MUNICIPALITY OF
West Grey

Municipality of West Grey
Bridge Prioritization Program

February 2025

TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers

105 Queen Street West, Unit 14
Fergus, Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
ORANGEVILLE | FERGUS | HARRISTON

Executive Summary

The Municipality of West Grey has retained Triton Engineering Services Ltd. to develop a *Bridge Prioritization Program* which provides a non-subjective and comprehensive method to evaluate the current condition of bridges and culvert crossings within the Municipality's jurisdiction. A total of 103 of the 114 structures in West Grey have been identified as assets which are part of the vehicular transportation network and were analyzed as part of the Program.

As part of the *Bridge Prioritization Program*, a *Structure Priority List* was developed to serve as a resource tool and work in alignment with West Grey's Asset Management Plan and *Ontario Regulation 588/17* (O. Reg. 588/17) "Asset Management Planning". Currently, there are 25 structures which are either currently closed or in advanced stages of disrepair and at the end of their service life.

The *Structure Priority List* is derived from the total years of remaining service life for individual structures as well as the *Total Risk of Asset Failure.* The *Total Risk of Asset Failure* is comprised of the following components and their variables:

1. **Total Probability of Asset Failure** – Likelihood of a structure requiring closure from structural deterioration and is the sum of the Average Daily Traffic (ADT) and the Bridge Condition Index (BCI).
2. **Total Consequence of Asset Closure/Failure** – The resulting impact of a structure's required closure or failure to the overall transportation network, modelled as the sum of ADT, Detour Length, Change in Emergency Response Time, and Local Access.

After conducting a review of the 103 of 114 structures in the Municipality of West Grey, the following conclusions and observations were made:

- **Total Probability of Asset Failure**
  - 19 structures have a rating for probability for failure greater than a score of 5 out of 10, including the structures of greatest risk being, N-051, N-061, N-058, B-003 and N-199.
- **Total Consequence of Asset Closure/Failure**
  - 59 structures (over half of the structures analyzed) have a Total Consequence of Asset Closure/Failure below a score of 10 out of a possible 20 points.
  - Structures identified to have the greatest consequence of their closure/failure and are of concern to the transportation network include G-132, EG-001, B-114, G-037 and G-038.
- **Total Risk of Asset Failure**
  - 37 structures are over the age of 70 years in the Municipality of West Grey, which is of concern as, according to Statistics Canada, the average expected useful life of a bridge in Ontario ranges between 64 to 88 years.
  - At least 41 structures are coming due in the next 20 years for major rehabilitation and/or full replacement.
- **Structure Priority List**
  - The 10 structures identified of highest priority include: G-037, G-038, N-051, EG-001, G-044, B-003, G-132, B-020, N-060, and N-058.

Table of Contents

APPENDICES

1 Introduction

Triton Engineering Services Ltd. (Triton) has been retained by the Municipality of West Grey (the Municipality) to complete a comprehensive evaluation of the current condition of all bridges and culvert crossings under the Municipality's jurisdiction and create a structure priority list. A total of 103 of the 114 structures have been inventoried and analyzed as part of the prioritization process and are structures which directly impact the movement and efficiencies of West Grey's overall vehicular transportation network. Currently, 25 of these structures are closed or in the advanced stages of their service life and will require major rehabilitation or full replacement. Due to municipal budget limitations and in order to ensure maximum return on investment, a strategic *Bridge Prioritization Program* has been created to identify structures critical to the vehicular transportation network in West Grey, identify candidate structures for closure, and guide an approach for the maintenance and rehabilitation/replacement of structures over the next 10-year period.

The *Bridge Prioritization Program* outlines various component categories which affect the movement and efficiencies of West Grey's overall transportation network and which aids in demonstrating the importance of each bridge/culvert structure to the transportation network providing an associated structure score under each category. A total structure score will be assessed and accounts for the combination of all categories, represented by the **Total Risk of Asset Failure**. Structure priority is based on the highest numeric value for the Total Risk of Asset Failure and years of service life remaining. The Total Risk of Asset Failure is the product of the following two main components:

- Total Probability of Asset Failure
- Total Consequence of Asset Closure/Failure

Total Probability of Failure x Total Consequence of Closure/Failure = ***Total Risk of Asset Failure***

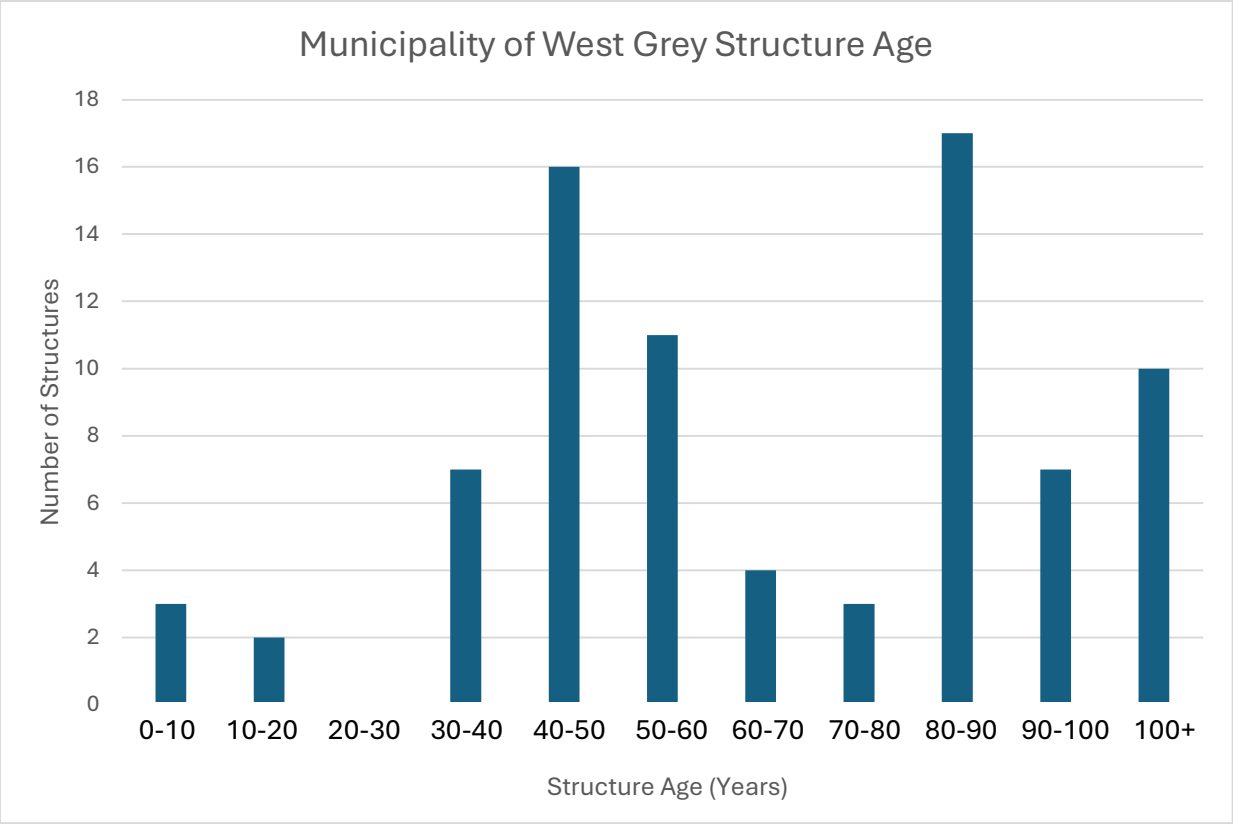
A list of structures with the highest replacement/major rehabilitation priority based on the Total Risk of Asset Failure will be updated on a bi-annual basis to align with the updated bridge and culvert inspections under the Ontario Structure Inspection Manual (OSIM) format. Bi-annual structure inspections for structures exceeding a 3.0 metre span are a provincially mandated requirement for all municipalities. As structures are repaired or replaced, they will be re-inspected and reprioritized accordingly. The Total Risk of Asset Failure equation provides a quantitative approach to asset management to remove subjectivity as best possible.

This report will clearly indicate which structures are of the highest replacement priority and vital to West Grey's overall transportation network, as well as state which structures are candidates for closure. The *Bridge Prioritization Program* will provide a clear insight and understanding of the process the Municipality of West Grey is undertaking with their structure asset management to support and remain compliant with *Ontario Regulation 588/17* (O. Reg. 588/17) "Asset Management Planning".

2 Background Information

As indicated above, structures to be reviewed under the *Bridge Prioritization Program* include bridges and culverts greater than 3.0 metres in span, to be consistent with the OSIM format. A Key Map of all the structures included in the *Bridge Prioritization Program* can be seen in Appendix A. According to Statistics Canada, the average expected useful life of a bridge in Ontario ranges between 64 years for a local bridge to 88 years for a highway bridge, dependent on various factors. The age of the West Grey bridges and culverts inventoried, with data available, as part of this analysis is outlined in Figure 1, below.

Figure 1: Age Distribution of Structures Included in the Bridge Prioritization Plan



As detailed above, the majority of structures in the Municipality of West Grey are older than 40 years of age, with the majority of structures falling into the 80 – 90-year age category. This highlights the challenge the Municipality is faced with as to where to best allocate limited resources. Given the average service life of a bridge in Ontario ranges from 64 years to 88 years, the majority of structures in West Grey have already surpassed the expected service life. Once structures have surpassed their average service life, maintenance and repairs in the form of major rehabilitation are not typically economically feasible, nor are they recommended.

3 Methodology

The Total Risk of Asset Failure is the numeric value at which structures in this *Bridge Prioritization Program* will be evaluated to determine their importance to the overall transportation network in West Grey. As mentioned previously, the Total Risk of Asset Failure is a product of the Total Probability of Asset Failure and the Total Consequence of Asset Closure/Failure. The following sub-sections detail the component categories that equates to the Total Risk of Asset Failure.

3.1 Total Probability of Asset Failure

The Total Probability of Asset Failure is the likelihood for eventual structure failure or compromised key structural elements which affect the overall integrity of the structure and is based on existing conditions of the bridge or culvert. A higher value is indicative of the structures higher probability of failure whereby a lower value indicates the structure has service life remaining prior to the requirement for any major rehabilitation or replacement. The Total Probability of Asset Failure portion of the equation for the Total Risk of Asset Failure is the sum of the Average Daily Traffic (ADT) experienced on the road segment where the structure is located and the Bridge Condition Index (BCI), a rated numeric value consistent with the values in the municipalities OSIM bi-annual inspection reporting.

3.1.1 Average daily traffic (ADT)

A significant indicator for the Probability of Failure is the number of vehicles using the structure daily. Higher daily traffic volumes result in wear and deterioration and an increased chance of physical structure damage caused by impact from a vehicular collision with structure components/elements. Average daily traffic count data was obtained and provided by the Municipality of West Grey. Although traffic counts are from 2016, they are considered representative for providing context regarding the classification of each road , its importance to the overall transportation network, and the resulting detour impacts to traffic patterns on surrounding roads in the vicinity of the structure. Traffic counts from 2016 were also used as this was prior to the majority of the current structure closures and representative of those roads that were used as major thoroughfare routes. Traffic counts were scored from 1 – 5 based on the criteria presented in Table 1, below. Detailed traffic counts for each road segment can be found in Appendix B.

Table 1: ADT Scoring System

Average Daily Traffic Scoring System					
Score	1	2	3	4	5
ADT	0-100	101250	251-500	501-1000	>1000

3.1.2 Bridge condition Index (BCI)

Burgess Engineering Inc. completed the 2022, 2023 & 2024 OSIM report for 103 of the 114 structures in the Municipality of West Grey. The BCI value used in the *Bridge Prioritization Program* was obtained from these OSIM reports and plays a significant role in determining when structures are approaching the end of their service life. A higher BCI value indicates the structure is in an operative and good structural condition, whereby a lower value indicates a poor structural condition and may result in the need for closure for its risk of potential failure. The OSIM report

for each structure provides an estimate of remaining years of service life and recommendations on whether rehabilitation or full replacement is a viable option to extend service life. For the purposes of the scoring process, for this variable in the equation, the BCI value for each structure was converted to a rating out of a possible 5 points using a weighted average. If a structure is currently removed, the previously available BCI value for that structure was used. OSIM reports can be found in Appendix C. Below is the equation used to determine each structure score for the BCI.

$$BCI\ Score = \frac{(100 - BCI)}{100} * 5$$

3.2 Total Consequence of Closure/Failure

The Total Consequence of Closure/Failure is the result of the scenario where the structure is left in an "as-is" condition i.e.; no repair or replacement. This scenario assumes inevitable closure, and the impact of that closure on the transportation network, and ultimately, the effect on the community of West Grey. A calculated outcome that yields a higher value under the Total Consequence of Closure/Failure equation indicates the structure has a greater impact to the overall transportation network in its ability to provide an adequate level of service to the community. Conversely, yielding a lower value is indicative of a structure that has a lesser impact in its ability to provide an adequate level of service when considering the entirety of West Grey's overall transportation network. The following sub-sections elaborate on the composition of this part of the equation.

3.2.1 Change in Response Time (Minutes)

An important factor when evaluating municipal infrastructure such as road/structure crossings is its ability to provide an acceptable level of service to the community in the form of access for emergency services (EMS) to achieve a reliable and prompt response times. . To prioritize structures, EMS response times were analyzed as part of this Program to ensure the Municipality can maintain an acceptable level of service to the community as part of *Ontario Regulation 588/17*. This variable in the Total Consequence of Closure/Failure equation assesses the change in emergency response times resulting from the closure of a structure as compared to the structure in its functional state. This is measured in minutes and is the change in response time to the furthest side of the structure from the closest hospital. The change in response time was modelled by the Grey County GIS and Planning Division using mapping software. Each structure was given a numeric score out of a total possible 5 points relative to the other structures in West Grey. The greatest change in response time belonged to Structure B-011, 11.2 minutes and was used in the equation below for the "Maximum Change in Response Time". These maps showing routes to each structure from the nearest hospital are available for reference in Appendix D.

$$Change\ in\ Response\ Time\ Score = \frac{Change\ in\ Response\ Time}{Maximum\ Change\ in\ Resposne\ Time} * 5$$

3.2.2 Detour length (Kilometres)

Detour length was modelled using mapping software as the distance travelled from one side of the structure to the other without crossing the structure, measured in kilometres. This variable was assessed out of a possible 5 points relative to the other structures that were analyzed. The longest detour for the structures analyzed was B-020, 16.2 kilometres, and was used in the equation below for "Maximum Detour Length". If there were no detour options available, a maximum score of 5 was given. Detour maps can be found in Appendix E

$$Detour\ Length\ Score = \frac{Detour\ Length}{Maximum\ Detour\ Length} * 5$$

3.2.3 Average daily traffic (ADT)

See section 3.1.1 for the assessment methodology.

ADT contributes to the Total Consequence of Closure/Failure as well as the Total Risk of Asset Failure above in Section 3.1. While a high ADT volume count increases the potential for structural element failure and/or closure, it also has significant implications on the traffic networks ability to achieve an acceptable level of service and has the potential to alter traffic patterns. A long-term closure on a road with a high ADT volume count would see increased traffic volumes on adjacent roads due to the need for their use to detour this traffic. For this reason, ADT volumes is applied to the Total Risk of Asset Failure as well as the Total Consequence of Asset Closure/Failure so as to minimize long-term changes to traffic patterns and maintain an acceptable level of service to the transportation network.

3.2.4 Local access

Local access refers to a resident's/landowner's ability to access and maintain connection from their property to the transportation network. This portion of the Total Consequence of Asset Closure/Failure looks to address structure closures that could impede access to a property. Local Access accounts for detour routes available to first responders (EMS) and represents a nuisance factor to resident/landowner access to their property should a large volume of property owners have to experience a detour to access their property. Table 2 below details the breakdown of how each structure was scored from 1 – 5.

Table 2: Local Access Scoring System

Local Access Scoring System					
Score	1	2	3	4	5
Local Access Issue	No residential access located on the road segment resulting in minor access issues	Less than 10 residents located on the structure's road segment	Greater than 10 residents located on the structure's road segment	Closed structure splits an owned parcel	Closed structure isolates a property from access to road segment

3.2.5 Heritage Status

Given the age of many of the structures within the Municipality of West Grey, they hold some significance at the local level to residents who have lived within the Municipality for numerous years. However, it is noted that none of the structures in the Municipality of West Grey have official

heritage status recognition at the Municipal, Provincial, or Federal levels. Given no official heritage status for any structure, a score cannot be given to the structures accordingly without introducing subjectivity. The goal of the *Bridge Prioritization Program* is to eliminate subjectivity as much as possible to focus on allocating resources towards structures critical to maintaining the transportation network within West Grey. For this reason, Heritage Status was not considered as part of the Total Consequence of Asset Closure/Failure.

4 Results

4.1 Total **Probability** of Asset Failure

A numeric value representing the Total Probability of Asset Failure is the sum of the ADT and BCI. Table 3 below, shows how each structure was scored and how they compare relative to other structures within the Municipality. Structures scoring higher for The Total Probability of Asset Failure are at a higher risk of structural failure and/or inevitable closure than structures with a lower scored value. The Total Probability of Asset Failure is scored out of a possible 10 points with structures scoring above a 5, indicative of structures considered to have a higher risk of element failure.

As detailed below, 19 structures have scored above a value of 5. It is noted that not all of the closed bridges and culverts within the Municipality have a Total Probability of Asset Failure above a value of 5. This is due to the relatively small volume of daily traffic experienced by these structures which theoretically lowers their probability for failure. The BCI value displayed in Table 3 for those structures that have been removed (i.e. G-033) represents the structure's condition prior to removal.

When considering Probability of Asset Failure, Structure N-051 is at greatest risk of failure yielding a value of 7.11, with structures N-060, N-058, B-003, N-059, B-020 and N-199 following closely behind with Probability of Asset Failure above a value of 6.0. Of these structures, only B-020 is currently closed, however the remainder of these structures listed experience the highest daily traffic volumes in the Municipality of West Grey and have limited years of remaining service life based on their current condition (BCI value).

Table 3: Total Probability of Asset Failure

Structure ID	Average Daily Traffic (ADT)	ADT Score	Bridge Condition Index (BCI)	BCI Score	Total Probability of Asset Failure
N-051	1018	5	57.8	2.11	**7.11**
N-060	1196	5	69.7	1.52	**6.52**
N-058	1196	5	70.0	1.50	**6.50**
B-003	601	4	50.1	2.49	**6.49**
N-059	1196	5	71.1	1.44	**6.44**
B-020	953	4	51.4	2.43	**6.43**
N-199	1196	5	74.9	1.26	**6.26**
D-001	4300	5	86.0	0.70	**5.70**
N-189	165	2	28.3	3.58	**5.58**
B-021	953	4	71.1	1.45	**5.45**
N-054	567	4	72.8	1.36	**5.36**
B-015	567	4	72.9	1.35	**5.35**
B-019	953	4	73.8	1.31	**5.31**
B-115	819	4	74.4	1.28	**5.28**
N-069	516	4	74.6	1.27	**5.27**
N-050	647	4	74.8	1.26	**5.26**
B-016	567	4	74.9	1.25	**5.25**
N-053	527	4	75.0	1.25	**5.25**
N-057	549	4	75.0	1.25	**5.25**
N-071	516	4	75.0	1.25	**5.25**
D-101	4300	5	100.0	0.00	**5.00**
B-004	455	3	72.1	1.40	**4.40**
B-026	399	3	72.0	1.40	**4.40**
B-107	311	3	72.2	1.39	**4.39**
B-013	378	3	73.0	1.35	**4.35**
N-072	329	3	73.2	1.34	**4.34**
G-035	257	3	73.4	1.33	**4.33**
N-188	165	2	54.1	2.30	**4.30**

Structure ID	Average Daily Traffic (ADT)	ADT Score	Bridge Condition Index (BCI)	BCI Score	Total Probability of Asset Failure
B-023	260	3	74.7	1.26	**4.26**
B-002	295	3	75.0	1.25	**4.25**
N-190	250	3	75.2	1.24	**4.24**
EG-001	10	1	37.0	3.15	**4.15**
N-055	130	2	63.2	1.84	**3.84**
B-008	134	2	63.8	1.81	**3.81**
G-038	54	1	44.3	2.79	**3.79**
B-196	196	2	66.9	1.66	**3.66**
N-184	61	1	46.8	2.66	**3.66**
B-001	197	2	67.4	1.63	**3.63**
G-040	119	2	67.5	1.63	**3.63**
N-061	134	2	68.5	1.58	**3.58**
B-009	196	2	68.7	1.57	**3.57**
G-033	74	1	48.7	2.57	**3.57**
G-041	119	2	69.6	1.52	**3.52**
B-006	232	2	70.1	1.50	**3.50**
G-044	56	1	51.1	2.45	**3.45**
B-119	126	2	71.3	1.44	**3.44**
B-005	130	2	71.7	1.41	**3.41**
N-056	105	2	71.7	1.41	**3.41**
G-031	189	2	72.1	1.40	**3.40**
B-104	114	2	72.1	1.39	**3.39**
B-027	211	2	72.7	1.36	**3.36**
N-067	104	2	72.9	1.35	**3.35**
N-179	164	2	73.4	1.33	**3.33**
B-195	139	2	73.5	1.32	**3.32**
N-163	232	2	73.7	1.32	**3.32**
G-154	125	2	73.7	1.31	**3.31**

Structure ID	Average Daily Traffic (ADT)	ADT Score	Bridge Condition Index (BCI)	BCI Score	Total Probability of Asset Failure
B-018	233	2	73.9	1.30	**3.30**
G-039	121	2	74.0	1.30	**3.30**
B-017	139	2	74.1	1.29	**3.29**
B-105	139	2	74.2	1.29	**3.29**
B-012	230	2	74.5	1.28	**3.28**
B-121	157	2	74.4	1.28	**3.28**
N-171	210	2	74.5	1.28	**3.28**
B-014	231	2	74.6	1.27	**3.27**
B-022	115	2	74.6	1.27	**3.27**
N-063	111	2	74.7	1.27	**3.27**
G-048	121	2	74.7	1.26	**3.26**
N-052	225	2	74.9	1.26	**3.26**
N-062	134	2	74.8	1.26	**3.26**
G-043	116	2	74.9	1.25	**3.25**
N-165	245	2	75.0	1.25	**3.25**
N-172	134	2	75.0	1.25	**3.25**
N-178	248	2	75.0	1.25	**3.25**
N-187	165	2	75.0	1.25	**3.25**
G-037	54	1	57.7	2.12	**3.12**
B-025	44	1	57.8	2.11	**3.11**
G-132	44	1	61.8	1.91	**2.91**
G-133	78	1	65.5	1.72	**2.72**
N-070	25	1	67.4	1.63	**2.63**
N-185	61	1	67.4	1.63	**2.63**
B-011	46	1	67.5	1.62	**2.62**
B-007	14	1	71.7	1.42	**2.42**
B-198	46	1	72.6	1.37	**2.37**
B-114	10	1	73.0	1.35	**2.35**

Structure ID	Average Daily Traffic (ADT)	ADT Score	Bridge Condition Index (BCI)	BCI Score	Total Probability of Asset Failure
G-046	76	1	73.0	1.35	**2.35**
N-183	86	1	73.4	1.33	**2.33**
B-113	34	1	73.9	1.30	**2.30**
N-064	71	1	74.0	1.30	**2.30**
G-032	57	1	74.2	1.29	**2.29**
B-118	46	1	74.4	1.28	**2.28**
G-047	76	1	74.4	1.28	**2.28**
N-065	92	1	74.3	1.28	**2.28**
B-010	74	1	74.8	1.26	**2.26**
G-030	55	1	74.8	1.26	**2.26**
G-148	79	1	74.8	1.26	**2.26**
N-068	48	1	74.9	1.26	**2.26**
B-120	32	1	75.0	1.25	**2.25**
G-045	56	1	74.9	1.25	**2.25**
N-066	64	1	75.0	1.25	**2.25**
B-028	187	2	100.0	0.00	**2.00**
G-197	51	1	98.4	0.08	**1.08**
B-112	39	1	99.6	0.02	**1.02**
G-126	47	1	99.5	0.02	**1.02**

4.2 Total **Consequence** of Asset Closure/Failure

As outlined in Section 3.2, the Total Consequence of Asset Closure/Failure is calculated as the sum of, Local Access, Detour Length, Emergency Response Time, and ADT volumes. The score for each structure analyzed as part of this *Bridge Prioritization Program* is presented in Table 4, below. Structures receiving a score with a higher value results in a greater impact to the community and the Municipality of West Grey's overall transportation network should they require closure, as compared to those structures receiving a lower value score. The Total Consequence of Asset Closure/Failure is scored out of a possible 20 points, with structures scoring lower than a value of 10 generally considered non-critical to the overall transportation network.

