11. Any dirt, debris, rust scale located such that a visual inspection of the underlying structure cannot be completed shall be fully removed prior to inspection.
 - 3.12. If serious structural problems or unsafe conditions are observed that require immediate action, the Inspector should immediately notify the DBE.
4. Level 3 Inspection – Special Investigation
- 4.1. The Level 3 inspection is a detailed localized visual inspection pertaining to a special investigation (in-depth examination and survey of component alignment, dimensions, conditions, defects and material deterioration).
 - 4.2. The Level 3 inspections are classified as follows:
 - Level 3a - Dive / Scour Inspection - structures will be inspected to determine if they are 'scour critical'. Schedule for scour inspection will then be prepared on a case by case basis depending on bridge criticality, susceptibility and history of scour. Scour will also be monitored as part of the regular inspections.
 - Level 3B - Fatigue Inspection - structures deemed to be fracture critical or inspected and found to have fatigue issues will have a special inspection to determine a baseline inspection, and then will be monitored as part of the regular L2 & L3 inspection process.
 - Level 3C – truss connections (gusset plates or pins)
 - Level 3D - corrosion damage / section loss.
 - Level 3E - impact damage.
 - Level 3F - settlement or voids.
 - Level 3G - localized component deterioration.
 - Level 3H - other.

- 4.3. Pictures of deficiencies are required. Measurements and noted findings of any deficiencies on the Level 3 inspection are reported through a summary memo or report provided to the DBE.
- 4.4. Level 3 Special Investigations are arranged by and carried out under the direction of the DBE on an as-needed basis.
- 4.5. Level 3 inspections are to be completed by DPW's Structural Engineering Department, Engineering Consultant licensed to practice in Nova Scotia, or other qualified personnel depending upon inspection type.
- 4.6. The results of the inspection shall be reviewed by the DBE or Structural Engineering Division to assess severity and extent of impacts to the structure and determine if remedial measures are required.
- 4.7. If serious structural problems or unsafe conditions are observed that require immediate action, the Inspector should immediately notify the DBE and AM.

5. Quality of Inspections

5.1. Calibration Sessions

- Calibration Sessions are an internal meeting of Level 2 Inspectors and DBEs to help ensure consistency in structure inspections.
- A selection of 3 (minimum) structures of varying types, configurations and conditions are chosen by the DBEs every two years (see Appendix 'A' for schedule).
- Each Level 2 Inspector and DBE are required to complete a full Level 2 inspection on each calibration structure, including a full report with photos as per this procedure.
- Reports and photographs are provided to the BME a minimum of 4 weeks prior to the scheduled calibration session.
- The BME will review all reports for consistency in ratings, approach and detail.
- Rotating between all Districts, one Inspector will be selected to prepare a presentation and lead the calibration sessions where all inspections will be reviewed for consistency in ratings, approach and detail.

- The BME will provide generalized comments to the group at the sessions and individual feedback to Inspectors as required after the calibration session has been completed.
- Electronic copies of inspections, notes on discussion at calibration sessions, and copies of feedback to individual Inspectors shall be maintained by the BME.

5.2. Level 1 Inspection – Internal Audit

- A review of Level 1 inspection reports shall be completed to ensure quality and consistency in structure inspections.
- A random selection of 10 (minimum) Level 1 inspections per District shall be selected by the BME every two years for an internal audit (see Appendix 'A' for schedule).
- Reports and photographs shall be provided to the BME for review. The BME shall visit all structure audit locations to ensure Level 1 inspection comments are accurate and reflect the site conditions. Reports will also be reviewed for completeness and quality of reporting.
- Level 1 inspection ratings shall also be compared to ensure general alignment with most recent Level 2 inspection. Any inconsistencies shall be reviewed to determine root cause and what action may be required.
- The BME may further investigate the quality of additional L1 inspections from an Inspector whose reports are found to be unsatisfactory.
- The BME will provide a summary of results to the appropriate DBE and DD, and individual feedback to Inspectors if required.
- Inspections which are found to be poor quality may have to be completed again.
- Electronic copies of audits, notes and communications shall be maintained by the BME / Structural Engineering Division as required by DPW guidelines.

5.3. Level 2 Inspection – Internal Audit

- A review of Level 2 inspection reports shall be completed to help ensure quality and consistency in structure inspections.
- A random selection of two (minimum) Level 2 inspections per Inspector shall be selected by the BME every two years for an internal audit (see Appendix 'A' for schedule).

- Reports and photographs shall be provided to the BME for review. The BME shall visit all structure audit locations to ensure Level 2 inspection comments are accurate and reflect the site conditions. Reports will also be reviewed for completeness and quality of reporting.
- The BME may further investigate the quality of additional Level 2 inspections from an Inspector whose reports are found to be unsatisfactory or for a structure type which may be of concern.
- The BME will provide a summary of results to the appropriate DBE and DD, and individual feedback to Inspectors if required.
- Inspections which are found to be poor quality may have to be completed again.
- Electronic copies of audits, notes and communications shall be maintained by the BME / Structural Engineering Division as required by DPW guidelines.

5.4. Level 2 Inspection – External Audit

- A review of Level 2 inspection reports shall be completed by a Qualified External Consultant to help ensure quality and consistency in structure inspections with accepted industry practice.
- A random selection of two (minimum) Level 2 inspections per Inspector shall be selected by the BME every six years (corresponding with Level 2 Refresher training) for an external audit (see Appendix 'A' for schedule).
- Reports and photographs shall be provided to the External Consultant for review. Reports will be reviewed for completeness and quality of reporting for alignment with industry practice.
- The BME may further investigate the quality of additional Level 2 inspections from an Inspector whose reports are found to be unsatisfactory or for a structure type which may be of concern.
- The External Consultant will visit the structure audit locations to ensure Level 2 inspection comments are accurate and reflect the site conditions.
- The External Consultant will provide a summary report of results to the BME and appropriate DBE and DDs, and individual feedback will be provided to Inspectors if required.
- Inspections which are found to be poor quality may have to be completed again.

- Electronic copies of audits, notes and communications shall be maintained by the BME / Structural Engineering Division as required by DPW guidelines.

5.5. See Appendix "A" for QA/QC schedule

6. Repairs

- 6.1. Any routine repairs/deficiencies identified through the Level 1 or Level 2 Inspection process will be forwarded via email to the respective AM by the Inspector for appropriate action, with a copy to the DBE. (See Appendix "B" - Maintenance Report). The AM will assign the repairs/deficiencies to a DPW Supervisor, who will in turn prioritize and have repair work carried out in accordance with repair procedures approved by the DBE. The Supervisor will complete the 'work completed' section of the Maintenance Report and return a copy to the AM and a copy to the DBE once the repair has been completed

Accountability

District Bridge Engineers, Area Managers and the Bridge Maintenance Engineer are responsible for ensuring this procedure is adhered to.

Monitoring

District Directors and District Bridge Engineers, in conjunction with their Area Managers, will periodically audit the effectiveness of this procedure and make modifications as required.

References

FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges

Appendices

Appendix A – Technical Training Schedule and QA/QC Schedule
Appendix B – Maintenance Report

Enquiries

District Bridge Engineers
Area Managers
Structural Engineering Section