59 structures have a Total Consequence of Asset Closure/Failure value below 10. This represents over half of the structures analyzed. While structures individually can be considered non-critical to the transportation network, collectively, they need to be assessed strategically so as to not significantly alter local traffic patterns when making decisions regarding resource allocation.

Structure G-132 and B-114 top this list with a Total Consequence of Asset Closure/Failure value of 16. These two structures present a unique case where the structures experience a limited volume of daily traffic and serve less than five residential properties each. However, if either of these structures fail, the residents who rely on them will be completely isolated from the transportation network. Maintaining service and connection to the transportation network is a mandatory component to the Municipality's commitment to asset management and *Ontario Regulation 588/17*.

Structures G-037 and G-038 also present a unique situation. These structures are located on the same road segment on North Line in an area where localized flooding is known to make the road untraversable. With Structure G-038 currently closed, there is the potential for isolation in the event of localized flooding.

Other structures near the top of the list for Total Consequence of Asset Closure/Failure experience large volumes of daily traffic and consist of large detours and lengthy changes to response times from emergency services. These structures are generally located on major thoroughfares within the Municipality.

Table 4: Total Consequence of Asset Closure/Failure

Structure ID	ADT Score	Detour Length (km)	Detour Length Score	EMS Response Time (min)	EMS Response Score	Local Access Score	Total Consequence of Asset Closure/ Failure
EG-001	1	16.2	5.00	11.2	5.00	5	**16.00**
G-132	1	16.2	5.00	11.2	5.00	5	**16.00**
B-114	1	16.2	5	11.2	5.00	5	**16.00**
N-060	5	11.7	3.61	6.4	2.86	4	**15.47**
N-054	4	10.5	3.24	11.2	4.99	3	**15.23**
N-058	5	11.7	3.61	5.0	2.23	4	**14.84**
N-059	5	11.8	3.64	4.8	2.15	4	**14.79**
N-051	5	10.7	3.30	7.4	3.30	3	**14.61**
B-020	4	16.2	5.00	4.8	2.14	3	**14.14**
N-057	4	12	3.70	7.3	3.26	3	**13.96**
B-028	2	12.5	3.86	10.6	4.75	3	**13.61**
G-044	1	14.3	4.41	10.4	4.64	3	**13.06**
G-037	1	16	4.94	3.6	1.61	5	**12.55**
G-038	1	16	4.94	3.4	1.52	5	**12.46**
B-021	4	8.2	2.53	5.9	2.62	3	**12.15**
N-199	5	11.8	3.64	1.1	0.50	3	**12.14**
N-163	2	9.1	2.81	9.3	4.17	3	**11.98**
G-035	3	8.2	2.53	7.3	3.25	3	**11.78**
N-050	4	9.2	2.84	3.7	1.66	3	**11.50**
N-053	4	9.3	2.87	3.2	1.44	3	**11.31**
B-005	2	12.5	3.86	5.2	2.32	3	**11.18**
N-072	3	8.7	2.69	5.6	2.49	3	**11.17**
B-023	3	8.1	2.50	5.8	2.61	3	**11.11**
G-154	2	8	2.47	7.8	3.48	3	**10.95**
G-045	1	8.1	2.50	9.9	4.43	3	**10.93**
B-011	1	8.7	2.69	11.2	5.00	2	**10.69**
B-012	2	8.7	2.69	8.9	3.97	2	**10.65**

Structure ID	ADT Score	Detour Length (km)	Detour Length Score	EMS Response Time (min)	EMS Response Score	Local Access Score	Total Consequence of Asset Closure/ Failure
EG-001	1	16.2	5.00	11.2	5.00	5	**16.00**
B-026	3	8.1	2.50	4.5	2.03	3	**10.53**
B-016	4	8.3	2.56	4.3	1.92	2	**10.49**
B-104	2	9.2	2.84	8.1	3.62	2	**10.46**
B-015	4	8.2	2.53	4.3	1.92	2	**10.45**
N-069	4	7.3	2.25	4.9	2.20	2	**10.45**
B-018	2	9	2.78	8.2	3.67	2	**10.45**
B-019	4	8.2	2.53	1.9	0.84	3	**10.38**
B-107	3	8.1	2.50	4.2	1.87	3	**10.37**
B-115	4	8.2	2.53	4.0	1.78	2	**10.31**
N-067	2	6.4	1.98	9.6	4.30	2	**10.27**
N-071	4	7.3	2.25	4.3	1.93	2	**10.19**
B-003	4	8	2.47	3.8	1.70	2	**10.17**
B-013	3	6.8	2.10	6.7	3.01	2	**10.11**
B-009	2	6.7	2.07	6.8	3.04	3	**10.10**
B-004	3	12.2	3.77	0.5	0.25	3	**10.01**
G-040	2	7.9	2.44	3.4	1.52	4	**9.96**
G-041	2	7.9	2.44	3.2	1.43	4	**9.87**
N-171	2	7.8	2.41	7.7	3.45	2	**9.86**
B-196	2	6.7	2.07	6.2	2.77	3	**9.84**
N-056	2	13.1	4.04	1.5	0.69	3	**9.73**
G-031	2	12.6	3.89	1.9	0.84	3	**9.73**
B-198	1	8.7	2.69	8.9	3.99	2	**9.68**
B-006	2	12.1	3.73	4.2	1.88	2	**9.61**
D-001	5	2.0	0.62	2.0	0.89	3	**9.51**
B-027	2	8.2	2.53	4.3	1.90	3	**9.43**

Structure ID	ADT Score	Detour Length (km)	Detour Length Score	EMS Response Time (min)	EMS Response Score	Local Access Score	Total Consequence of Asset Closure/ Failure
N-070	1	6.8	2.10	9.6	4.29	2	**9.38**
G-047	1	10.2	3.15	4.9	2.20	3	**9.35**
D-101	5	2.0	0.62	1.4	0.63	3	**9.24**
B-195	2	8.2	2.53	3.8	1.71	3	**9.24**
N-189	2	8.6	2.65	5.8	2.59	2	**9.24**
G-033	1	9.2	2.84	5.2	2.32	3	**9.16**
G-197	1	8.1	2.50	8.1	3.63	2	**9.13**
N-190	3	12	3.70	0.9	0.38	2	**9.09**
B-001	2	7.8	2.41	5.8	2.59	2	**9.00**
B-002	3	8	2.47	3.2	1.44	2	**8.91**
G-043	2	8.2	2.53	2.9	1.31	3	**8.85**
B-105	2	8.3	2.56	2.8	1.25	3	**8.81**
B-014	2	8	2.47	3.0	1.33	3	**8.80**
N-061	2	11.4	3.52	2.8	1.25	2	**8.77**
N-052	2	8.6	2.65	4.7	2.09	2	**8.74**
N-062	2	11.8	3.64	2.4	1.09	2	**8.73**
N-178	2	8	2.47	4.9	2.18	2	**8.65**
N-165	2	8.6	2.65	2.0	0.89	3	**8.55**
G-048	2	7.9	2.44	2.1	0.94	3	**8.37**
N-055	2	8.3	2.56	3.8	1.69	2	**8.25**
N-179	2	7.8	2.41	3.8	1.71	2	**8.12**
G-039	2	8	2.47	1.4	0.63	3	**8.10**
B-120	1	7.8	2.41	5.9	2.64	2	**8.05**
B-119	2	6.3	1.94	2.3	1.04	3	**7.98**
B-022	2	8.4	2.59	3.0	1.32	2	**7.91**
N-188	2	8.5	2.62	2.8	1.25	2	**7.87**
N-064	1	8.1	2.50	5.3	2.37	2	**7.87**
N-184	1	7.9	2.44	5.4	2.41	2	**7.85**

Structure ID	ADT Score	Detour Length (km)	Detour Length Score	EMS Response Time (min)	EMS Response Score	Local Access Score	Total Consequence of Asset Closure/ Failure
B-017	2	8.3	2.56	0.6	0.26	3	**7.82**
G-046	1	10.1	3.12	1.5	0.68	3	**7.80**
N-066	1	7.9	2.44	5.2	2.31	2	**7.75**
N-185	1	7.9	2.44	4.8	2.14	2	**7.58**
N-172	2	8.7	2.69	1.8	0.81	2	**7.50**
G-126	1	8.1	2.50	4.4	1.97	2	**7.47**
B-010	1	9.2	2.84	3.3	1.49	2	**7.33**
B-008	2	6.6	2.04	2.6	1.16	2	**7.20**
N-187	2	8.1	2.5	1.5	0.69	2	**7.19**
N-063	2	7.9	2.44	1.6	0.70	2	**7.14**
G-030	1	10.4	3.21	1.7	0.77	2	**6.98**
G-148	1	8	2.47	3.3	1.48	2	**6.95**
B-121	2	8	2.47	0.8	0.34	2	**6.81**
N-068	1	6.4	1.98	4.0	1.79	2	**6.77**
G-133	1	5.5	1.70	2.2	0.98	3	**6.68**
N-183	1	7.9	2.44	2.2	1.00	2	**6.43**
N-065	1	8	2.47	2.0	0.89	2	**6.36**
B-118	1	5.4	1.67	3.5	1.57	2	**6.23**
B-113	1	6.8	2.10	1.3	0.60	2	**5.70**
G-032	1	8.6	2.65	0.1	0.05	2	**5.70**
B-112	1	6.8	2.10	0.6	0.27	2	**5.37**
B-025	1	6.5	2.01	0.4	0.18	2	**5.18**
B-007	1	5.9	1.82	1.3	0.60	1	**4.42**

4.3 Total **Risk** of Asset Failure

The Total Risk of Asset Failure is the product of the Total Probability of Asset Failure and the Total Consequence of Asset Closure/Failure. A higher value representing the Total Risk of Asset Failure indicates a structure with overall greater consequence to the transportation network within the Municipality of West Grey if closure is required, whereas a relatively lower value indicates structures with less impact upon required closure. Table 5 below, presents the numeric value for the Total Risk of Asset Failure for each structure analyzed as part of this *Bridge Prioritization Program*. It is from this value that the overall structure priority list is derived from.

Table 5 also includes the expected service life remaining for each structure. This information is provided by Burgess Engineering as part of the bi-annual OSIM reporting. With at least 41 structures coming due in the next 20 years for major rehabilitation and/or replacement, it is imperative this *Bridge Prioritization Program* be implemented to maintain a consistent, non-subjective approach to West Grey's asset management planning for bridge and culvert structures. This will provide a consistent rationale when selecting structures to receive budgetary resources and compliance with *Ontario Regulation 588/17* "Asset Management Planning".

Table 5: Total Risk of Asset Failure

Structure ID	Total Probability of Failure	Total Consequence of Failure	Total Risk of Asset Failure	Years of Service Life Remaining
N-051	7.11	14.61	**103.82**	0
N-060	6.52	15.47	**100.80**	8
N-058	6.50	14.84	**96.47**	8
N-059	6.44	14.79	**95.28**	16
B-020	6.43	14.14	**90.95**	0
N-054	5.36	15.23	**81.66**	32
N-199	6.26	12.14	**75.94**	23
N-057	5.25	13.96	**73.32**	48
EG-001	4.15	16.00	**66.40**	0
B-021	5.45	12.15	**66.19**	22
B-003	6.49	10.17	**66.01**	1
N-050	5.26	11.50	**60.50**	33
N-053	5.25	11.31	**59.38**	43
B-015	5.35	10.45	**55.98**	22
B-016	5.25	10.49	**55.09**	46
N-069	5.27	10.45	**55.09**	53
B-019	5.31	10.38	**55.08**	26
B-115	5.28	10.31	**54.44**	27
D-001	5.70	9.51	**54.21**	50
N-071	5.25	10.19	**53.48**	53
N-189	5.58	9.24	**51.62**	75
G-035	4.33	11.78	**51.00**	22
N-072	4.34	11.17	**48.49**	26
B-023	4.26	11.11	**47.36**	58
G-038	3.79	12.46	**47.15**	0
G-132	2.91	16.00	**46.53**	2
B-026	4.40	10.53	**46.31**	28

Structure ID	Total Probability of Failure	Total Consequence of Failure	Total Risk of Asset Failure	Years of Service Life Remaining
D-101	5.00	9.24	**46.21**	75
B-107	4.39	10.37	**45.52**	30
G-044	3.45	13.06	**44.98**	1
B-004	4.40	10.01	**44.00**	18
B-013	4.35	10.11	**43.96**	21
N-163	3.32	11.98	**39.73**	18
G-037	3.12	12.55	**39.09**	1
N-190	4.24	9.09	**38.51**	48
B-005	3.41	11.18	**38.17**	21
B-002	4.25	8.91	**37.89**	46
G-154	3.31	10.95	**36.28**	16
G-040	3.63	9.96	**36.11**	12
B-009	3.57	10.10	**36.03**	12
B-196	3.66	9.84	**35.96**	10
B-104	3.39	10.46	**35.50**	18
B-012	3.28	10.65	**34.91**	28
G-041	3.52	9.87	**34.74**	12
B-018	3.30	10.45	**34.50**	25
N-067	3.35	10.27	**34.45**	33
N-188	4.30	7.87	**33.83**	4
B-006	3.50	9.61	**33.60**	13
N-056	3.41	9.73	**33.24**	14
G-031	3.40	9.73	**33.04**	18
B-001	3.63	9.00	**32.68**	9
G-033	3.57	9.16	**32.67**	0
N-171	3.28	9.86	**32.28**	38
B-027	3.36	9.43	**31.74**	28

Structure ID	Total Probability of Failure	Total Consequence of Failure	Total Risk of Asset Failure	Years of Service Life Remaining
N-055	3.84	8.25	**31.71**	0
N-061	3.58	8.77	**31.36**	2
B-195	3.32	9.24	**30.72**	23
B-105	3.29	8.81	**28.99**	20
B-014	3.27	8.80	**28.78**	46
G-043	3.25	8.85	**28.77**	56
N-184	3.66	7.85	**28.73**	1
N-062	3.26	8.73	**28.48**	58
N-052	3.26	8.74	**28.47**	58
N-178	3.25	8.65	**28.11**	36
B-011	2.62	10.69	**28.02**	7
N-165	3.25	8.55	**27.78**	48
B-114	2.35	11.68	**27.46**	21
B-119	3.44	7.98	**27.45**	18
B-008	3.81	7.20	**27.44**	6
G-048	3.26	8.37	**27.33**	28
B-028	2.00	13.61	**27.22**	73
N-179	3.33	8.12	**27.03**	26
G-039	3.30	8.10	**26.73**	21
B-022	3.27	7.91	**25.86**	46
B-017	3.29	7.82	**25.76**	14
N-070	2.63	9.38	**24.68**	0
G-045	2.25	10.93	**24.65**	41
N-172	3.25	7.50	**24.37**	26
N-187	3.25	7.19	**23.36**	18
N-063	3.27	7.14	**23.30**	38
B-198	2.37	9.68	**22.93**	27

Structure ID	Total Probability of Failure	Total Consequence of Failure	Total Risk of Asset Failure	Years of Service Life Remaining
B-121	3.28	6.81	**22.36**	24
G-047	2.28	9.35	**21.32**	41
N-185	2.63	7.58	**19.96**	8
G-046	2.35	7.80	**18.32**	18
G-133	2.72	6.68	**18.20**	6
B-120	2.25	8.05	**18.11**	21
N-064	2.30	7.87	**18.08**	56
N-066	2.25	7.75	**17.45**	33
B-010	2.26	7.33	**16.56**	29
B-025	3.11	5.18	**16.11**	0
G-030	2.26	6.98	**15.76**	29
G-148	2.26	6.95	**15.73**	30
N-068	2.26	6.77	**15.27**	53
N-183	2.33	6.43	**14.98**	22
N-065	2.28	6.36	**14.54**	58
B-118	2.28	6.23	**14.20**	20
B-113	2.30	5.70	**13.13**	24
G-032	2.29	5.70	**13.05**	28
B-007	2.42	4.42	**10.68**	11
G-197	1.08	9.13	**9.86**	71
G-126	1.02	7.47	**7.65**	66
B-112	1.02	5.37	**5.48**	46

4.4 Structure Priority List

Table 6 below, provides an overall structure priority over the next 10 years for all bridges and culverts analyzed as part of this program. It is derived from the Total Risk of Asset Failure and the number of service years remaining. This priority list is proposed to serve as reference for funding and resource allocation moving forward with West Grey's asset management. The priority list will be updated bi-annually in collaboration with the OSIM reports to maintain a constant forecast of structures requiring structural attention. This will improve the planning process by providing a 10-year outlook on structural asset management to aid in the avoidance of multiple disruptions to major transportation routes in the Municipality of West Grey. A cost estimate is provided for these high priority structures, however, it should be noted that this assumes each structure is replaced with a concrete crossing structure to provide a consistent analysis to present the magnitude of the replacement. A detailed cost estimate, including suitable structure material, is not available until the engineering design process is initiated for each respective structure.

Structure G-044 is scheduled for replacement in 2025. Although it scores relatively high on the priority list, it is important to note that the decision and engineering process to replace structure G-044 was initiated well in advance of this *Bridge Prioritization program*.

Table 6: Structure Priority List

Rank	Structure ID	Structure Location	Structure Status	Total Risk of Asset Failure	Years of Service Life Remaining	Cost (2024 Dollar Value for Concrete)
1	G-037	North Line	Open	39.09	1	$ 2,001,000
1	G-038	North Line	Closed	47.15	0	$ 1,794,000
3	EG-001	Stone Hill Road	Open	66.40	0	$ 184,000
4	N-051	Concession 18	Closed	103.82	0	$ 2,944,000
5	G-044	North Line	Open	44.98	1	$ 2,200,000
6	B-003	Concession 6	Open	66.01	1	$ 2,600,000
7	G-132	Baseline	Open	46.53	2	$ 1,334,000
8	B-020	Concession 2 NDR	Closed	90.95	0	$ 3,197,000
9	N-060	Concession 12	Open	100.80	8	$ 1,127,000
10	N-058	Concession 12	Open	96.47	8	$ 1,725,000

4.5 Priority Structure Individual Assessment

4.5.1 Structures G-038 and G-037

Structure G-037 and G-038 are both located on North Line between Concession 2 and Camp Oliver Road of the former Township of Glenelg. Structure G-038 received a score of 47.15 for Total Risk of Asset Failure and scored 12.46 for Total Consequence of Asset Closure/Failure. G-038 is currently closed due to structural deterioration. Structure G-037 received a score of 39.09 for Total Risk of Asset Failure and scored 12.55 for Total Consequence of Asset Closure/Failure. These scores for Total Risk of Asset Failure and Total Consequence of Asset Closure/Failure were among the highest of the structures requiring significant rehabilitation or replacement over the next 10 years. Structure G-037 was originally constructed in 1954 with a span just over 9 metres and is a rigid frame concrete truss structure with concrete barrier railing and a concrete deck overlain by a granular wearing surface. Structure G-038 was originally built in 1920 and spans 14 metres. It is a concrete arch structure with concrete abutments and deck, also overlain by a granular wearing surface.

Figure 4.01: North Elevation View of Structure G-037

Figure 4.02: North Elevation View of Structure G-038

The high scores for these two structures were primarily attributed to the localized flooding known to occur on this road segment during spring snow melt. The flooding has the potential to isolate residents from the transportation network with Structure G-038 now closed and Structure G-037 in an advanced state of deterioration. In the event of localized flooding, there are no detour options available to landowners on this road segments. Rehabilitation is not viable for these structures and they both require full replacement.

4.5.2 Structure EG-001

Structure EG-001 is located on Stone Hill Road in the Township of Southgate. This culvert has scored a value of 66.40 for Total Risk of Asset Failure and has tied for the highest score, of 16.00, for Total Consequence of Asset Closure/Failure. EG-001 is a CSP culvert spanning 1.3 metres and has failed as evident in Figure 4.03, below.

Figure 4.03: EG-001 Structure Failure

Structure EG-001 presents a unique scenario in which the segment of Stone Hill Road is not a through road and provides access to two properties beyond the culvert. Therefore, this culvert must be in functioning condition for these properties to maintain access to the transportation network. This culvert still is still open, however, has zero years of service remaining, based on the 2024 OSIM inspection.

4.5.3 Structure N-051

Structure N-051 is located on Concession 18 between Grey Road 3 and Grey Road 28 in the former Township of Normanby. This bridge has scored the highest of all structures in the Municipality of West Grey with a score of 103.82 for Total Risk of Asset Failure. Structure N-051 is a pony truss bridge with a timber deck, overlain by asphalt, spanning 20 metres. The bridge was constructed in 1930 and has had previous repairs completed.

Figure 4.04: South Elevation View of Structure N-051

Concession 18 serves as a major east-west route through the Municipality of West Grey, indicative by the high volume of daily traffic. Over 7.0 minutes have been added for the Change in Emergency Response Time, when accounting for both segments of an EMS route, with the required closure of this structure. Detour length is also relatively longer than most structures analyzed in this program. With Structure N-051 currently closed, it ranks 3rd on the priority list just below G-037 and G-038, due to Concession 18's significance to the overall transportation network.

4.5.4 Structure G-044

Structure G-044 is located on North Line between Glenelg Road 23 and Side Road 40 in the former Township of Glenelg. Structure G-044 scored 44.98 for Total Risk of Asset Failure and scored 13.06 for Total Consequence of Asset Closure/Failure. 13.06 was the highest among structures with less than 5 service years remaining, with the exception of EG-001, mentioned above in Section 4.5.2, and G-132 and B-020, which each present their own unique situation, as described in Sections 4.5.6 and 4.5.7, below. This structure was constructed in 1920, resulting in a service life of over 100 years. Structure G-044 is a concrete arch culvert spanning 13.2 metres, overlain by granular fill. Given the current state of deterioration, rehabilitation is not feasible.

Figure 4.05: West Approach View of Structure G-044

Structure G-044 experiences a low volume of daily traffic relative to other structures in the Municipality. While this segment of North Line does not function as a major thoroughfare, the closure of this culvert significantly lengthens the response time from EMS by over 10.0 minutes when accounting for both segments of the emergency response route. The closure also results in a lengthy detour distance relative to other structures analyzed for landowners on North Line. As mentioned previously in Section 4.4, the decision and initiation of the engineering process to replace Structure G-044 precedes this *Bridge Prioritization Program*, however, as indicated by this analysis, it is an important structure for maintaining service to landowners on this segment of North Line.

4.5.5 Structure B-003

Structure B-003 is located on Concession 6 NDR between Grey Road 3 and Allan Park Road in the former Township of Bentick. Structure B-003 scored 66.01 for Total Risk of Asset Failure and was constructed in 1940. This structure is a concrete rigid frame bridge spanning 11.0 metres, overlain by asphalt. The bridge is currently recommended for inspection every 6 months due to advanced structural deterioration, as outlined in the 2024 OSIM report.

Figure 4.06: South Elevation View of Structure B-003

As indicated by high volumes of daily vehicular traffic, Concession 6 NDR serves as an east-west throughfare in the former Township of Bentick. Structure B-003 scored relatively high for Total Risk of Asset Failure due to its remaining years service life and the implications its closure will have on local traffic patterns and the overall transportation network.

4.5.6 Structure G-132

Structure G-132 is located on Baseline in the former Township of Glenelg and scored 46.53 for Total Risk of Asset Failure. This structure was installed in 1990 and is a CSP arch culvert spanning 3.6 metres, overlain by granular fill. The barrel is currently misshaped due to structural failure and there is inadequate fill over both sides of the culvert. Due to the misshaped structure, the CSP culvert will need to be replaced.

Figure 4.07: South Approach View of Structure G-132

Similar to Structure EG-001, Structure G-132 presents the same scenario in which the segment of road is not a through road (dead-end) and provides access to two properties. Therefore, this culvert must be in functional condition for these properties to maintain access to the transportation network. This culvert still has two years of service remaining and is proposed to be replaced prior to required closure from structural deterioration to avoid the isolation of properties.

4.5.7 Structure B-020

Structure B-020, known as the Kennedy Bridge, is located on Concession 2 between Grey Road 3 and Allen Park Road in the former Township of Bentinck. The structure received a score of 90.95 for Total Risk of Asset Failure, which ranks 5th highest of all structures analyzed. Structure G-020 is a pony truss bridge with a timber deck, overlain by asphalt, spanning 22.9 metres, and constructed in 1920. The bridge is currently closed due to advanced structural deterioration and only accessible to pedestrian traffic.

Figure 4.08: South Elevation View of Structure B-020

Although Kennedy Bridge has been closed since 2015, traffic volumes in 2016 displayed over 900 vehicles daily travelling on the segment west of Grey Road 3 on Concession 2, which is one of the highest traffic volumes in the Municipality. While traffic data from 2016 is not available east of Grey Road 3 within the same road segment as Kennedy Bridge, ongoing and updated ADT volumes by the Municipality have the potential to analyze the use of Concession 2 as a major thoroughfare and may indicate the need for the re-opening of Kennedy Bridge. For consistency and completeness and based on the high traffic counts recorded on adjacent and surrounding road segments from the structure an assumption of 953 ADT volume was used when evaluating B-020.

4.5.8 Structures N-058, and N-060

Structures N-058 and N-060 are located on the same road segment on Concession 12 between Side Road 25 and Baseline Road in the former Township of Normanby. Structure N-058 is a concrete T-beam structure that spans 9.1 metres, overlain by asphalt. Structure N-060 is a box culvert open footing spanning 5.5 metres, overlain by asphalt. Both structures were constructed in 1940 and received scores greater than 95.0 for Total Risk of Asset Failure, which were among the highest in the entire municipality. Structures N-058 and N-060 have 8 years of service life remaining. Both culverts are in fair to poor condition showing no signs of structural distress.

Figure 4.09: South Elevation View of Structure N-058

Figure 4.10: West Approach View of Structure N-060

These structures scored among the highest for Total Risk of Asset Failure, attributed to the large volume of daily vehicular road users on Concession 12, which serves as a major east-west thoroughfare in the Municipality. While change in emergency response times were relatively unaffected for these individual structures, a scenario requiring closure due to structure deterioration on Concession 12 has the potential to significantly alter traffic patterns in West Grey. These two structures appear at the bottom of the priority list due to the number of years of service life remaining compared to those at the top of the priority list, despite their high scores for Total Risk of Asset Failure.

4.6 Candidate Structures for Closure

Due to limited available resources, funding will be allocated to the rehabilitation and replacement of structures that were deemed most critical to maintaining the transportation network in the Municipality of West Grey. The structures presented below, in Table 7, are at the end, or nearing the end of their service life. These structures are proposed to remain closed in order to allocate resources to structures of more importance to the overall transportation network, as outlined in this report, within the Municipality. The structures identified as candidates for closure are derived from the Total Consequence of Asset Closure/Failure and the Years of Service Life Remaining.

The structures presented below all have less than ten years of service life remaining, with four of them currently closed. While there are structures identified in Table 4, above in Section 4.2, that score lower than a number of these structures presented, for Total Consequence of Asset Closure/Failure, they have over 10 years of service life remaining and will not require an unnecessary closure due to structural deterioration. Structures will not be closed until they reach the end of their service life, as indicated by the bi-annual OSIM reports. Although these structures are currently closed, or will be closed due to structural deterioration, they are still subject to bi-annual OSIM reporting with eventual removal based on the outcome and recommendations provided by the qualified structural engineer completing these inspections.

Table 7: Candidate Structures for Closure or to Remain Closed

Structure ID	Structure Location	Structure Status	Total Consequence of Asset Closure/Failure	Years of Service Life Remaining
B-025	Normanby-Bentick Townline	Closed	5.18	0
G-133	Southline	Open	6.68	6
B-008	Baseline	Open	7.20	6
N-185	Side Rd 25	Open	7.58	8
N-184	Side Rd 25	Open	7.85	1
N-188	Side Rd 25	Open	7.87	4
N-055	Concession 17	Closed	8.25	0
N-061	Concession 14	Open	8.77	2
G-033	Traverston Road	Closed	9.16	0
N-070	Concession 2 WGR	Closed	9.38	0

4.7 Candidate Structures for Closure Individual Assessment

4.7.1 Structure B-025

Structure B-025, known as the Hudson bridge, is located on Sideroad 10 between Concession 2 and the Normanby Bentinck Townline in the former Township of Bentinck. The structure received a score of 5.18 out of a possible 20, the second lowest of all structures analyzed. The structure was originally constructed in 1918, having minor repairs completed since. The structure spans 28.5 metres and is a steel pony truss structure with concrete abutments and timber deck overlain by an asphalt surface. The structure is currently closed, with rehabilitation not feasible. .

Figure 4.11: West Elevation View of Structure B-025

Structure B-025 experiences a low volume of daily traffic with respect to other structures and their respective road segments in the Municipality and offers a low level of service given the few properties on this road segment. The low volume of road users is attributed to the fact that Side Road 10 is relatively short “local road” which services road users between Concession 2 and Normanby-Bentick Townline. Change in emergency response times are minimally impacted due to closure. For these reasons, Structure B-025 is a candidate to remain closed.

Structure G-133

Structure G-133 is located on South Line between Concession 1 and Concession 2 in the former Township of Glenelg. This structure received a score of 6.68 for Total Consequence of Asset Closure/Failure. This structure is an open footing box culvert, overlain by granular fill, spanning 3 metres and constructed in 1965.

Figure 4.12: West Approach View of Structure G-133

South Line experiences a low volume of daily traffic with respect to other structures in the Municipality. Emergency response times and detour routes are also only minimally impacted relative to other structures analyzed. Due to the low volume of road users and minimal impact to landowner's services, Structure G-133 is proposed for closure at the end of its service life.

4.7.2 Structure B-008

Structure B-008 is located Baseline Road between Concession 12 and Concession 10 in the former Township of Bentinck. This structure received a score of 7.20 for Total Consequence of Asset Closure/Failure. Construction for this structure occurred in 1935. Structure B-008 is a rigid frame concrete bridge spanning 8.0 metres, with concrete barrier railings and an exposed concrete deck. As indicated in the 2024 OSIM report, rehabilitation is not an option.

Figure 4.13: West Elevation View of Structure B-008

Structure B-008 experiences a low volume of daily traffic and contains less than ten properties located between Concession 12 and Concession 10. Baseline is discontinuous north of Concession 12 and varies in condition throughout its north/south length. Detour lengths and emergency response times are minimally affected relative to other structures analyzed. Structure B-008 is not considered critical infrastructure to maintaining the overall transportation network and is therefore proposed as a candidate for closure.

4.7.3 Structure N-184 and N-185

Structures N-184 and N-185 are located on Sideroad 25 between Grey Road 9 and Concession 8 in the former Township of Normanby. Structure N-184 received a score of 7.58 and Structure N-185 received a score of 7.85 out of a possible 20 for Total Consequence of Asset Closure/Failure. Both structures were constructed in 1950, with repairs completed periodically. The structures span approximately 9 metres each and are rigid frame concrete culverts overlain by granular fill. Given the current condition of Structure N-184 and N-185 outlined in the 2024 OSIM reports, rehabilitation is not an option.

Figure 4.14: South Approach View of Structure N-184

Figure 4.15: South Approach View of Structure N-185

Structures N-184 and N-185 experience a low volume of daily traffic with respect to other structures in the Municipality, as it is located on Sideroad 25, which has a low level of service given the few residents that reside on this segment of the road. Structure detour lengths and emergency response times are not significantly impacted. For these reasons, Structures N-184 and N-185 are proposed candidates for closure at the end of their service life.

4.7.4 Structure N-188

Structure N-188 is located on Sideroad 25 between Concession 12 and Concession 14 in the former Township of Normanby. The structure received a score of 7.87 out of a possible 20 for Total Consequence of Asset Closure/Failure. The structure was originally constructed in 1945, and is a rigid frame concrete culvert, overlain by granular fill. Given its low BCI score indicating advanced state of deterioration, rehabilitation is not an option.

Figure 4.16: North Approach View of Structure N-188

Structure N-188 experiences a low volume of daily traffic with respect to other structures in the Municipality and has a low level of service given less than 10 properties located on Sideroad 25, between Concessions 12 and 14. With a low volume of daily vehicular traffic, combined with minimal changes to emergency response times, Structure N-188 is a candidate for closure.

4.7.5 Structure N-055

Structure N-055 is located on Sideroad 20 between Concession 16 and Concession 18 in the former Township of Normanby. The structure received a score of 8.25ut of a possible 20 for Total Consequence of Asset Closure/Failure. The structure was constructed in 1930 and is a pony truss with timber deck. With advanced timber deck deterioration and impact and corrosion damage throughout, rehabilitation is not an option.

Figure 4.17: East Elevation View of Structure N-055

Structure N-055 experiences a low volume of daily traffic, relative to other structures in the Municipality and has a low service level due to the few properties located on this segment of Sideroad 20. Emergency response times are also relatively unchanged for services at the structure location. For these reasons, Structure N-055 is a candidate proposed for closure.

4.7.6 Structure N-061

Structure N-061 is located on Concession 14 between Sideroad 25 and Baseline Road in the former Township of Normanby. The structure received a score of 8.77 for Total Consequence of Asset Closure/Failure due to the relatively low volume of daily road traffic and minor change in emergency response time. The original construction of Structure N-061 was completed in 1920 and spans approximately 15.0 metres with concrete abutments and a timber deck overlain by asphalt. The 2022 OSIM report completed by Burgess Engineering recommended a load limit of 5 tonnes be imposed and to monitor the structure every 6 months. Due to its poor condition and recommended load limit, rehabilitation is not an option..

Figure 4.18: North Elevation View of Structure N-061

Concession 14 functions as an east-west traffic route through the Municipality and experiences higher volumes of daily traffic on the western segments of this road, compared to where Structure N-061 is located. Due to the low volume of daily traffic and less than 10 properties located on this road segment, as well as minimal changes to emergency response times, Structure N-061 is a candidate proposed for closure.

4.7.7 Structure G-033

Structure G-033, known as Traverston Bridge, is located on Traverston Road between Grey Road 12 and Concession 8 in the former Township of Glenelg. The structure received a Total Consequence of Asset Closure/Failure score of 9.16, primarily due to its limited vehicular use as part of the transportation network. Prior to its removal, Traverston Bridge was a steel pony truss structure that was constructed in 1930 and spanned 34.8 metres over the Rocky Saugeen River. Traverston Bridge had one concrete abutment, and one founded on native bedrock, with a timber deck overlain by asphalt.

The structure has been closed since 2018, resulting in a service life above expected at 88 years. Emergency responders have established alternative routes to serve residents on Traverston Road, resulting in minor changes to response times. Prior to its removal, it was noted in the 2023 OSIM report that it would have required significant rehabilitation including the replacement of the majority of the superstructure. Due to its large span and geographic setting, Traverston Bridge is among the most expensive bridges to replace in the Municipality of West Grey.

Figure 4.19: South Approach View of Structure G-033

Daily traffic volumes used as part of the analysis in this *Bridge Prioritization Program* were from 2016, prior to the closure of Traverston Bridge. With relatively minimal use from the local transportation users, indicated by low daily traffic volumes when the structure was a functioning component of the transportation network, and minimal changes to traffic patterns and emergency

response times, Structure G-033 is a candidate proposed for continued closure.

4.7.8 Structure N-070

Structure N-070 is located on Concession 2 WGR between Road 71 and Highway 89 in the former Township of Normanby. The structure received a Total Consequence of Asset Closure/Failure score of 9.38, attributed to the low volume of daily traffic and low service level on this segment of Concession 2 WGR. The structure was originally constructed in 1920. Structure N-070 spans approximately 37 metres and is a steel beam and pony truss structure with concrete abutments, pier, and exposed timber deck. The structure is in poor overall condition and is currently closed. Due to the advanced state of deterioration, rehabilitation is not economically feasible..

Figure 4.20: South Approach View of Structure N-070

Structure N-070 experiences a low volume of daily traffic with respect to other structures in the Municipality. It is located on Concession 2 WGR, which provides a low level of service to the properties on this road segment and is discontinuous throughout its north-south length. For these reasons, Structure N-070 is a candidate proposed for closure.

5 Public Consultation

A Public Information Centre (PIC) was held October 3rd from 5pm to 8pm at the Durham Community Centre with representatives in attendance from Triton, The Municipality of West Grey Public Works, and members of Council. The Purpose of the PIC was to initiate public awareness of the proposed *Bridge Prioritization Program* and to open a discussion with residents to ensure all necessary factors were considered when establishing a non-subjective methodology. All public feedback was considered by the Project Team and is summarized in Appendix F.

6 The Municipality of West Grey Asset Management Plan

The Municipality of West Grey invests resources each year to repair, upgrade and replace its public infrastructure. Whether it involves paving roads, renovating bridges or upgrading sewer and water systems, it is to ensure that the Municipality's public infrastructure is safe and meets the needs of a growing population and economy.

The Municipality of West Grey's Asset Management Plan was last revised in 2022 and in alignment with *O. Reg. 588/17*.

Bridges and culverts represent a critical portion of the transportation services provided to the community. The Infrastructure and Public Works Department is responsible for the maintenance of all the bridges and culverts located across municipal roads with the goal of keeping structures in an adequate state of repair and minimizing service disruptions. These structural assets are assessed over a period of two years in accordance with the Ontario structure inspection manual - *O. Reg. 472/10, s. 2*. requirements.

To ensure that the Municipality's bridges and culverts continue to provide an acceptable level of service, the municipality should monitor the average condition of all structures. If the average condition declines, staff should re-evaluate their lifecycle management strategy to determine what combination of maintenance, rehabilitation, and replacement activities is required to increase the overall condition of the bridges and culverts.

Bridges and structural culverts are inspected every 2 years in accordance with *O. Reg. 472/10*. Bridges and structural culverts are inspected in detail and assigned a condition value between 1 and 100. The explanation of the condition values is shown in Table 8, below.

Table 8: BCI Condition Explanation

Condition	BCI Range	Description
Very Good	80 - 100	Overall, the components of the structure are in very good condition. Generally, the structure has been constructed within the last 10 years and does not require any work within the next 10 years
Good	70 - 79	Overall, the components of the structure are in good condition. Generally, the structure is adequate or requires only minor maintenance within the next 10 years.
Fair	60 - 69	Overall, the components of the structure are in fair condition. Generally, the structure requires major rehab or replacement within the next 10 years, or requires Deck Condition Surveys (DCS), Load Capacity Evaluation (LCE) or Rehabilitation/Replacement Analysis (RRA).
Poor	0 - 59	Overall, the components of the structure are in poor condition. Generally, the structure requires replacement within the next 5 years.

Currently, the average BCI value for all West Grey structures inspected under the OSIM format remains at 71, however, should the average BCI continue to decline the Municipality is at risk of being non-compliant with *O. Reg. 588/17* "Asset Management Planning", last updated in 2022. With the number of structures coming due for replacement or major rehabilitation, the average BCI is at risk of declining which necessitates the need for the implementation of the *Bridge Prioritization Program*. Furthermore, to support this prioritization program approach and ensure its viability, it is proposed that the Municipality of West Grey undergo strategic closures when those structures, identified in Section 4.6 of this report, reach the end of their service life. The goal of strategic closures is to ensure a non-subjective "greater good" approach is followed and that resources are allocated toward infrastructure critical to maintaining the overall transportation network to minimize impacts to emergency and municipal service disruptions. These strategic closures are supported by West Grey's Asset Management Plan as mandated in *O. Reg. 588/17.*

7 Recommendations & Conclusions

Through the development of this *Bridge Prioritization Program*, Triton has completed an in-depth review and evaluation of 103 of the 114 structures, spanning greater than 3.0 metres, within the Municipality of West Grey. The *Bridge Prioritization Program* has identified 10 structures approaching the end of their service life which are essential to the overall transportation network, and 10 structures that are proposed to either remain closed, or become closed at the end of their service life. These strategic closures ensure the essential structures within the community receive adequate resources to provide an overall sustainable transportation network. These continued structural evaluations are intended to assist the Municipality of West Grey with their structural asset management planning to be in compliance with *Ontario Regulation 588/17 "Asset Management Planning"* and is recommended to be updated, at a minimum, on a bi-annual basis to align with the Municipality's bi-annual OSIM structure inspections. In addition to updating the BCI values, it is recommended that all variables which contribute to the "Total Risk of Asset Failure" including ADT volumes, Detour Length, Change in Emergency Response Time and Local Access are re-evaluated and updated, accordingly. Ongoing and regular updates to the *Bridge Prioritization Program* will ensure a non-subjective "greater good" approach is maintained, and adequate resources are allocated toward infrastructure critical to the overall transportation network within the Municipality of West Grey.

Respectfully Submitted by

Triton Engineering Services Limited

Mike Heath, B.Eng.

Chris Clark, P.Eng.

APPENDIX A

KEY MAP OF THE MUNICIPALITY OF WEST GREY STRUCTURES

MUNICIPALITY OF WEST GREY - BRIDGE AND CULVERT LOCATIONS

FORMER BENTINCK TOWNSHIP

STRUCTURE NO.	NAME/LOCATION
1	Concession 12/13 NDR, Lot 3
2	Styx View Bridge, Concession 4/5 NDR, Lot 17/18
3	Concession 6/7 NDR, Lot 18
4	Concession 8/9 NDR, Lot 18
5	Concession 10/11 NDR, Lot 25
6	Mulock Road Bridge, Concession 11, Lot 25/26
7	Concession 12, Lot 30/31
8	Concession 12, Lot 32 & Concession 3 WGR, Lot 13, Baseline Road
9	Concession 3 WGR, Lot 14/15, Welbeck Road
10	Long Swamp Bridge, Concession 2/3 WGR, Lot 16
11	Concession 1 WGR, Lot 3/4, 3rd Sideroad WGR
12	Concession 1 WGR, Lot 6/7, Welbeck Road
13	Jelinski Bridge, Concession 3 WGR, Lot 35/36
14	Roy Hopkins Bridge, Concession 4/5, Lot 21
15	Sills Overflow, Concession 5, Lot 25/26
16	Sills Bridge, Concession 5, Lot 25/26
17	Concession 4/5, Lot 29, Concession 4 NDR
18	Concession 3 WGR, Lot 42, Concession 2 WGR
19	Concession 2/3, Lot 35, Concession 2 NDR
20	Kennedy Bridge, Concession 2/3, Lot 38
21	Kennedy Overflow, Concession 2/3, Lot 40
22	Bailey Bridge, Concession 3, Lot 40/41
23	Herd Bridge, Concession 1 SDR, Lot 40/41
25	Hudson Bridge, Concession 3 SDR, Lot 21, 10th Sideroad SDR
26	Mulock Road Bridge, Concession 2 SDR, Lot 50/51, Mulock Road
27	Concession 3 SDR, Lot 57, Concession 2 SDR
28	Concession 3 WGR, Lot 51, Concession 2 WGR
104	Baseline Road Culvert, Baseline Road, N of 18th Sideroad
105	Concession 4 NDR, Lot 30
107	Concession 4 NDR, Lot 3
112	Concession 2 WGR, Lot 3
113	3rd Sideroad WGR,3 WGR, Lot 7/8
114	Old Bridge Road South, Concession 1 NDR, Lot 33
115	5th Sideroad NDR, Lot 5
118	Concession 14 NDR, Lot 11
119	Concession 14 NDR, Lot 3
120	10th Sideroad NDR, Concession 14, Lot 10/11
121	5th Sideroad NDR, Concession 13, Lot 5/6
195	Culvert, Concession 4 NDR, Lot 26
196	Culvert, Welbeck Road, 3 WGR, Lot 14/15
198	Culvert, 3rd Sideroad WGR, 2 WGR, Lot 7/8

FORMER GLENELG TOWNSHIP

STRUCTURE NO.	NAME/LOCATION
30	Concession 2-3E, Lot 3
31	Concession 2-3E, Lot 28
32	Concession 8-9, Lot 5
33	Traverston Bridge, Concession 9, Lot 9
35	Concession 2-3W, Lot 100
37	Concession 2-3N, Lot 6
38	Concession 2-3N, Lot 6
39	Concession 4N, Lot 10-11
40	Burkes Bridge, Concession 4-5, Lot 13
41	Burkes Overflow Bridge, Concession 4-5, Lot 13
43	Glenelg Centre Bridge, Concession 5, Lot 17
44	Concession 2-3N, Lot 32
45	Concession 2-3N, Lot 33
46	McQuarrie Bridge, Concession 2-3N, Lot 43
47	Saugeen River Bridge, Concession 2-3N, Lot 47
48	Concession 4, Lot 10-11
126	Baptist Church Road, Concession 8, Lot 10-11
132	Baseline Road, Concession 3 EGR, Lot 55
133	Southline Road, Concession 2 EGR, Lot 63-64
148	Concession 6-7, Lot 12
154	Traverston Road, Concession 11, Lot 10-11
197	Concession 8-9, Lot 10
D-001	Garafraxa Street Bridge, Durham
D-101	Garafraxa Street Culvert, Durham
P-101	Durham Pedestrian Bridge

FORMER NORMANBY TOWNSHIP

STRUCTURE NO.	NAME/LOCATION
50	Concession 17/18, Lot 1
51	Concession 17/18, Lot 15
52	Concession 2/3, Lot 5
53	Concession 15/16, Lot 1
54	Ford's Bridge, Concession 15/16, Lot 7
55	Hampden Bridge, Concession 17, Lot 20/21
56	Concession 15/16, Lot 27
57	Kreller Bridge, Concession 11/12, Lot 9
58	Concession 11/12, Lot 30
59	Concession 11/12, Lot 30
60	Concession 11/12, Lot 30
61	Concession 13/14, Lot 30
62	Concession 13/14, Lot 30
63	Glasser Bridge, Concession 7/8, Lot 3
64	Diepel Bridge, Concession 7, Lot 5/6
65	Riest Bridge, Concession 5/6, Lot 9
66	Concession 5/6, Lot 19
67	Concession 2/3, Lot 63
68	Concession 3, Lot 63/64
69	Pfeffer Bridge, Concession 2, Lot 70/71
70	Concession 2, Lot 74
71	Pfeffer Culvert, Concession 2, Lot 70/71
72	Varney Road Culvert, Concession 2, Lot 74
163	Letter Breen Rd. Culvert, Letter Breen Road, Conc. 2, Lot 55/56
165	Camp Creek Culvert, Normanby-Bentinck Townline, Conc. 1, Lot 1
171	Concession 14, Lot 20
172	Concession 14, Lot 27
178	Sideroad 20, Conc. 13, Lot 20/21
179	Sideroad 20, Conc. 15, Lot 20/21
183	10th Sideroad, Conc. 5, Lot 10/11
184	Sideroad 25, Conc. 8, Lot 25/26
185	Sideroad 25, Conc. 8, Lot 25/26
187	Sideroad 25, Conc. 10, Lot 25/26
188	Sideroad 25, Conc. 12, Lot 25/26
189	Sideroad 25, Conc. 13, Lot 26
190	Helena St. Culvert, Helena St., Ayton
199	Culvert, Concession 12, Lot 26
P-102	Neustadt Pedestrian Bridge
EG-001	Stone Hill Road Culvert

MUNICIPALITY OF WEST GREY - DAM LOCATIONS

STRUCTURE NO.	NAME/LOCATION
D-201	Neustadt Dam
D-202	Durham Upper Dam
D-203	Durham Lower Dam

LEGEND

- CANDIDATE FOR CLOSURE
- HIGH PRIORITY STRUCTURE
- ALL STRUCTURES
- STRUCTURES CURRENTLY CLOSED

TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers

TOWNSHIP OF WEST GREY
BRIDGE & CULVERT PRIORITIZATION PLAN
KEY PLAN
PROJECT No. A3411

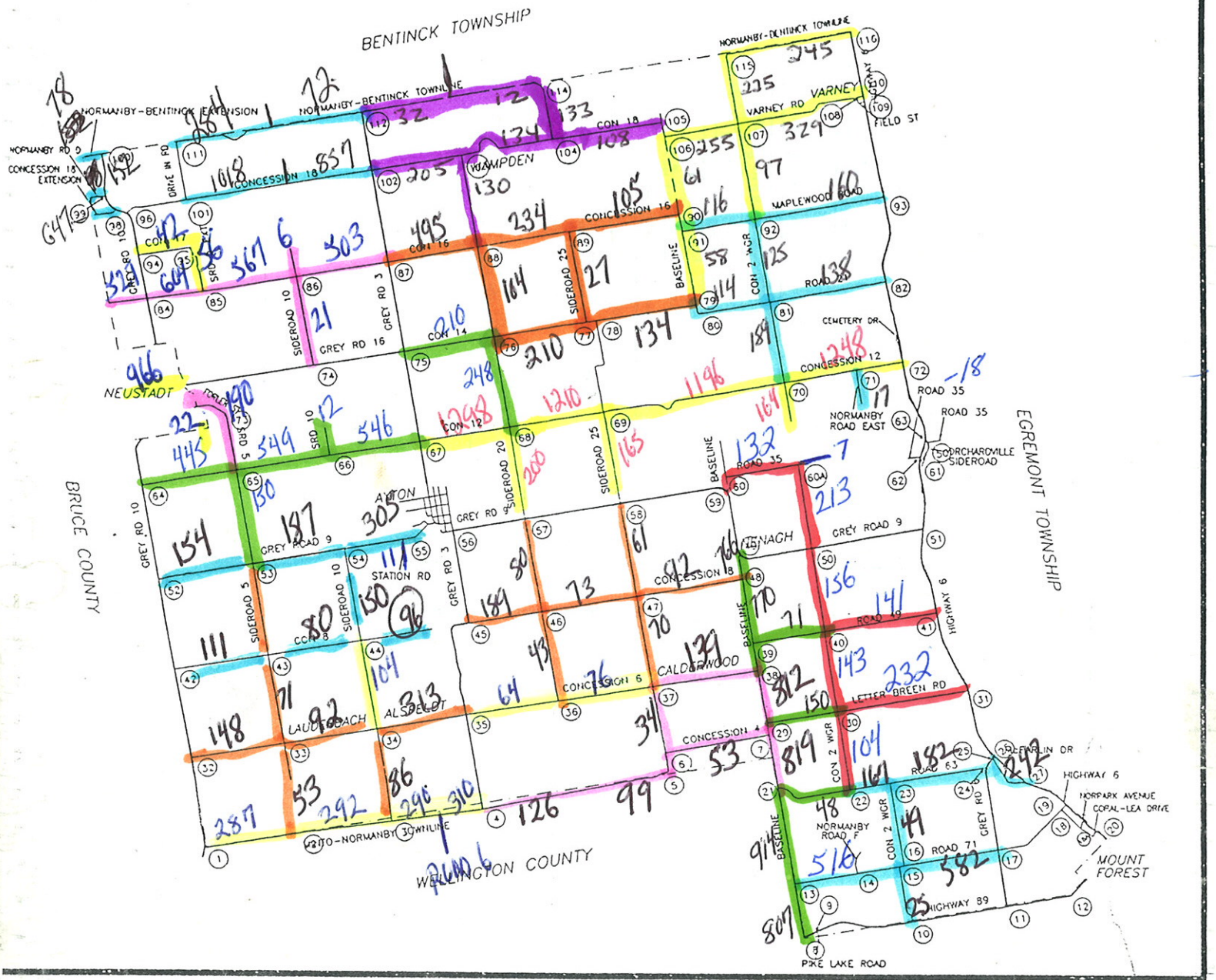
DRAWN BY: Z.M.vM.	SCALE: NTS
DATE: FEBRUARY 2025	DWG. No. KP–01

APPENDIX B

MUNICIPALITY OF WEST GREY TRAFFIC COUNTS

Traffic Counter

August 18 — 2016
August 19 — 2016



LEGEND

- Seasonal Road (no winter maintainance) – – – – – –
- Township / Private Road ———————
- County Road ———————
- Provincial Highway ———————
- Township Boundary ——— · ———

THE COUNTY OF GREY

Civic Addressing Project

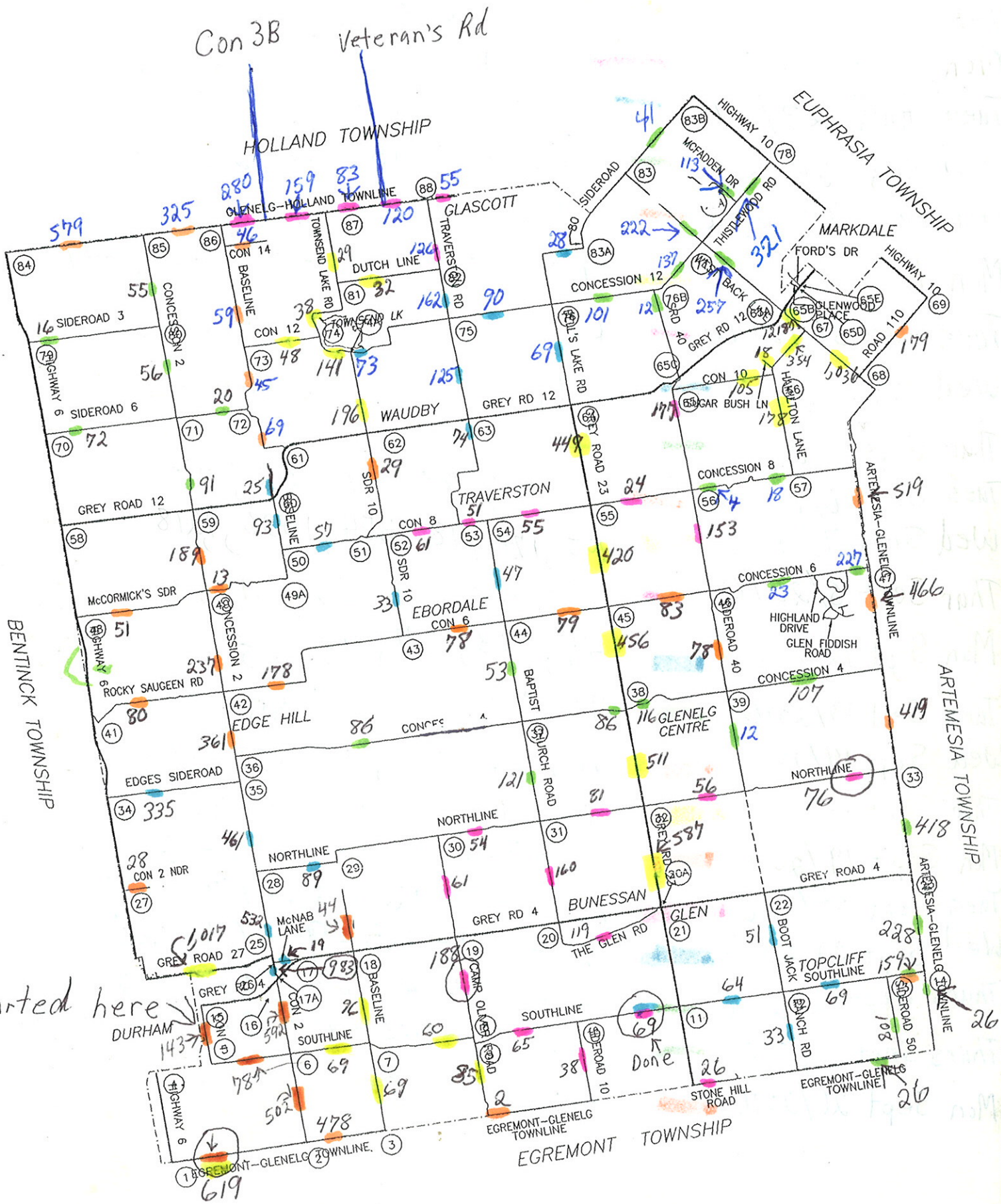
ROAD NAME MAPPING

TOWNSHIP OF NORMANBY

Scale 1:100 000

Recount = 0

Traffic Count 24 Hr



BENTINCK

AUG 23/16
AUG 24/16
AUG 25/16
AUG 26/16
AUG 30/16
AUG 31/16

SEPT 01/16
SEPT 02/16
SEPT 07/16
SEPT 08/16
SEPT 09/16
SEPT 13/16

SEPT 14/16
SEPT 15/16
SEPT 16/16
SEPT 20/16
SEPT 21/16
SEPT 22/16
SEPT 23/16

APPENDIX C

OSIM DELIVERABLES

OSIM Biennial Inspection Report

Site Number:

G-033

Concession 9, Lot 9, Traverston Bridge

East Elevation

Burgess Engineering Inc.

12-Oct-22

Inventory Data

Structure Name:	Concession 9, Lot 9, Traverston Bridge	**Site Number:**	G-033	
District:	Concession 9, Lot 9, Traverston Rd	**Road Name:**	Traverston Road	
County:	Grey County	**Owner:**	West Grey	
Township:	West Grey	**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	100	
Structure Type:	Through Truss w/ Concrete Deck	**Overall Struct. Width:**	5.8	m
Number of Spans:	1	**Roadway Width:**	4.88	m
Direction of Structure:	East-West	**Total Deck Length:**	36	m
GPS Coordinates (Degrees)		**Span (s):**	34.75	m
Latitude:	44.269584	**Total Deck Area:**	209	sq.m
Longitude:	-80.745601	**Current Load Limit:**	12	

Inspection Data

Date of Inspection:	15-Sep-22
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	19
Special Notes:	Bridge is in very poor condition, recommend demolishing.

Overall Inspection Summary

BCI: 49

Next Inspection: 15-Sep-24

Additional Investigation Required:	Complete demolishing	**Priority:**	High
Additional Investigation Cost:			
Rehabilitation Needs:			
Rehabilitation Timing:			
Total Rehabilitation Budget Costings:		**Engineering Fee:**	

Historical Data

Year Built:	1930	**Contract Number When Built:**	
Latest Biennial Inspection:		**Latest Specialized Inspection:**	
Latest Structure Rating:		**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: South Approach

Description: Wearing surface: Medium to wide transverse cracks throughout.

Description: Top chords: Areas of medium to severe corrosion with 100% section loss. (1/4)

Description: Top chords: Areas of medium to severe corrosion with 100% section loss. (2/4)

Description: Top chords: Areas of medium to severe corrosion with 100% section loss. (3/4)

Description: Top chords: Areas of medium to severe corrosion with 100% section loss. (4/4)

Description: Diagonals: Light to medium corrosion throughout.

Description: Diagonals: Impact damage on various diagonals. (1/3)

Description: Diagonals: Impact damage on various diagonals. (2/3)

Description: Diagonals: Impact damage on various diagonals. (3/3)

Description: Bearings: Medium to severe corossion throughout.

Description: Bottom chord: Very severe corrosion throughout member has been severed.

Description: Floor beams: Severe corossion at ends. (1/3)

Description: Floor beams: Severe corossion at ends. (2/3)

Description: Floor beams: Severe corossion at ends. (3/3)

Description: Curbs: Impact damage throughout.

Description: Verticals: Light to medium corrosion throughout.

Description: Abutment walls: Severe scouring and disintegration along bottom of abutment.

Description: Abutment walls: Moderate spalling with disintegration.

Description: Abutment walls: Severe spall with exposed reinforcement.

Description: Abutment walls: Partial foundation exposed and disintegrated, undermind.

Description: Connections: Very severe corossion and bottom chord connection to top chord.

Description: Connections: Very severe corossion and bottom chord connection to top chord.

Description: Connections: Very severe corossion and bottom chord connection to top chord.

Element Inspection

Element Group:	Approaches	**Site Number:**	G-033
Element Name:	Wearing surface	**Width:**	4.88 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	5 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	49 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 49 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Debris covering entire wearing surface.

Element Inspection

Element Group:	Approaches	**Site Number:**	G-033
Element Name:	Drainage system	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Grate partially covered by cedament.

Element Inspection

Element Group:	Approaches	**Site Number:**	G-033	
Element Name:	Approach slabs	**Width:**	4.88	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	5	m
Material:	Cast-in-place Concrete	**Count:**	2	
Location:		**Total Quantity:**	49	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 49 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	G-033
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam with timber posts	**Height:**	0 m
Sub-element:		**Length:**	5 m
Material:		**Count:**	4
Location:		**Total Quantity:**	20 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 20 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	G-033	
Element Name:	Curbs	**Width:**	0.2	m
Element type:		**Height:**	0.1	m
Sub-element:		**Length:**	8	m
Material:	Timber	**Count:**	4	
Location:		**Total Quantity:**	32	m
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 32 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-033
Element Name:	Embankments	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-033	
Element Name:	Deck top (with thin slab)	**Width:**	4.88	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	36	m
Material:	Cast-in-place Concrete	**Count:**	0	
Location:		**Total Quantity:**	176	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec:	0	**Good:**	166	**Fair:**	10	**Poor:**	0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-033	
Element Name:	Wearing surface	**Width:**	4.88	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	36	m
Material:	Asphalt	**Count:**	0	
Location:		**Total Quantity:**	176	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 88 **Poor:** 88

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to wide transverse cracks throughout.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-033
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam	**Height:**	0 m
Sub-element:		**Length:**	36 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	72 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 72 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-033
Element Name:	Top chords	**Width:**	0.35 m
Element type:		**Height:**	0.25 m
Sub-element:		**Length:**	43 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	86 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 50 **Fair:** 24 **Poor:** 12

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Areas of medium to severe corrosion with 100% section loss.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-033
Element Name:	Verticals/diagonals	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	6.7 m
Material:		**Count:**	12
Location:	Truss diagonals	**Total Quantity:**	80 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 32 **Fair:** 44 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to moderate corrosion throughout. Impact damage on various diagonals.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-033
Element Name:	Bearings (plate)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate to severe corossion throughout.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-033
Element Name:	Bottom chord (steel)	**Width:**	0.5 m
Element type:		**Height:**	0.15 m
Sub-element:		**Length:**	36 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	72 m
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 0 **Fair:** 36 **Poor:** 36

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Very severe corrosion throughout resulting in locations where member has been severed.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-033
Element Name:	Floor beams (steel)	**Width:**	0.2 m
Element type:		**Height:**	0.5 m
Sub-element:		**Length:**	5.8 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	23 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 5 **Fair:** 13 **Poor:** 5

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe corossion at ends.

Element Inspection

Element Group:	Accessories	**Site Number:**	G-033
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	G-033
Element Name:	Curbs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	36 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	72 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 54 **Fair:** 12 **Poor:** 6

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Impact damage throughout.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-033
Element Name:	Verticals/diagonals	**Width:**	0.2 m
Element type:		**Height:**	0.06 m
Sub-element:		**Length:**	6 m
Material:		**Count:**	14
Location:	Truss verticals	**Total Quantity:**	84 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 42 **Fair:** 42 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to moderate corrosion throughout.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-033
Element Name:	Walls	**Width:**	1 m
Element type:		**Height:**	6.1 m
Sub-element:		**Length:**	6.1 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	173 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 87 **Poor:** 86

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe scouring and disintegration along bottom of abutment. Moderate spalling with disintegration. Severe spall with exposed reinforcement. Partial foundation exposed and disintegrated, undermining abutment.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-033
Element Name:	Ballast walls	**Width:**	5.8 m
Element type:		**Height:**	1 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	12 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 8 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe spalling and disintegration.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-033	
Element Name:	Wingwalls	**Width:**	4	m
Element type:		**Height:**	3.2	m
Sub-element:		**Length:**	0	m
Material:	Pre-cast Concrete	**Count:**	4	
Location:		**Total Quantity:**	51	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec:	0	**Good:**	51	**Fair:**	0	**Poor:**	0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-033
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-033	
Element Name:	Soffit - thin slab	**Width:**	4.88	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	36	m
Material:	Timber	**Count:**	0	
Location:		**Total Quantity:**	176	sqm
Environment:	Benign	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 176 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-033	
Element Name:	Stringers (steel)	**Width:**	0.15	m
Element type:		**Height:**	0.2	m
Sub-element:		**Length:**	4.88	m
Material:	Steel	**Count:**	59	
Location:		**Total Quantity:**	245	sqm
Environment:	Benign	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 123 **Fair:** 61 **Poor:** 61

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Areas of moderate to severe corossion throughout. COUNT SEEMS OFF (TAKEN FROM PREVIOUS REPORT).

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-033
Element Name:	Connections	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	22
Location:		**Total Quantity:**	22 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 18 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Very severe corossion and bottom chord connection to top chord failing.

Element Inspection

Element Group:	Decks	**Site Number:**	G-033
Element Name:	Drainage system	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	16
Location:		**Total Quantity:**	16 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 16 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

OSIM Biennial Inspection Report

Site Number:

B-025

Hudson Bridge, Concession 3 SDR, Lot 21, 10th Sideroad S

West Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Hudson Bridge, Concession 3 SDR, Lot 21	**Site Number:**	B-025
District:	Concession 3 SDR, Lot 20 & 21	**Road Name:**	Normanby-Bentinck Townline
County:	Grey County	**Owner:**	West Grey
Township:		**Skew:**	0
Bridge or Culvert:	Bridge	**AADT:**	0
Structure Type:	Pony Truss w/ Timber Deck	**Overall Struct. Width:**	5.3 m
Number of Spans:	1	**Roadway Width:**	4.1 m
Direction of Structure:	North-South	**Total Deck Length:**	28.96 m
GPS Coordinates (Degrees)		**Span (s):**	28.5 m
Latitude:	44.131247	**Total Deck Area:**	153 sq.m
Longitude:	-80.972660	**Current Load Limit:**	15

Inspection Data

Date of Inspection:	11-Jun-24
Name of Inspector:	Andrew Burgess, P.Eng. & Joel Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	15
Special Notes:	Bridge is in poor condition. Monitor bearing seat regions for advancing deterioration. Advanced timber deck rot, with local failure. Recommend closure, asphalt removal and further assess.

Overall Inspection Summary

BCI: 58

Next Inspection: 11-Jun-26

Additional Investigation Required:	Monitor Deformations and Cracking	**Priority:**	Medium
Additional Investigation Cost:			
Rehabilitation Needs:	Replace		
Rehabilitation Timing:	1 to 5 years		
Total Rehabilitation Budget Costings:	$1,440,000.00	**Engineering Fee:**	$172,800

Historical Data

Year Built:	1918	**Contract Number When Built:**	
Latest Biennial Inspection:	September 14, 2022	**Latest Specialized Inspection:**	
Latest Structure Rating:	66	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Connections: Moderate to severe corrosion with areas of 100% section loss.

Description: Connections: Missing bolts at SE replaced by welding.

Description: Abutment Walls: Medium to severe delamination and disintegration along bottom.

Description: Abutment walls: Possible crushing at bearings.

Description: Abutment walls: Severe spalling and crushing at bearing plate.

Description: Abutment walls: Wide vertical crack.

Description: Wingwalls: Severe spalling and disintegration.

Description: Wingwalls: Wide cracking.

Description: Bearings: Severe corrosion in connection bolts.

Description: Bearings: 1 bearing elastomeric at North East.

Description: Soffit: Localized area of severe rot resulting in hole in sofft (1/2).

Description: Soffit: Localized area of severe rot resulting in hole in sofft (2/2).

Description: Bottom chord: Severe corrosion at ends with areas of 50% section loss.

Description: Bottom chord: Additional members added.

Description: Bottom chord: North chord

Description: Verticals/diagonals: Railing system welded to structure.

Description: Verticals/diagonals: Structural steel plates welded to diagonals.

Description: Railing system: Severe rotting.

Description: Wearing surface: Severe pothole at midspan (1/4).

Description: Wearing surface: Severe pothole at midspan (2/4).

Description: Wearing surface: Severe pothole at midspan (3/4).

Description: Wearing surface: Severe pothole at midspan (4/4).

Description: Wearing surface: Severe allegator cracking throughout.

Description: Wearing surface: Wide transverse cracking throughout.

Description: Curbs: Medium to severe rotting throughout with some areas of complete section loss.

Description: Signs: Minor impact damage on various signs.

Element Inspection

Element Group:	Bridge (overall)	**Site Number:**	B-025
Element Name:	All Elements	**Width:**	5.3 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	29 m
Material:		**Count:**	1
Location:		**Total Quantity:**	153 sqm
Environment:		**Not inspected:**	☐

Perform. deficiencies:	Load carrying capacity	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 153

Rehab Needs:	Replace with Bridge (large)	**Unit Cost:**	$8000 / sq.m
Rehab time period:	1 - 5 Years	**Estimated Cost:**	$1,440,000
Quantity:	180 sq.m		

General Comments:

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	B-025
Element Name:	Connections	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	14
Location:		**Total Quantity:**	14 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 8 **Fair:** 4 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate to severe corrosion with areas of 100% section loss. Missing bolts at SE replaced by welding.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-025
Element Name:	Walls	**Width:**	5.3 m
Element type:		**Height:**	2.9 m
Sub-element:		**Length:**	m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	31 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:	Load carrying capacity	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 16 **Fair:** 10 **Poor:** 5

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Medium to severe delamination and disintegration along bottom. Possible crushing at bearings. Severe spalling and crushing at bearing plate. Monitor bearing seat regions for advancing deterioration. Wide vertical crack.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-025	
Element Name:	Wingwalls	**Width:**		m
Element type:		**Height:**	3	m
Sub-element:		**Length:**	3	m
Material:	Cast-in-place Concrete	**Count:**	4	
Location:		**Total Quantity:**	18	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 6 **Fair:** 6 **Poor:** 6

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe spalling and disintegration. Wide cracking.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-025
Element Name:	Bearings (plate)	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe corrosion in connection bolts. 1 bearing elastomeric at North East.

Element Inspection

Element Group:	Decks	**Site Number:**	B-025
Element Name:	Drainage system	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:	Steel	**Count:**	10
Location:		**Total Quantity:**	10 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 10 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	B-025
Element Name:	Soffit - thin slab	**Width:**	5.3 m
Element type:		**Height:**	m
Sub-element:		**Length:**	28.96 m
Material:	Timber	**Count:**	
Location:		**Total Quantity:**	153 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:	Load carrying capacity	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 103 **Poor:** 50

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Deck soffit full of moisture, ends appear sound. Localized area of severe rot resulting in hole in sofft.

Element Inspection

Element Group:	Foundations	**Site Number:**	B-025
Element Name:	Foundation (below ground)	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:		**Count:**	2
Location:		**Total Quantity:**	2
Environment:		**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

No signs of settlement

Element Inspection

Element Group:	Beams/MLE's	**Site Number:**	B-025	
Element Name:	Floor beams (steel)	**Width:**	0.15	m
Element type:	I Type	**Height:**	0.45	m
Sub-element:		**Length:**	4.46	m
Material:	Steel	**Count:**	8	
Location:		**Total Quantity:**	48	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 48 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout. Limited inspection of floor beams above abutment.

Element Inspection

Element Group:	Beams/MLE's	**Site Number:**	B-025	
Element Name:	Stringers (steel)	**Width:**	0.15	m
Element type:	I Type	**Height:**	0.27	m
Sub-element:		**Length:**	4.4	m
Material:	Steel	**Count:**	6	
Location:		**Total Quantity:**	26	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 26 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Limited inspection due to stringer ends due to height of abutments. Light to corrosion throughout.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-025
Element Name:	Bottom chord (steel)	**Width:**	0.37 m
Element type:		**Height:**	0.09 m
Sub-element:		**Length:**	28.96 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	58 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 41 **Fair:** 11 **Poor:** 6

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe corrosion at ends with areas of 50% section loss. Additional members added. Repair noted on west bottom chord.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-025
Element Name:	Top chords	**Width:**	0.34 m
Element type:		**Height:**	0.19 m
Sub-element:		**Length:**	24.56 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	49 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 49 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-025
Element Name:	Verticals/diagonals	**Width:**	0.2 m
Element type:		**Height:**	0.75 m
Sub-element:		**Length:**	3.1 m
Material:	Steel	**Count:**	20
Location:	Truss diagonals	**Total Quantity:**	20 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 20 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout. Railing system welded to structure. Structural steel plates welded to diagonals.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-025
Element Name:	Verticals/diagonals	**Width:**	0.4 m
Element type:		**Height:**	0.75 m
Sub-element:		**Length:**	2.5 m
Material:	Steel	**Count:**	10
Location:	Truss verticals	**Total Quantity:**	10 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 10 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	B-025
Element Name:	Wearing surface	**Width:**	4.1 m
Element type:		**Height:**	m
Sub-element:		**Length:**	5 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	41 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 41 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	B-025
Element Name:	Approach slab	**Width:**	5.3 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	5 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	53
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 53 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

No signs of settlement.

Element Inspection

Element Group:	Approaches	**Site Number:**	B-025
Element Name:	Railing system	**Width:**	0 m
Element type:	Flexi beam with timber posts	**Height:**	0.65 m
Sub-element:		**Length:**	5 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	20
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	Structural
Maint needs:	Repair guide rail protection	**Maint. Time Period:**	1 Year

Condition Data:

Exec: 0 **Good:** 16 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe rotting.

Element Inspection

Element Group:	Barriers	**Site Number:**	B-025
Element Name:	Railing system	**Width:**	0 m
Element type:	Flexi beam	**Height:**	0.65 m
Sub-element:		**Length:**	28.96 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	58
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 58 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Barriers	**Site Number:**	B-025
Element Name:	Hand railings	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	28.96 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	58 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 58 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	B-025
Element Name:	Deck top (with thin slab)	**Width:**	5.3 m
Element type:		**Height:**	m
Sub-element:		**Length:**	28.96 m
Material:	Timber	**Count:**	
Location:		**Total Quantity:**	153 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:	Load carrying capacity	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 123 **Fair:** 20 **Poor:** 10

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	B-025
Element Name:	Wearing surface	**Width:**	4.1 m
Element type:		**Height:**	m
Sub-element:		**Length:**	28.96 m
Material:	Asphalt	**Count:**	
Location:		**Total Quantity:**	119 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	Structural
Maint needs:	Asphalt Repairs	**Maint. Time Period:**	1 Year

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 119

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe pothole at midspan possibly suggesting rot of wooden soffit, bottom of pothole feels punky. Severe allegator cracking throughout. Wide transverse cracking throughout.

Element Inspection

Element Group:	Embankments and Streams	**Site Number:**	B-025
Element Name:	Streams & waterways	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:		**Count:**	1
Location:		**Total Quantity:**	1
Environment:		**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Heavy flow at time of inspection.

Element Inspection

Element Group:	Embankments and Streams	**Site Number:**	B-025
Element Name:	Embankments	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Sidewalks/curbs	**Site Number:**	B-025	
Element Name:	Curbs	**Width:**	0.15	m
Element type:		**Height:**	0.1	m
Sub-element:		**Length:**	28.96	m
Material:	Timber	**Count:**	2	
Location:		**Total Quantity:**	58	m
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 13 **Fair:** 30 **Poor:** 15

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Medium to severe rotting throughout with some areas of complete section loss.

Element Inspection

Element Group:	Signs	**Site Number:**	B-025
Element Name:	Signs	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Minor impact damage on various signs.

OSIM Biennial Inspection Report

Site Number:

B-020

Concession 2 & 3, Kennedy Bridge

South Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 2 & 3, Kennedy Bridge	**Site Number:**	B-020
District:	Concession 2 & 3, Lot 40	**Road Name:**	Concession 2 NDR
County:	Grey County	**Owner:**	West Grey
Township:	West Grey	**Skew:**	0
Bridge or Culvert:	Bridge	**AADT:**	250
Structure Type:	Pony Truss w/ Concrete Deck	**Overall Struct. Width:**	5.7 m
Number of Spans:	1	**Roadway Width:**	5.5 m
Direction of Structure:	East-West	**Total Deck Length:**	24.3 m
GPS Coordinates (Degrees)		**Span (s):**	22.86 m
REVIEWED	**Latitude:** 44.183825	**Total Deck Area:**	139 sq.m
	Longitude: -80.945117	**Current Load Limit:**	4

Inspection Data

Date of Inspection:	10-Jun-24
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Cloudy
Temperature:	14
Special Notes:	Bridge is closed but pedestrian access possible. Advanced deterioration consider demolishing.

Overall Inspection Summary

BCI: 51

Next Inspection: 10-Jun-26

Additional Investigation Required: **Priority:**

Additional Investigation Cost:

Rehabilitation Needs:

Rehabilitation Timing:

Total Rehabilitation Budget Costings: **Engineering Fee:**

Historical Data

Year Built:	1920	**Contract Number When Built:**	
Latest Biennial Inspection:	March 23, 2023	**Latest Specialized Inspection:**	
Latest Structure Rating:	53	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Abutment Walls: Severe spalling with disintegration throughout.

Description: Wingwalls: Severe spalling with disintegration throughout (1/2).

Description: Wingwalls: Severe spalling with disintegration throughout (2/2).

Description: Soffit: Light rotting throughout.

Description: Soffit: Areas of localized severve rot.

Description: Floor beams: Medium to severe corrosion at various connections to stringers (1/2).

Description: Floor beams: Medium to severe corrosion at various connections to stringers (2/2).

Description: Stringers: Medium to severe corrosion throughout with areas of section loss.

Description: Bottom chord: Severe corrosion of chords at ends and connection locations.

Description: Top chords: Warping in top chord due to bolts missing at one point in time.

Description: Approach Wearing surface: Wide cracking along joints.

Description: Railing system: Severe rotting throughout.

Description: Railing system: Severe impact damage throughout.

Description: Wearing surface: Wide transverse cracking throughout.

Description: Curbs: Moderate to severe rotting throughout.

Description: Seals: Areas of joint failure at corner resulting in erosion of bridge.

Description: Connections: Severe corrosion with areas of 100% section loss.

Description: Bearings: Severe corrosion.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-020
Element Name:	Walls	**Width:**	5.7 m
Element type:		**Height:**	1.63 m
Sub-element:		**Length:**	m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	19 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 5 **Fair:** 7 **Poor:** 7

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe spalling with disintegration throughout.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-020
Element Name:	Wingwalls	**Width:**	m
Element type:		**Height:**	1.63 m
Sub-element:		**Length:**	3 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	20 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 5 **Fair:** 10 **Poor:** 5

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe spalling with disintegration throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	B-020
Element Name:	Drainage system	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:	Steel	**Count:**	10
Location:		**Total Quantity:**	10 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 10 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	B-020	
Element Name:	Soffit - thin slab	**Width:**	5.7	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	24.3	m
Material:	Timber	**Count:**		
Location:		**Total Quantity:**	139	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 117 **Fair:** 20 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light rotting throughout. Areas of localized severve rot.

Element Inspection

Element Group:	Foundations	**Site Number:**	B-020
Element Name:	Foundation (below ground)	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:		**Count:**	2
Location:		**Total Quantity:**	2
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

No signs of settlement.

Element Inspection

Element Group:	Beams/MLE's	**Site Number:**	B-020
Element Name:	Floor beams (steel)	**Width:**	0.16 m
Element type:	I Type	**Height:**	0.5 m
Sub-element:		**Length:**	5.1 m
Material:	Steel	**Count:**	6
Location:		**Total Quantity:**	45 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 27 **Fair:** 12 **Poor:** 6

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Medium to severe corrosion at various connections to stringers with areas of perferations.

Element Inspection

Element Group:	Beams/MLE's	**Site Number:**	B-020	
Element Name:	Stringers (steel)	**Width:**	0.15	m
Element type:	I Type	**Height:**	0.265	m
Sub-element:		**Length:**	4.86	m
Material:	Steel	**Count:**	30	
Location:		**Total Quantity:**	143	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 115 **Fair:** 20 **Poor:** 8

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Medium to severe corrosion throughout with areas of section loss.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-020	
Element Name:	Bottom chord (steel)	**Width:**	0.15	m
Element type:		**Height:**	0.13	m
Sub-element:		**Length:**	22.86	m
Material:	Steel	**Count:**	2	
Location:		**Total Quantity:**	46	m
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 10 **Fair:** 24 **Poor:** 12

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe corrosion of chords at ends and connection locations.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-020
Element Name:	Top chords	**Width:**	0.23 m
Element type:		**Height:**	0.15 m
Sub-element:		**Length:**	19.44 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	39 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 37 **Fair:** 1 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout. Warping in top chord due to bolts missing at one point in time.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-020
Element Name:	Verticals/diagonals	**Width:**	0.22 m
Element type:		**Height:**	0.13 m
Sub-element:		**Length:**	2.92 m
Material:	Steel	**Count:**	16
Location:	Truss diagonals	**Total Quantity:**	47 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 47 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout.

Element Inspection

Element Group:	Trusses/Arches	**Site Number:**	B-020
Element Name:	Verticals/diagonals	**Width:**	0.2 m
Element type:		**Height:**	0.2 m
Sub-element:		**Length:**	2.47 m
Material:	Steel	**Count:**	8
Location:	Truss verticals	**Total Quantity:**	20 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 20 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Light corrosion throughout.

Element Inspection

Element Group:	Approaches	**Site Number:**	B-020	
Element Name:	Wearing surface	**Width:**	5.5	m
Element type:		**Height:**		m
Sub-element:		**Length:**	5	m
Material:	Asphalt	**Count:**	2	
Location:		**Total Quantity:**	55	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 49 **Fair:** 4 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Wide cracking along joints.

Element Inspection

Element Group:	Approaches	**Site Number:**	B-020
Element Name:	Approach slab	**Width:**	5.5 m
Element type:		**Height:**	m
Sub-element:		**Length:**	5 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	55
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 53 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

No signs of settlement.

Element Inspection

Element Group:	Approaches	**Site Number:**	B-020
Element Name:	Railing system	**Width:**	0.1 m
Element type:		**Height:**	1.15 m
Sub-element:		**Length:**	5 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	20
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 0 **Fair:** 18 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe rotting throughout.

Element Inspection

Element Group:	Barriers	**Site Number:**	B-020
Element Name:	Railing system	**Width:**	0.1 m
Element type:		**Height:**	1.15 m
Sub-element:		**Length:**	24.3 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	49
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 37 **Fair:** 9 **Poor:** 3

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Severe impact damage throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	B-020	
Element Name:	Deck top (with thick slab)	**Width:**	5.7	m
Element type:		**Height:**		m
Sub-element:		**Length:**	24.3	m
Material:	Cast-in-place Concrete	**Count:**		
Location:		**Total Quantity:**	139	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 139 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	B-020
Element Name:	Wearing surface	**Width:**	5.5 m
Element type:		**Height:**	m
Sub-element:		**Length:**	24.3 m
Material:	Asphalt	**Count:**	
Location:		**Total Quantity:**	134 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 134

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Wide transverse cracking throughout.

Element Inspection

Element Group:	Embankments and Streams	**Site Number:**	B-020
Element Name:	Streams & waterways	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:		**Count:**	1
Location:		**Total Quantity:**	1
Environment:		**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data:

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

High water level at time of inspection.

Element Inspection

Element Group:	Embankments and Streams	**Site Number:**	B-020
Element Name:	Embankments	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Sidewalks/curbs	**Site Number:**	B-020
Element Name:	Curbs	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	24.3 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	49 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 37 **Fair:** 8 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Moderate to severe rotting throughout.

Element Inspection

Element Group:	Signs	**Site Number:**	B-020
Element Name:	Signs	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:			

General Comments:

Element Inspection

Element Group:	Joints	**Site Number:**	B-020	
Element Name:	Seals (paved over)	**Width:**	0	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0	m
Material:		**Count:**	2	
Location:		**Total Quantity:**	2	each
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Areas of joint failure at corner resulting in erosion of bridge.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	B-020
Element Name:	Connections	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	20
Location:		**Total Quantity:**	20 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 8 **Fair:** 6 **Poor:** 6

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe corrosion with areas of 100% section loss.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-020
Element Name:	Bearings (plate)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 1 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Limited inspection of west bearings. Severe corrosion.

OSIM Biennial Inspection Report

Site Number:

G-040

Concession 4, Lot 12 & 13, Burkes Bridge

North Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 4, Lot 12 & 13, Burkes Bridge	**Site Number:**	G-040	
District:		**Road Name:**	Concession 4	
County:	Grey County	**Owner:**	West Grey	
Township:	West Grey	**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	100	
Structure Type:	Pony Truss w/ Concrete Deck	**Overall Struct. Width:**	5.1	m
Number of Spans:	1	**Roadway Width:**	4.88	m
Direction of Structure:	East-West	**Total Deck Length:**	20.9	m
GPS Coordinates (Degrees)		**Span (s):**	19.5	m
General **Latitude:**	44.231108	**Total Deck Area:**	107	sq.m
Longitude:	-80.714599	**Current Load Limit:**	0	

Inspection Data

Date of Inspection:	12-Jun-24
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	22
Special Notes:	Bridge is in fair to poor condition, recommend end floor beam replacement and joint installation.

Overall Inspection Summary

BCI: 67

Next Inspection: 12-Jun-26

Additional Investigation Required: **Priority:**

Additional Investigation Cost:

Rehabilitation Needs:

Rehabilitation Timing:

Total Rehabilitation Budget Costings: **Engineering Fee:**

Historical Data

Year Built:	1930	**Contract Number When Built:**	
Latest Biennial Inspection:	March 24, 2023	**Latest Specialized Inspection:**	
Latest Structure Rating:	69	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Abutment walls: Light to medium vertical cracking with leachate staining throughout.

Description: Abutment walls: Medium to severe spalling throughout.

Description: Wingwalls: Light to medium map cracking with leachate staining.

Description: Wingwalls: Severe spalling and disintegration at SW quadrant.

Description: Hand railings: Severe impact damage and missing hand railing on south side.

Description: Floor beams: Medium to severe corrosion of beams below joints (1/2).

Description: Floor beams: Medium to severe corrosion of beams below joints (2/2).

Description: Wearing surface: Shallow potholes throughout.

Description: Wearing surface: Moderate pothole at midspan appear to be cold patched.

Description: Wearing surface: Light to medium transverse cracks.

Description: Railing systems: Severe rot.

Description: Stringers: Medium corrosion below joints.

Description: Soffit: Light to medium transverse cracking throughout.

Description: Soffit: Medium to severe delamination with exposed reinforcing throughout.

Description: Curbs: Light to medium horizontal and vertical cracking throughout.

Description: Top chords: Minor impact damage throughout.

Description: Top chords: North chord

Description: Bottom chord: Medium to severe corrosion at NW with areas of 100% section loss.

Description: Bottom chord: South chord

Description: Connections: Medium corrosion at various connections.

Description: Verticals/diagonals: Areas of severe corrosion with perforation.

Element Inspection

Element Group:	Joints	**Site Number:**	G-040
Element Name:	Armouring/retaining devices	**Width:**	5.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0.3 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	5 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 5 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Joints	**Site Number:**	G-040	
Element Name:	Concrete end dams	**Width:**	5.2	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0.3	m
Material:	Cast-in-place Concrete	**Count:**	2	
Location:		**Total Quantity:**	3	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 3 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	G-040	
Element Name:	Wearing surface	**Width:**	5.2	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	6.1	m
Material:	Asphalt	**Count:**	2	
Location:		**Total Quantity:**	64	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 64 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	G-040
Element Name:	Bearings (plate)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	G-040	
Element Name:	Abutment walls	**Width:**	5.2	m
Element type:		**Height:**	2.4	m
Sub-element:		**Length:**	0	m
Material:	Cast-in-place Concrete	**Count:**	2	
Location:		**Total Quantity:**	25	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec:	0	**Good:**	19	**Fair:**	4	**Poor:**	2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium vertical cracking with leachate staining throughout. Medium to severe spalling throughout.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-040	
Element Name:	Wingwalls	**Width:**	0	m
Element type:		**Height:**	1.8	m
Sub-element:		**Length:**	4.6	m
Material:	Cast-in-place Concrete	**Count:**	4	
Location:		**Total Quantity:**	33	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 25 **Fair:** 6 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium map cracking with leachate staining. Severe spalling and disintegration at SW quadrant.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-040
Element Name:	Hand railings	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	16.6 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	33 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	Structural
Maint needs:	Hand rail repairs	**Maint. Time Period:**	2 Year

Condition Data (m):

Exec: 0 **Good:** 30 **Fair:** 1 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe impact damage and missing hand railing on south side.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-040	
Element Name:	Floor beams (steel)	**Width:**	0.11	m
Element type:		**Height:**	1.5	m
Sub-element:		**Length:**	5.4	m
Material:	Steel	**Count:**	6	
Location:		**Total Quantity:**	108	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	Structural
Maint needs:	Structural steel repair	**Maint. Time Period:**	2 Year

Condition Data (sqm):

Exec: 0 **Good:** 74 **Fair:** 17 **Poor:** 17

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to severe corrosion of beams below joints. Recommend replace end floor beams.

Element Inspection

Element Group:	Decks	**Site Number:**	G-040
Element Name:	Drainage system	**Width:**	0 m
Element type:		**Height:**	0.85 m
Sub-element:		**Length:**	0.15 m
Material:	Steel	**Count:**	6
Location:		**Total Quantity:**	6 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 6 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-040
Element Name:	Deck top (with thin slab)	**Width:**	4.9 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	20.1 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	98 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 97 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-040	
Element Name:	Wearing surface	**Width:**	4.6	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	20.1	m
Material:	Asphalt	**Count:**	1	
Location:		**Total Quantity:**	92	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 87 **Fair:** 4 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Shallow potholes throughout. Moderate pothole at midspan appear to be cold patched. Light to medium transverse cracks.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-040
Element Name:	Embankments	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-040
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Foundations	**Site Number:**	G-040
Element Name:	Foundation (below ground level)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor scouring throughout.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-040
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam with timber posts	**Height:**	0 m
Sub-element:		**Length:**	32 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	64 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	Structural
Maint needs:	Barrier/railing system repair	**Maint. Time Period:**	2 Year

Condition Data (m):

Exec: 0 **Good:** 56 **Fair:** 4 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe rot.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-040
Element Name:	Stringers (steel)	**Width:**	0 m
Element type:		**Height:**	0.25 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	30
Location:		**Total Quantity:**	30 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 28 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Medium corrosion below joints.

Element Inspection

Element Group:	Decks	**Site Number:**	G-040
Element Name:	Soffit - thin slab	**Width:**	4.9 m
Element type:		**Height:**	0.5 m
Sub-element:		**Length:**	20.1 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	119 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 111 **Fair:** 6 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium transverse cracking throughout. Medium to severe delamination with exposed reinforcing throughout.

Element Inspection

Element Group:	Joints	**Site Number:**	G-040
Element Name:	Seals (open)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	5.2 m
Material:		**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	Structural
Maint needs:	Bridge Joint Repair	**Maint. Time Period:**	2 Year

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Open joint causing advancing floor beam deterioration.

Element Inspection

Element Group:	Accessories (Attachments and Signs)	**Site Number:**	G-040
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	G-040
Element Name:	Curbs	**Width:**	0.15 m
Element type:		**Height:**	0.15 m
Sub-element:		**Length:**	20 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	12 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 10 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium horizontal and vertical cracking throughout.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-040
Element Name:	Top chords	**Width:**	0.35 m
Element type:		**Height:**	0.13 m
Sub-element:		**Length:**	19.1 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	63 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 62 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor impact damage throughout. Light corrosion throughout.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-040
Element Name:	Bottom chord (steel)	**Width:**	0.3 m
Element type:		**Height:**	0.26 m
Sub-element:		**Length:**	23.7 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	82 m
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 79 **Fair:** 2 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Medium corrosion at NW with areas of 100% section loss.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-040
Element Name:	Connections	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	30
Location:		**Total Quantity:**	30 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 28 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Medium corrosion at various connections.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-040
Element Name:	Verticals/diagonals	**Width:**	0.17 m
Element type:		**Height:**	1.5 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	30
Location:		**Total Quantity:**	8 m
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 5 **Fair:** 3 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Areas of severe corrosion with perforation.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-040
Element Name:	Ballast walls	**Width:**	5.2 m
Element type:		**Height:**	1.7 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	18 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 18 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Limited inspection due to floor beams.

OSIM Biennial Inspection Report

Site Number:

B-003

Concession 6 & 7, Lot 18 Bridge

South Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 6 & 7, Lot 18 Bridge	**Site Number:**	B-003	
District:		**Road Name:**	Concession 6	
County:	Grey County	**Owner:**	West Grey	
Township:	West Grey	**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	450	
Structure Type:	Concrete Rigid Frame	**Overall Struct. Width:**	7.9	m
Number of Spans:	1	**Roadway Width:**	6.2	m
Direction of Structure:	East-West	**Total Deck Length:**	14.3	m
GPS Coordinates (Degrees)		**Span (s):**	11	m
General **Latitude:**	44.219626	**Total Deck Area:**	113	sq.m
Longitude:	-80.959416	**Current Load Limit:**	0	

Inspection Data

Date of Inspection:	10-Jun-24
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Cloudy
Temperature:	10
Special Notes:	Bridge is in poor condition. Sounding indicates very advanced deterioration advancing into the core of the bridge. Recommend 5 tonnes posting and regular 6 month inspections. Schedule for closure.

Overall Inspection Summary

BCI: 50

Next Inspection: 10-Dec-24

Additional Investigation Required:	Monitor Deformations and Cracking	**Priority:**	High
Additional Investigation Cost:			
Rehabilitation Needs:	Replace		
Rehabilitation Timing:	1 to 5 years		
Total Rehabilitation Budget Costings:	$904,000.00	**Engineering Fee:**	$108,480

Historical Data

Year Built:	1940	**Contract Number When Built:**	
Latest Biennial Inspection:	March 23, 2023	**Latest Specialized Inspection:**	
Latest Structure Rating:	58	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Abutment Walls: Medium to wide vertical cracks with leachate staining.

Description: Abutment Walls: Severe spalling on corners.

Description: Wingwalls: Light to medium cracking with leachate staining.

Description: Approach Curbs: Light to medium vertical cracking throughout.

Description: Approach Wearing Surface: Light to medium map cracking.

Description: Approach Wearing Surface: Light to medium potholing.

Description: Railing systems: Severe delamination and disintegration.

Description: Railing systems: Moderate spall on north side with exposed reinforcing.

Description: Railing systems: Improper connection.

Description: Soffit (ext): Severe disintegration and spalling throughout.

Description: Soffit (ext): Extensive map cracking with leachate staining and stalactite.

Description: Soffit (ext): Severe delamination throughout.

Description: Soffit (ext): Exterior soffit of south (1/3).

Description: Soffit (ext): Exterior soffit of south (2/3).

Description: Soffit (ext): Exterior soffit of south (3/3).

Description: Soffit (int): Medium to wide transverse and longitudinal cracking.

Description: Soffit (int): Possible sag at east and west ends. Possibly occurred at time of construction.

Description: Wearing Surface: Shallow potholing throughout.

Description: Wearing Surface: Light to medium cracking along centreline.

Description: Curbs: Severe spalling throughout.

Description: Curbs: Severe disintegration with exposed reinforcing.

Description: Curbs: Severe delamination throughout.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-003
Element Name:	Abutment walls	**Width:**	7.9 m
Element type:		**Height:**	1.8 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	28 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 12 **Fair:** 10 **Poor:** 6

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium vertical cracks with leachate staining. Light spalling on corners.

Element Inspection

Element Group:	Abutments	**Site Number:**	B-003	
Element Name:	Wingwalls	**Width:**	0	m
Element type:		**Height:**	1.8	m
Sub-element:		**Length:**	3.5	m
Material:	Cast-in-place Concrete	**Count:**	4	
Location:		**Total Quantity:**	13	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 6 **Fair:** 4 **Poor:** 3

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium cracking with leachate staining.

Element Inspection

Element Group:	Accessories (Attachments and Signs)	**Site Number:**	B-003
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	B-003	
Element Name:	Approach slabs	**Width:**	6.2	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	6.1	m
Material:	Cast-in-place Concrete	**Count:**	2	
Location:		**Total Quantity:**	76	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 76 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	B-003
Element Name:	Curbs	**Width:**	0.4 m
Element type:		**Height:**	0.283 m
Sub-element:		**Length:**	3.5 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	10 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 9 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium vertical cracking throughout.

Element Inspection

Element Group:	Approaches	**Site Number:**	B-003
Element Name:	Wearing surface	**Width:**	6.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	6.1 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	76 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 62 **Fair:** 12 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium map cracking. Light to medium potholing.

Element Inspection

Element Group:	Barriers	**Site Number:**	B-003
Element Name:	Railing systems	**Width:**	0 m
Element type:	Post and rail	**Height:**	1 m
Sub-element:		**Length:**	23.5 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	57 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 30 **Fair:** 18 **Poor:** 9

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe delamination and disintegration. Moderate spall on north side with exposed reinforcing.

Element Inspection

Element Group:	Barriers	**Site Number:**	B-003
Element Name:	Railing Systems	**Width:**	0 m
Element type:	Flexi beam with timber posts	**Height:**	0.75 m
Sub-element:		**Length:**	9 m
Material:	Steel	**Count:**	4
Location:	Approaches	**Total Quantity:**	36 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 36 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Improper connection.

Element Inspection

Element Group:	Decks	**Site Number:**	B-003
Element Name:	Deck top (with thick slab)	**Width:**	7.9 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	14.3 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	113 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 101 **Fair:** 8 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	B-003
Element Name:	Drainage System	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	B-003
Element Name:	Soffit - thick slab	**Width:**	1 m
Element type:		**Height:**	0.8 m
Sub-element:	Exterior	**Length:**	11 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	40 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 40

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe disintegration and spalling throughout with exposed reinforcing. Medium map cracking with leachate staining and stalactite. Moderate to severe delamination throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	B-003
Element Name:	Soffit - thick slab	**Width:**	5.9 m
Element type:		**Height:**	0 m
Sub-element:	Interior	**Length:**	11 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	65 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 45 **Poor:** 20

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to wide transverse and longitudinal cracking with leachate staining and stalactite. Possible sag at east and west ends.

Element Inspection

Element Group:	Decks	**Site Number:**	B-003
Element Name:	Wearing Surface	**Width:**	6.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	14.3 m
Material:	Asphalt	**Count:**	1
Location:		**Total Quantity:**	89 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 87 **Fair:** 1 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Shallow potholing throughout. Light to medium cracking along centreline.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	B-003	
Element Name:	Embankments	**Width:**	0	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0	m
Material:		**Count:**	4	
Location:		**Total Quantity:**	4	each
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	B-003
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Foundations	**Site Number:**	B-003
Element Name:	Foundation (below ground level)	**Width:**	m
Element type:		**Height:**	m
Sub-element:		**Length:**	m
Material:		**Count:**	
Location:		**Total Quantity:**	each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

No signs of settlement.

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	B-003
Element Name:	Curbs	**Width:**	0.4 m
Element type:		**Height:**	0.283 m
Sub-element:		**Length:**	14.3 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:	On deck	**Total Quantity:**	20 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 0 **Fair:** 12 **Poor:** 8

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe spalling throughout. Moderate disintegration with exposed reinforcing. Severe delamination throughout.

Element Inspection

Element Group:	Bridge (overall)	**Site Number:**	B-003
Element Name:	All Elements	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 sqm
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 1

Rehab Needs:	Replace with Bridge (concrete)	**Unit Cost:**	$8000 / sq.m
Rehab time period:	1 - 5 Years	**Estimated Cost:**	$904,000
Quantity:	113 sq.m		

General Comments:

Concrete rigid frame has advanced deterioration, recommend consider complete replacement.

OSIM Biennial Inspection Report

Site Number:

G-038

Concession 2 & 3N, Lot 6

North Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 2 & 3N, Lot 6	**Site Number:**	G-038	
District:		**Road Name:**	Northline Road	
County:	Grey County	**Owner:**	West Grey	
Township:	West Grey	**Skew:**	0	
Bridge or Culvert:	Culvert	**AADT:**	100	
Structure Type:	Concrete Arch	**Overall Struct. Width:**	6.1	m
Number of Spans:	1	**Roadway Width:**	5.49	m
Direction of Structure:	North-South	**Total Deck Length:**	14.3	m
GPS Coordinates (Degrees)		**Span (s):**	13.72	m
General **Latitude:**	44.207674	**Total Deck Area:**	87	sq.m
Longitude:	-80.758120	**Current Load Limit:**	0	

Inspection Data

Date of Inspection:	11-Jun-24
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	18
Special Notes:	Bridge is in very poor condition. Recommend closure.

Overall Inspection Summary

BCI: 44

Next Inspection: 11-Jun-26

Additional Investigation Required:		**Priority:**	
Additional Investigation Cost:			
Rehabilitation Needs:	Replace		
Rehabilitation Timing:	1 to 5 years		
Total Rehabilitation Budget Costings:	$487,200.00	**Engineering Fee:**	$58,440

Historical Data

Year Built:	1920	**Contract Number When Built:**	
Latest Biennial Inspection:	March 22, 2023	**Latest Specialized Inspection:**	
Latest Structure Rating:	52	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Wingwalls: Light to medium honeycombing throughout.

Description: Wingwalls: Severe scouring causing disintegration on west wingwalls.

Description: Embankments: Erosion on NW quadrant.

Description: Barrier/Parapet Walls: Severe spalling throughout.

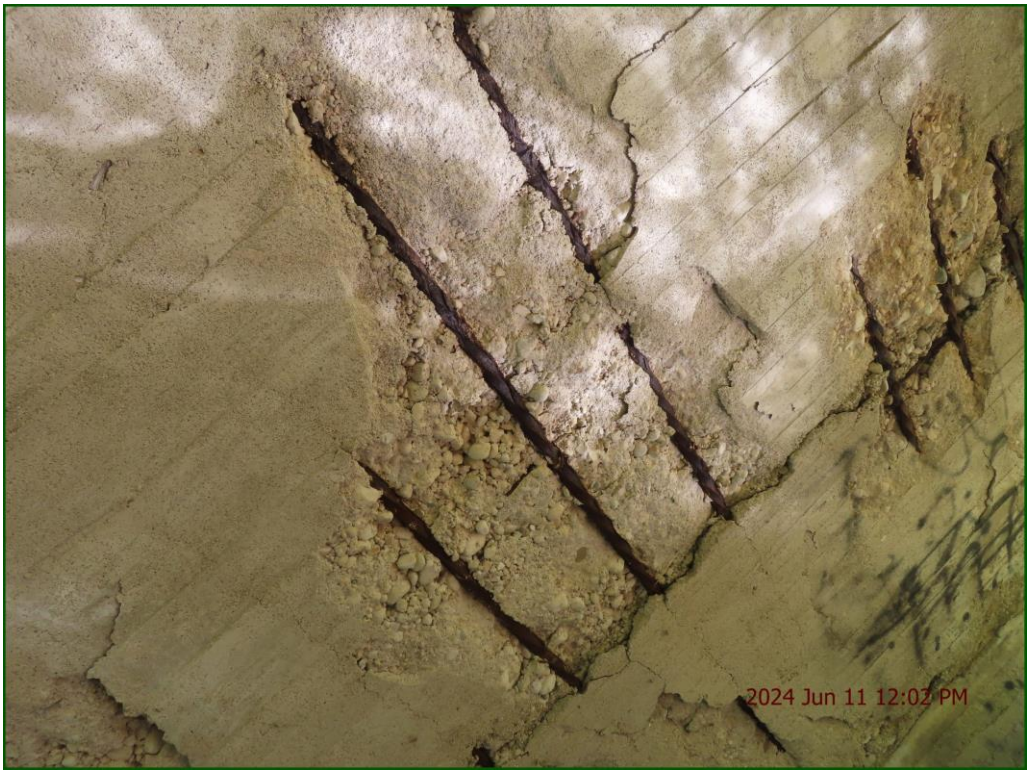
Description: Barrier/Parapet Walls: Severe disintregation thoughout.

Description: Soffit (int): Severe spalling with exposed reinforcing throughout (west).

Description: Soffit (int): Severe spalling with exposed reinforcing throughout (east).

Description: Soffit (int): Medium map cracking with leachate staining, just west of midspan.

Description: Soffit (int): Severe disintegration throughout.



Description: Soffit (ext): Severe spalling with exposed reinforcing throughout (north) (1/3).

Description: Soffit (ext): Severe spalling with exposed reinforcing throughout (north) (2/3).

Description: Soffit (ext): Severe spalling with exposed reinforcing throughout (north) (3/3).

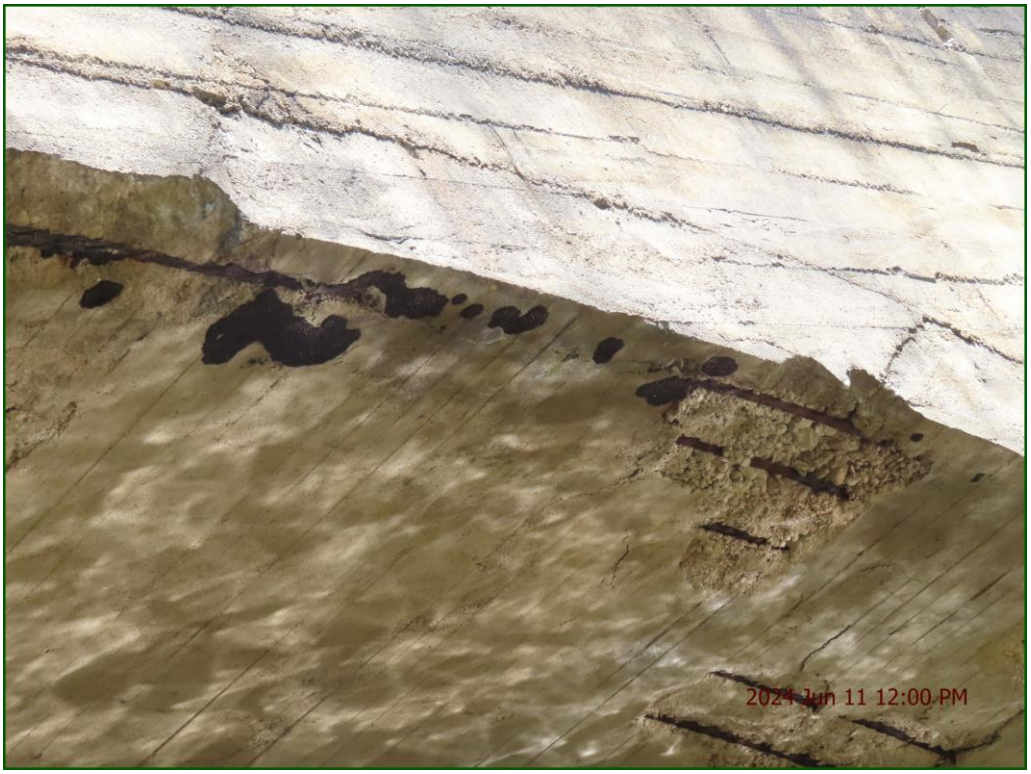
Description: Soffit (ext): Severe spalling with exposed reinforcing throughout (south) (1/2).

Description: Soffit (ext): Severe spalling with exposed reinforcing throughout (south) (2/2).

Description: Soffit (ext): Light to medium honeycombing throughout.

Description: Soffit (ext): Severe disintegration throughout (1/2).

Description: Soffit (ext): Severe disintegration throughout (2/2).



Description: Embankments: Severe erosion on NW quadrant.

Description: S&W: Stream has been diverted to west abutment causing erosion.

Description: Curbs: Severe spalling and disintegration throughout.

Description: Signs: Minor impact damage at SW quadrant.

Description: Abutment Walls: Severe scouring.

Description: Abutment Walls: Severe scouring and disintegration (1/3).

Description: Abutment Walls: Severe scouring and disintegration (2/3).

Description: Abutment Walls: Severe scouring and disintegration (3/3).

Description: Abutment Walls: Light to severe honeycombing throughout.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-038
Element Name:	Wingwalls	**Width:**	0 m
Element type:		**Height:**	3.5 m
Sub-element:		**Length:**	3 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	42 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 20 **Fair:** 10 **Poor:** 12

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium honeycombing throughout. Severe scouring causing disintegration on west wingwalls.

Element Inspection

Element Group:	Approaches	**Site Number:**	G-038
Element Name:	Wearing surface	**Width:**	5.5 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	3 m
Material:	Gravel	**Count:**	2
Location:		**Total Quantity:**	33 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	Routine
Maint needs:	Erosion control	**Maint. Time Period:**	1 Year

Condition Data (sqm):

Exec: 0 **Good:** 31 **Fair:** 1 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Erosion on NW quadrant encroaching on approach surface.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-038
Element Name:	Barrier/Parapet walls	**Width:**	0.28 m
Element type:	Parapet wall w/ no railing	**Height:**	1.35 m
Sub-element:		**Length:**	22.9 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	69 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 47 **Fair:** 12 **Poor:** 10

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to severe spalling throughout. Severe disintregation thoughout.

Element Inspection

Element Group:	Decks	**Site Number:**	G-038	
Element Name:	Soffit - thick slab	**Width:**	4.1	m
Element type:		**Height:**	0	m
Sub-element:	Interior	**Length:**	13.7	m
Material:	Cast-in-place Concrete	**Count:**	1	
Location:		**Total Quantity:**	56	sqm
Environment:	Benign	**Not inspected:**	☐	

Perform. deficiencies:	Load carrying capacity	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 16 **Fair:** 20 **Poor:** 20

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe spalling with exposed reinforcing throughout. Medium map cracking with leachate staining, just west of midspan. Severe disintegration throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	G-038
Element Name:	Soffit - thick slab	**Width:**	13.7 m
Element type:		**Height:**	2 m
Sub-element:	Exterior	**Length:**	1 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	41 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 17 **Fair:** 14 **Poor:** 10

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe spalling with exposed reinforcing throughout. Medium longitudinal cracking with leachate staining. Light to medium honeycombing throughout. Severe disintegration throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	G-038
Element Name:	Wearing surface	**Width:**	5.5 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	14.3 m
Material:	Gravel	**Count:**	1
Location:		**Total Quantity:**	79 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 75 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate to severe potholes with localized areas of exposed deck top.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-038	
Element Name:	Embankments	**Width:**	0	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0	m
Material:		**Count:**	4	
Location:		**Total Quantity:**	4	each
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	Routine
Maint needs:	Erosion control	**Maint. Time Period:**	1 Year

Condition Data (each):

Exec: 0 **Good:** 3 **Fair:** 0 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Steep embankments recommend protection. Severe erosion on NW quadrant, beginning to undermine roadway.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-038
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Stream has been diverted to west abutment causing erosion.

Element Inspection

Element Group:	Foundations	**Site Number:**	G-038
Element Name:	Foundation (below ground level)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

No signs of movement. Severe undermining.

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	G-038
Element Name:	Curbs	**Width:**	0.56 m
Element type:		**Height:**	0.25 m
Sub-element:		**Length:**	22.9 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	38 m
Environment:	Severe	**Not inspected:**	☑

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 34 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe spalling and disintegration throughout. Limited inspection due to gravel build up.

Element Inspection

Element Group:	Decks	**Site Number:**	G-038
Element Name:	Deck top (with thick slab)	**Width:**	6.1 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	14.3 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	87 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 57 **Fair:** 20 **Poor:** 10

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Accessories (Attachments and Signs)	**Site Number:**	G-038
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 3 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor impact damage at SW quadrant.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-038
Element Name:	Abutment walls	**Width:**	6.1 m
Element type:		**Height:**	1.2 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	15 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:	Load carrying capacity	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 3 **Poor:** 12

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate to severe scouring causing disintegration on east abutment. Severe scouring and disintegration causing west abutment to be completely undermined. Light to severe honeycombing throughout.

Element Inspection

Element Group:	Culvert (overall)	**Site Number:**	G-038
Element Name:	All Elements	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	1 sqm
Environment:		**Not inspected:**	☐

Perform. deficiencies:	Load carrying capacity	**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 1

Rehab Needs:	Replace with Culvert (concrete)	**Unit Cost:**	$5600 / sq.m
Rehab time period:	1 - 5 Years	**Estimated Cost:**	$487,200
Quantity:	87 sq.m		

General Comments:

Concrete arch has very advanced deterioration, recommend consider replacement/closure before next inspection.

OSIM Biennial Inspection Report

Site Number:

N-061

Concession 13/14, Lot 30

North Elevation

Burgess Engineering Inc.

12-Oct-22

Inventory Data

Structure Name:	Concession 13/14, Lot 30	**Site Number:**	N-061
District:	Concession 14, Lot 30	**Road Name:**	Concession Rd 14
County:	Grey County	**Owner:**	West Grey
Township:		**Skew:**	0
Bridge or Culvert:	Bridge	**AADT:**	200
Structure Type:	Pony Truss w/ Timber Deck	**Overall Struct. Width:**	5.1 m
Number of Spans:	1	**Roadway Width:**	4.7 m
Direction of Structure:	East-West	**Total Deck Length:**	17.2 m
GPS Coordinates (Degrees)		**Span (s):**	15.2 m
REVIEWED **Latitude:**	44.094373	**Total Deck Area:**	88 sq.m
Longitude:	-80.863631	**Current Load Limit:**	8

Inspection Data

Date of Inspection:	14-Sep-22
Name of Inspector:	Andrew Burgess, P.Eng. & Joel Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	20
Special Notes:	Bridge is in poor condition, N-W abutment bearing seat cracking/crushing, Monitor every 6 months. Very light truss recommend 5 tonnes load limit.

Overall Inspection Summary

BCI: 70

Next Inspection: 14-Mar-23

Additional Investigation Required: Monitor Deformations and Cracking **Priority:** High

Additional Investigation Cost:

Rehabilitation Needs:

Rehabilitation Timing:

Total Rehabilitation Budget Costings: **Engineering Fee:**

Historical Data

Year Built:	1920	**Contract Number When Built:**	
Latest Biennial Inspection:	June 14, 2018	**Latest Specialized Inspection:**	
Latest Structure Rating:		**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: East Approach

Description: Abutments: N-W Bearing seat cracking/crushing

Description: Abutments: N-W Bearing seat cracking/crushing

Description: Abutments: N-W Bearing seat cracking/crushing

Description: Abutments: N-W Bearing seat cracking/crushing

Description: Approach wearing surface: Medium transverse cracking.

Description: Wearing surface: Medium to wide transverse and longitudinal cracking throughout.

Description: Top chords: Minor impact damage.

Description: Top chords: Medium corrosion with section loss at ends.

Description: Curbs: Medium abrasions throughout.

Description: Wingwalls: Severe spall and possible crushing.

Description: Abutment walls: Medium to wide horizontal cracking.

Description: Girder ends.

Description: Soffit: Minor abrasions throughout.

Description: Floor beams: Light to medium corrosion throughout.

Description: General: Floor beams.

Element Inspection

Element Group:	Approaches	**Site Number:**	N-061
Element Name:	Wearing surface	**Width:**	4.7 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	5 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	47 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 45 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium transverse cracking.

Element Inspection

Element Group:	Approaches	**Site Number:**	N-061
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam with timber posts	**Height:**	0 m
Sub-element:		**Length:**	5 m
Material:		**Count:**	4
Location:		**Total Quantity:**	20 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 20 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Accessories	**Site Number:**	N-061
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	N-061	
Element Name:	Wearing surface	**Width:**	4.7	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	17.2	m
Material:	Asphalt	**Count:**	0	
Location:		**Total Quantity:**	81	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 8 **Fair:** 37 **Poor:** 36

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to wide transverse and longitudinal cracking throughout.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-061
Element Name:	Top chords	**Width:**	0.27 m
Element type:		**Height:**	0.1 m
Sub-element:		**Length:**	18.8 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	38 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 36 **Fair:** 1 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor impact damage. Medium corrosion with section loss at ends.

Element Inspection

Element Group:	Barriers	**Site Number:**	N-061
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam	**Height:**	0 m
Sub-element:		**Length:**	17.2 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	34 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 34 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	N-061
Element Name:	Curbs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	17.2 m
Material:	Timber	**Count:**	2
Location:		**Total Quantity:**	34 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 30 **Fair:** 4 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate abrasions throughout.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	N-061	
Element Name:	Embankments	**Width:**	0	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0	m
Material:		**Count:**	4	
Location:		**Total Quantity:**	4	each
Environment:		**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	N-061	
Element Name:	Deck top (with thin slab)	**Width:**	4.7	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	17.2	m
Material:	Timber	**Count:**	0	
Location:		**Total Quantity:**	81	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 45 **Fair:** 36 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Barriers	**Site Number:**	N-061
Element Name:	Hand railings	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	1.5 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	6 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 6 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Hand railing welded to top chord, creating heat effected zone in steal.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	N-061
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	N-061	
Element Name:	Wingwalls	**Width:**	0	m
Element type:		**Height:**	1.25	m
Sub-element:		**Length:**	2.45	m
Material:	Cast-in-place Concrete	**Count:**	4	
Location:		**Total Quantity:**	12	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec:	0	**Good:**	6	**Fair:**	4	**Poor:**	2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe spall and possible crushing.

Element Inspection

Element Group:	Abutments	**Site Number:**	N-061
Element Name:	Walls	**Width:**	6.1 m
Element type:		**Height:**	0.95 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	12 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 9 **Fair:** 2 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to wide horizontal cracking.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-061	
Element Name:	Bottom chord (steel)	**Width:**	0.15	m
Element type:		**Height:**	0.15	m
Sub-element:		**Length:**	17.2	m
Material:	Steel	**Count:**	2	
Location:		**Total Quantity:**	34	m
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 34 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-061
Element Name:	Stringers (steel)	**Width:**	0.2 m
Element type:		**Height:**	0.25 m
Sub-element:		**Length:**	17.2 m
Material:	Steel	**Count:**	6
Location:		**Total Quantity:**	114 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 114 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	N-061
Element Name:	Soffit - thin slab	**Width:**	5.1 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	17.2 m
Material:	Timber	**Count:**	0
Location:		**Total Quantity:**	88 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 88 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor abrasions throughout.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-061
Element Name:	Connections	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	16
Location:		**Total Quantity:**	16 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 16 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Foundations	**Site Number:**	N-061
Element Name:	Foundation (below ground level)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	N-061
Element Name:	Bearings (plate)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-061
Element Name:	Floor beams (steel)	**Width:**	0.15 m
Element type:		**Height:**	0.5 m
Sub-element:		**Length:**	5.1 m
Material:	Steel	**Count:**	3
Location:		**Total Quantity:**	22 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 20 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium corrosion throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	N-061
Element Name:	Drainage system	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-061
Element Name:	Verticals/diagonals	**Width:**	0.5 m
Element type:		**Height:**	0.15 m
Sub-element:		**Length:**	2 m
Material:	Steel	**Count:**	6
Location:	Truss verticals	**Total Quantity:**	12 m
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 12 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-061	
Element Name:	Verticals/diagonals	**Width:**	0.15	m
Element type:		**Height:**	0.05	m
Sub-element:		**Length:**	2.6	m
Material:	Steel	**Count:**	12	
Location:	Truss diagonals	**Total Quantity:**	31	m
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 31 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

OSIM Biennial Inspection Report

Site Number:

N-056

Concession 15/16, Lot 27

North Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 15/16, Lot 27	**Site Number:**	N-056	
District:	Concession 15 & 16, Lot 27	**Road Name:**	Concession Rd 16	
County:	Grey County	**Owner:**	West Grey	
Township:		**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	150	
Structure Type:	Pony Truss w/ Timber Deck	**Overall Struct. Width:**	5.6	m
Number of Spans:	1	**Roadway Width:**	4.5	m
Direction of Structure:	East-West	**Total Deck Length:**	22.6	m
GPS Coordinates (Degrees)		**Span (s):**	21.3	m
REVIEWED — **Latitude:**	44.111256	**Total Deck Area:**	127	sq.m
Longitude:	-80.879006	**Current Load Limit:**	10	

Inspection Data

Date of Inspection:	04-Jul-24
Name of Inspector:	Andrew Burgess, P.Eng. & Joel Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	20
Special Notes:	Bridge is in fair condition, showing no signs of structural distress.

Overall Inspection Summary

BCI: 72

Next Inspection: 04-Jul-26

Additional Investigation Required: **Priority:**

Additional Investigation Cost:

Rehabilitation Needs:

Rehabilitation Timing:

Total Rehabilitation Budget Costings: **Engineering Fee:**

Historical Data

Year Built:	1920	**Contract Number When Built:**	
Latest Biennial Inspection:	October 5, 2020	**Latest Specialized Inspection:**	
Latest Structure Rating:		**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: East Approach

Description: Approach Wearing Surface: Wide transverse crack.

Description: Wearing Surface: Medium to wide transverse cracks throughout.

Description: Verticals: Severe impact damage resulting in bent vertical (1/2).

Description: Verticals: Severe impact damage resulting in bent vertical (2/2).

Description: Curbs: Minor abrasions throughout.

Description: Wearing Surface: Moderate to severe potholes in areas where deck/soffit has failed (1/4).

Description: Wearing Surface: Moderate to severe potholes in areas where deck/soffit has failed (2/4).

Description: Wearing Surface: Moderate to severe potholes in areas where deck/soffit has failed (3/4).

Description: Wearing Surface: Moderate to severe potholes in areas where deck/soffit has failed (4/4).

Description: Bottom chord: South.

Description: Abutment Walls: Light to severe spalling throughout.

Description: Soffit: Moderate to severe rotting throughout.

Description: Soffit: Severe rot SW quadrant resulting in deck/soffit failure (local) (1/2).

Description: Soffit: Severe rot SW quadrant resulting in deck/soffit failure (local) (2/2).

Description: Top chords: Minor impact damage.

Description: Top chords: South.

Description: Floor beams: Various missing bolts connecting floor beams to stringers, not critical.

Element Inspection

Element Group:	Approaches	**Site Number:**	N-056
Element Name:	Wearing surface	**Width:**	4.5 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	6 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	54 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 48 **Fair:** 4 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Wide transverse crack.

Element Inspection

Element Group:	Approaches	**Site Number:**	N-056
Element Name:	Approach slabs	**Width:**	4.5 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	6 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	54 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 53 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	N-056	
Element Name:	Wearing surface	**Width:**	4.5	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	22.6	m
Material:	Asphalt	**Count:**	0	
Location:		**Total Quantity:**	102	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 56 **Fair:** 36 **Poor:** 10

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to wide transverse cracks throughout. Moderate to severe potholes in areas where deck/soffit has failed, SW corner is the worst of it.

Element Inspection

Element Group:	Approaches	**Site Number:**	N-056
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam with steel posts	**Height:**	0 m
Sub-element:		**Length:**	6 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	24 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 24 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Accessories	**Site Number:**	N-056
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	N-056
Element Name:	Embankments	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Barriers	**Site Number:**	N-056
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam	**Height:**	0 m
Sub-element:		**Length:**	22.6 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	45 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 45 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-056
Element Name:	Verticals/diagonals	**Width:**	0.6 m
Element type:		**Height:**	0.065 m
Sub-element:		**Length:**	2 m
Material:	Steel	**Count:**	8
Location:	Truss verticals	**Total Quantity:**	16 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:	None	**Maintenance Type:**	Structural
Maint needs:	Structural steel repair	**Maint. Time Period:**	2 Year

Condition Data (m):

Exec: 0 **Good:** 14 **Fair:** 0 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe impact damage resulting in bent vertical.

Element Inspection

Element Group:	Joints	**Site Number:**	N-056
Element Name:	Seals (paved over)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-056
Element Name:	Bottom chord (steel)	**Width:**	0.2 m
Element type:		**Height:**	0.15 m
Sub-element:		**Length:**	22.6 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	45 m
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 45 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	N-056
Element Name:	Walls	**Width:**	5.2 m
Element type:		**Height:**	1.2 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	13 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 10 **Fair:** 2 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to severe spalling throughout.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-056
Element Name:	Stringers (steel)	**Width:**	0.2 m
Element type:	I Type	**Height:**	0.25 m
Sub-element:		**Length:**	22.6 m
Material:	Steel	**Count:**	6
Location:		**Total Quantity:**	149 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 149 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	N-056	
Element Name:	Soffit - thin slab	**Width:**	4.5	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	22.6	m
Material:	Timber	**Count:**	0	
Location:		**Total Quantity:**	102	sqm
Environment:	Benign	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 66 **Fair:** 24 **Poor:** 12

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate to severe rotting throughout. Severe rot SW quadrant resulting in deck/soffit failure (local).

Element Inspection

Element Group:	Decks	**Site Number:**	N-056	
Element Name:	Drainage system	**Width:**	0	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0	m
Material:	Steel	**Count:**	4	
Location:		**Total Quantity:**	4	each
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	N-056
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-056
Element Name:	Connections	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	16
Location:		**Total Quantity:**	16 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 16 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	N-056
Element Name:	Bearings (plate)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Foundations	**Site Number:**	N-056
Element Name:	Foundation (below ground level)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	N-056
Element Name:	Curbs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	22.6 m
Material:	Timber	**Count:**	2
Location:		**Total Quantity:**	45 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 42 **Fair:** 3 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor abrasions throughout.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-056
Element Name:	Top chords	**Width:**	0.35 m
Element type:		**Height:**	0.2 m
Sub-element:		**Length:**	24.6 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	49 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 49 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Minor impact damage.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-056
Element Name:	Verticals/diagonals	**Width:**	0.22 m
Element type:		**Height:**	0.1 m
Sub-element:		**Length:**	2.8 m
Material:	Steel	**Count:**	16
Location:	Truss diagonals	**Total Quantity:**	45 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 45 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	N-056
Element Name:	Wingwalls	**Width:**	0 m
Element type:		**Height:**	1.05 m
Sub-element:		**Length:**	3.6 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	15 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 15 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-056	
Element Name:	Floor beams (steel)	**Width:**	0.25	m
Element type:	I Type	**Height:**	0.5	m
Sub-element:		**Length:**	4.5	m
Material:	Steel	**Count:**	4	
Location:		**Total Quantity:**	32	sqm
Environment:	Benign	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 32 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Various missing bolts connecting floor beams to stringers, not critical.

OSIM Biennial Inspection Report

Site Number:

G-039

Concession 4, Lot 13, Baptist Church Road Bridge

West Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 4, Lot 13, Baptist Church Roa	**Site Number:**	G-039	
District:		**Road Name:**	Baptist Church Road	
County:	Grey County	**Owner:**	West Grey	
Township:	West Grey	**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	250	
Structure Type:	Pony Truss w/ Concrete Deck	**Overall Struct. Width:**	6	m
Number of Spans:	1	**Roadway Width:**	5.21	m
Direction of Structure:	North-South	**Total Deck Length:**	29.3	m
GPS Coordinates (Degrees)		**Span (s):**	28.7	m
General **Latitude:**	44.224606	**Total Deck Area:**	176	sq.m
Longitude:	-80.725591	**Current Load Limit:**	0	

Inspection Data

Date of Inspection:	12-Jun-24
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Cloudy
Temperature:	21
Special Notes:	Bridge is in good condition, showing no signs of strutural distress.

Overall Inspection Summary

BCI: 74

Next Inspection: 12-Jun-26

Additional Investigation Required: **Priority:**

Additional Investigation Cost:

Rehabilitation Needs:

Rehabilitation Timing:

Total Rehabilitation Budget Costings: **Engineering Fee:**

Historical Data

Year Built:		**Contract Number When Built:**	
Latest Biennial Inspection:	March 24, 2023	**Latest Specialized Inspection:**	
Latest Structure Rating:	75	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Approach Wearing surface: Light to medium map cracking throughout.

Description: Approach Wearing surface: Medium to wide alligator cracking at joints.

Description: Hand railings: Minor impact damage throughout.

Description: Railing systems: Areas of severe rot.

Description: Stringers: Moderate corrosion at ends.

Description: Deck top: Shallow popouts throughout.

Description: Floor beams: Moderate corrosion at ends.

Description: Bottom chord: East

Description: Top chord: East

Description: Top chord: Areas of impact damage.

Description: Connections: Moderate to severe corrosion at ends with areas of perforation.

Description: Connections: Light warping on various connection plates (rust jacking).

Description: Connections: End connection to chord is showing signs of warping (rust jacking).

Description: Verticals/diagonals: Moderate impact damage.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-039
Element Name:	Ballast walls	**Width:**	6 m
Element type:		**Height:**	1.2 m
Sub-element:		**Length:**	0 m
Material:	Timber	**Count:**	2
Location:		**Total Quantity:**	14 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 14 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Joints	**Site Number:**	G-039
Element Name:	Armouring/retaining devices	**Width:**	5.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0.3 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	10 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 10 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	G-039
Element Name:	Abutment walls	**Width:**	6 m
Element type:		**Height:**	1.3 m
Sub-element:		**Length:**	0 m
Material:	Timber	**Count:**	2
Location:		**Total Quantity:**	16 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 16 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	G-039	
Element Name:	Wingwalls	**Width:**	0.2	m
Element type:		**Height:**	1.3	m
Sub-element:		**Length:**	1.5	m
Material:	Timber	**Count:**	4	
Location:		**Total Quantity:**	8	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 8 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	G-039
Element Name:	Wearing surface	**Width:**	5.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	6.1 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	64 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 58 **Fair:** 4 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium map cracking throughout. Medium to wide alligator cracking at joints.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-039
Element Name:	Hand railings	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	28.7 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	57 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 54 **Fair:** 3 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor impact damage throughout.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-039
Element Name:	Railing systems	**Width:**	0 m
Element type:	Flexi beam with timber posts	**Height:**	1.3 m
Sub-element:		**Length:**	44.8 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	89 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	Structural
Maint needs:	Barrier/railing system repair	**Maint. Time Period:**	1 Year

Condition Data (m):

Exec: 0 **Good:** 83 **Fair:** 4 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Areas of severe rot.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-039	
Element Name:	Stringers (steel)	**Width:**	0.12	m
Element type:		**Height:**	0.25	m
Sub-element:		**Length:**	5	m
Material:	Steel	**Count:**	42	
Location:		**Total Quantity:**	42	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 38 **Fair:** 4 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Moderate corrosion at ends.

Element Inspection

Element Group:	Decks	**Site Number:**	G-039
Element Name:	Soffit - thin slab	**Width:**	5.7 m
Element type:		**Height:**	0.4 m
Sub-element:		**Length:**	28.7 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	164 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 164 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-039
Element Name:	Deck top (with thin slab)	**Width:**	5.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	28.7 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	149 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 149 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Shallow popouts throughout.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-039
Element Name:	Embankments	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	G-039	
Element Name:	Floor beams (steel)	**Width:**	0.18	m
Element type:		**Height:**	0.57	m
Sub-element:		**Length:**	6	m
Material:	Steel	**Count:**	7	
Location:		**Total Quantity:**	71	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 67 **Fair:** 4 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Moderate corrosion at ends.

Element Inspection

Element Group:	Decks	**Site Number:**	G-039
Element Name:	Drainage system	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	8
Location:		**Total Quantity:**	8 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 8 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-039
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Foundations	**Site Number:**	G-039
Element Name:	Foundation (below ground level)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

No signs of settlement.

Element Inspection

Element Group:	Accessories (Attachments and Signs)	**Site Number:**	G-039
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	G-039
Element Name:	Curbs	**Width:**	0.23 m
Element type:		**Height:**	0.25 m
Sub-element:		**Length:**	28.7 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	28 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 28 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-039
Element Name:	Bottom chord (steel)	**Width:**	0.18 m
Element type:		**Height:**	0.13 m
Sub-element:		**Length:**	28.7 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	56 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 56 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium corrosion throughout.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-039
Element Name:	Top chords	**Width:**	0.14 m
Element type:		**Height:**	0.24 m
Sub-element:		**Length:**	24.7 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	51 m
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 49 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Areas of impact damage.

Element Inspection

Element Group:	Joints	**Site Number:**	G-039
Element Name:	Seals (open)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	5.2 m
Material:		**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-039
Element Name:	Connections	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	26
Location:		**Total Quantity:**	26 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 25 **Fair:** 0 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Moderate to severe corrosion at ends with areas of perforation. Light warping (rust jacking) on various connection plates. End connection to chord is showing signs of warping.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	G-039
Element Name:	Verticals/diagonals	**Width:**	0.24 m
Element type:		**Height:**	0.15 m
Sub-element:		**Length:**	2.95 m
Material:	Steel	**Count:**	20
Location:		**Total Quantity:**	74 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 72 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout. Moderate impact damage.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-039
Element Name:	Bearings (plate)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion throughout.

OSIM Biennial Inspection Report

Site Number:

G-031

Cencession 2 &3E, Lot 28 Bridge

West Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Cencession 2 &3E, Lot 28 Bridge	**Site Number:**	G-031	
District:		**Road Name:**	Concession 2	
County:	Grey County	**Owner:**	West Grey	
Township:	West Grey	**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	200	
Structure Type:	Concrete Rigid Frame	**Overall Struct. Width:**	9.55	m
Number of Spans:	1	**Roadway Width:**	8.44	m
Direction of Structure:	East-West	**Total Deck Length:**	13.7	m
GPS Coordinates (Degrees)		**Span (s):**	12.2	m
General — **Latitude:**	44.251682	**Total Deck Area:**	131	sq.m
Longitude:	-80.805467	**Current Load Limit:**	0	

Inspection Data

Date of Inspection:	12-Jun-24
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	25
Special Notes:	Bridge is in fair condition, showing no signs of structural distress.

Overall Inspection Summary

BCI: 72

Next Inspection: 12-Jun-26

Additional Investigation Required: **Priority:**

Additional Investigation Cost:

Rehabilitation Needs:

Rehabilitation Timing:

Total Rehabilitation Budget Costings: **Engineering Fee:**

Historical Data

Year Built:	1960	**Contract Number When Built:**	
Latest Biennial Inspection:	March 24, 2023	**Latest Specialized Inspection:**	
Latest Structure Rating:	72	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Wingwalls: Light to medium map cracking with leachate staining.

Description: Approach Curbs: Light to medium map cracking with leachate staining.

Description: Approach Wearing surface: Shallow potholes throughout.

Description: Railing systems: Localized shallow spall at SE corner.

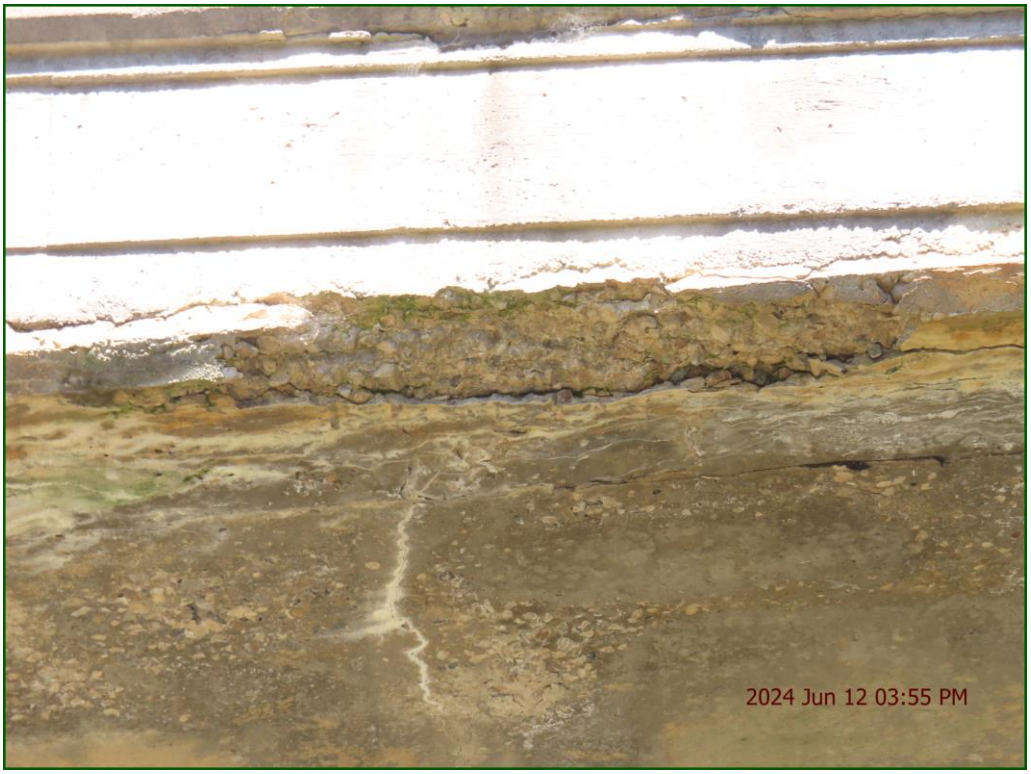
Description: Railing systems: Light to medium vertical cracking throughout.

Description: Railing systems: Shallow delamination throughout.

Description: Railing Systems: Severe impact damage on NW quadrant.

Description: Soffit (ext): Medium to wide map cracking with leachate staining and stalactite.

Description: Soffit (ext): Moderate spalls throughout and disintegration.



Description: Soffit (ext): Moderate to severe delamination.

Description: Soffit (int): Moderate delamination.

Description: Soffit (int): Light to moderate honeycombing.

Description: Soffit (int): Light to medium longitudinal cracking at construction joints.

Description: Soffit (int): Severe localized spall with exposed reinforcing at mid span.

Description: Wearing Surface: Light longitudinal crack at centre line.

Description: Curbs: Shallow delaminations with light map cracking throughout.

Description: Curbs: Medium longitudinal cracks throughout.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-031
Element Name:	Abutment walls	**Width:**	9.55 m
Element type:		**Height:**	5.75 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	110 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 110 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	G-031
Element Name:	Wingwalls	**Width:**	0 m
Element type:		**Height:**	4.12 m
Sub-element:		**Length:**	5.3 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	44 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 42 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium map cracking with leachate staining.

Element Inspection

Element Group:	Accessories (Attachments and Signs)	**Site Number:**	G-031
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	G-031
Element Name:	Approach slabs	**Width:**	8.44 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	6.1 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	103 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 101 **Fair:** 2 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	G-031
Element Name:	Curbs	**Width:**	0.6 m
Element type:		**Height:**	0.19 m
Sub-element:		**Length:**	5.3 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	17 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 16 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium map cracking with leachate staining.

Element Inspection

Element Group:	Approaches	**Site Number:**	G-031
Element Name:	Wearing surface	**Width:**	8.44 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	6.1 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	103 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 99 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Shallow potholes throughout.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-031
Element Name:	Railing systems	**Width:**	0.1 m
Element type:	Post and rail	**Height:**	0.91 m
Sub-element:		**Length:**	13.7 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	27 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 24 **Fair:** 3 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Localized shallow spall at SE corner. Light to medium vertical cracking throughout. Shallow delamination throughout.

Element Inspection

Element Group:	Barriers	**Site Number:**	G-031
Element Name:	Railing Systems	**Width:**	0 m
Element type:	Flexi beam with timber posts	**Height:**	0.8 m
Sub-element:		**Length:**	16 m
Material:	Steel	**Count:**	4
Location:	Approaches	**Total Quantity:**	64 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	Structural
Maint needs:	Barrier/railing system repair	**Maint. Time Period:**	1 Year

Condition Data (m):

Exec: 0 **Good:** 61 **Fair:** 0 **Poor:** 3

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe impact damage on NW quadrant.

Element Inspection

Element Group:	Decks	**Site Number:**	G-031
Element Name:	Deck top (with thick slab)	**Width:**	9.55 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	13.7 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	131 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 131 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-031
Element Name:	Drainage System	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-031	
Element Name:	Soffit - thick slab	**Width:**	1	m
Element type:		**Height:**	1	m
Sub-element:	Exterior	**Length:**	12.2	m
Material:	Cast-in-place Concrete	**Count:**	2	
Location:		**Total Quantity:**	49	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 20 **Fair:** 15 **Poor:** 14

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to wide map cracking with leachate staining and stalactite. Moderate spalls throughout and disintegration. Moderate to severe delamination.

Element Inspection

Element Group:	Decks	**Site Number:**	G-031	
Element Name:	Soffit - thick slab	**Width:**	7.55	m
Element type:		**Height:**	0	m
Sub-element:	Interior	**Length:**	12.2	m
Material:	Cast-in-place Concrete	**Count:**	1	
Location:		**Total Quantity:**	92	sqm
Environment:	Benign	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 88 **Fair:** 3 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate delamination. Light to moderate honeycombing. Light to medium longitudinal cracking at construction joints. Severe localized spall with exposed reinforcing at mid span.

Element Inspection

Element Group:	Decks	**Site Number:**	G-031
Element Name:	Wearing Surface	**Width:**	8.44 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	13.7 m
Material:	Asphalt	**Count:**	1
Location:		**Total Quantity:**	116 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 116 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light longitudinal crack at centre line.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-031	
Element Name:	Embankments	**Width:**	0	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0	m
Material:		**Count:**	4	
Location:		**Total Quantity:**	4	each
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-031
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Heavy flow at time of inspection.

Element Inspection

Element Group:	Foundations	**Site Number:**	G-031
Element Name:	Foundation (below ground level)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	12.2 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 2 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

No signs of settlements.

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	G-031
Element Name:	Curbs	**Width:**	0.6 m
Element type:		**Height:**	0.19 m
Sub-element:		**Length:**	13.7 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	22 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 18 **Fair:** 4 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Shallow delaminations with light map cracking throughout. Medium longitudinal cracks throughout.

OSIM Biennial Inspection Report

Site Number:

G-037

Concession 2 & 3, Lot 6

North Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 2 & 3, Lot 6	**Site Number:**	G-037	
District:		**Road Name:**	North Line	
County:	Grey County	**Owner:**	West Grey	
Township:	West Grey	**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	100	
Structure Type:	Concrete Rigid Frame	**Overall Struct. Width:**	8	m
Number of Spans:	1	**Roadway Width:**	6.92	m
Direction of Structure:	North-South	**Total Deck Length:**	9.75	m
GPS Coordinates (Degrees)		**Span (s):**	9.1	m
General **Latitude:**	44.207565	**Total Deck Area:**	78	sq.m
Longitude:	-80.758807	**Current Load Limit:**	0	

Inspection Data

Date of Inspection:	11-Jun-24
Name of Inspector:	A. Burgess P.Eng. & J. Ziegler CET
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Sunny
Temperature:	17
Special Notes:	Bridge is in an advanced state of deterioration. Recommend schedule for replacement or closure.

Overall Inspection Summary

BCI: 58

Next Inspection: 11-Jun-26

Additional Investigation Required:		**Priority:**	
Additional Investigation Cost:			
Rehabilitation Needs:	Replace		
Rehabilitation Timing:	1 to 5 years		
Total Rehabilitation Budget Costings:	$624,000.00	**Engineering Fee:**	$74,880

Historical Data

Year Built:		**Contract Number When Built:**	
Latest Biennial Inspection:	March 22, 2023	**Latest Specialized Inspection:**	
Latest Structure Rating:	59	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Abutment walls: Medium vertical cracks with leachate staining.

Description: Abutment walls: Moderate delamination at NE and SE quadrants.

Description: Wingwalls: Medium to wide map cracking with leachate staining.

Description: Wingwalls: Moderate spalling and disintegration.

Description: Approach curbs: Severe disintegration throughout.

Description: Railing systems: Severe disintegration throughout with localized areas of 100% section loss.

Description: Railing systems: Light to medium map cracking with leachate staining throughout.

Description: Railing systems: Severe spalling with exposed reinforcing throughout.

Description: Soffit (ext): Severe disintegration throughout.

Description: Soffit (ext): Medium to wide map cracking with leachate staining.

Description: Soffit (ext): Severe spalling and disintegration with exposed reinforcing.

Description: Soffit (int): Four medium transverse cracks along entire width.

Description: Soffit (int): Moderate to severe spalling with exposed reiforcing throughout.

Description: Wearing Surface: Moderate potholing throughout.

Description: Foundation: Severe detioration on east footing.

Description: Curbs: Light to medium map cracking throughout.

Description: Curbs: Severe disintegration throughout.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-037
Element Name:	Abutment walls	**Width:**	8 m
Element type:		**Height:**	1.7 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	27 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 21 **Fair:** 4 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium vertical cracks with leachate staining. Moderate delamination at NE and SE quadrants.

Element Inspection

Element Group:	Abutments	**Site Number:**	G-037
Element Name:	Wingwalls	**Width:**	0 m
Element type:		**Height:**	1.7 m
Sub-element:		**Length:**	1.87 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	6 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 4 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Medium to wide map cracking with leachate staining. Moderate spalling and disintegration.

Element Inspection

Element Group:	Accessories (Attachments and Signs)	**Site Number:**	G-037
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Approaches	**Site Number:**	G-037
Element Name:	Curbs	**Width:**	0.33 m
Element type:		**Height:**	0.2 m
Sub-element:		**Length:**	1.87 m
Material:	Cast-in-place Concrete	**Count:**	4
Location:		**Total Quantity:**	4 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 0 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe disintegration throughout.

Element Inspection

Element Group:	Approaches	**Site Number:**	G-037
Element Name:	Wearing surface	**Width:**	6.92 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	1.87 m
Material:	Gravel	**Count:**	2
Location:		**Total Quantity:**	26 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 26 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Barriers	**Site Number:**	G-037
Element Name:	Railing systems	**Width:**	0 m
Element type:	Post and rail	**Height:**	0.96 m
Sub-element:		**Length:**	9.75 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	20 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 4 **Fair:** 8 **Poor:** 8

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe disintegration throughout with localized areas of 100% section loss. Light to medium map cracking with leachate staining throughout. Severe spalling with exposed reinforcing throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	G-037
Element Name:	Deck top (with thick slab)	**Width:**	8 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	9.75 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	78 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 74 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	G-037
Element Name:	Soffit - thick slab	**Width:**	1 m
Element type:		**Height:**	0.75 m
Sub-element:	Exterior	**Length:**	9.1 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	32 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 12 **Poor:** 20

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe disintegration throughout. Medium to wide map cracking with leachate staining. Severe spalling and disintegration with exposed reinforcing.

Element Inspection

Element Group:	Decks	**Site Number:**	G-037
Element Name:	Soffit - thick slab	**Width:**	6 m
Element type:		**Height:**	0 m
Sub-element:	Interior	**Length:**	9.1 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	55 sqm
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 39 **Fair:** 12 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Four medium transverse cracks along entire width. Moderate to severe spalling with exposed reinforcing throughout.

Element Inspection

Element Group:	Decks	**Site Number:**	G-037
Element Name:	Wearing Surface	**Width:**	6.92 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	9.75 m
Material:	Gravel	**Count:**	1
Location:		**Total Quantity:**	67 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 63 **Fair:** 2 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate potholing throughout.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-037
Element Name:	Embankments	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Steep embankments recommend protection.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	G-037
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	1
Location:		**Total Quantity:**	1 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Stream dry at time of inspection.

Element Inspection

Element Group:	Foundations	**Site Number:**	G-037
Element Name:	Foundation (below ground level)	**Width:**	m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	8 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:		**Total Quantity:**	2 each
Environment:	Benign	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 1 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe detioration on east footing.

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	G-037
Element Name:	Curbs	**Width:**	0.33 m
Element type:		**Height:**	0.2 m
Sub-element:		**Length:**	9.75 m
Material:	Cast-in-place Concrete	**Count:**	2
Location:	On deck	**Total Quantity:**	10 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	Routine
Maint needs:	Bridge cleaning	**Maint. Time Period:**	1 Year

Condition Data (m):

Exec: 0 **Good:** 0 **Fair:** 5 **Poor:** 5

Rehab Needs:		**Unit Cost:**	
Rehab time period:		**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium map cracking throughout. Severe disintegration throughout. Limited inspection due to gravel build up.

Element Inspection

Element Group:	Bridge (overall)	**Site Number:**	G-037
Element Name:	All Elements	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Cast-in-place Concrete	**Count:**	1
Location:		**Total Quantity:**	1 sqm
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 1

Rehab Needs:	Replace with Bridge (concrete)	**Unit Cost:**	$8000 / sq.m
Rehab time period:	1 - 5 Years	**Estimated Cost:**	$624,000
Quantity:	78 sq.m		

General Comments:

Concrete rigid frame has advanced deterioration, recommend complete replacement.

OSIM Biennial Inspection Report

Site Number:

N-051

Concession 17 & 18, Lot 15 Bridge

South Elevation

Burgess Engineering Inc

27-Aug-24

Inventory Data

Structure Name:	Concession 17 & 18, Lot 15 Bridge	**Site Number:**	N-051	
District:	Municipality of West Grey	**Road Name:**	Concession 18	
County:		**Owner:**	Township	
Township:		**Skew:**	0	
Bridge or Culvert:	Bridge	**AADT:**	350	
Structure Type:	Pony Truss w/ Timber Deck	**Overall Struct. Width:**	6.2	m
Number of Spans:	1	**Roadway Width:**	5.2	m
Direction of Structure:	East-West	**Total Deck Length:**	20.6	m
GPS Coordinates (Degrees)		**Span (s):**	20	m
REVIEWED **Latitude:**	44.121901	**Total Deck Area:**	128	sq.m
Longitude:	-80.946415	**Current Load Limit:**	0	

Inspection Data

Date of Inspection:	30-Jul-24
Name of Inspector:	A. Burgess P.Eng.
Equipment Used:	Sounding hammer, measuring equipment, GPS
Weather Conditions:	Cloudy
Temperature:	23
Special Notes:	Bridge is in poor condition showing no signs of structural distress. Previous repairs have been completed. Bridge has been closed to traffic.

Overall Inspection Summary

BCI: 58

Next Inspection: 30-Jul-26

Additional Investigation Required:		**Priority:**	
Additional Investigation Cost:			
Rehabilitation Needs:	Replace		
Rehabilitation Timing:	1 to 5 years		
Total Rehabilitation Budget Costings:	$1,840,000.00	**Engineering Fee:**	$220,800

Historical Data

Year Built:	1930	**Contract Number When Built:**	
Latest Biennial Inspection:	April 6, 2022	**Latest Specialized Inspection:**	
Latest Structure Rating:	62	**Latest Structure Condition:**	
RehabHistory:			
Regional Priority Number:		**Programmed Work Year:**	
NatureOfProgramWork:			

Description: Bearings: Severe corrosion throughout.

Description: Wingwalls: Wide crack and seperation from abutment walls.

Description: Railing Systems: Localized areas of impact damage.

Description: Stringers: Light to medium corrosion in bottom flange areas and end connections (1/2).

Description: Stringers: Light to medium corrosion in bottom flange areas and end connections (2/2).

Description: Wearing Surface: Asphalt break up due to flexable deck system.

Description: Abutment Walls: Shallow to medium scaling throughout.

Description: Abutment Walls: Crack at construction joint, not critical.

Description: Abutment Walls: Possible crushing under south east bearing.

Description: Approach Wearing Surface: Narrow map cracking and raveling.

Description: Floor beams: Light to medium corrosion throughout.

Description: Floor Beams: Medium to severe corrosion in end floor beams.

Description: Soffit: Moderate to severe rotting throughout.

Description: Curbs: Localized severe abrasion and rot.

Description: Bottom Chord: Localized medium corrosion connections.

Description: Bottom Chord: Localized severe corrosion at bearing seats.

Description: Connections: Localized severe corrosion at outrigger and truss ends.

Element Inspection

Element Group:	Abutments	**Site Number:**	N-051
Element Name:	Bearings (plate)	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	4
Location:		**Total Quantity:**	4 each
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 0 **Fair:** 4 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Severe corrosion throughout. Likely seized, not critical.

Element Inspection

Element Group:	Abutments	**Site Number:**	N-051	
Element Name:	Wingwalls	**Width:**	0	m
Element type:		**Height:**	2	m
Sub-element:		**Length:**	2.4	m
Material:	Cast-in-place Concrete	**Count:**	4	
Location:		**Total Quantity:**	19	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 3 **Fair:** 8 **Poor:** 8

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Wide crack and seperation from abutment walls, monitor further movement.

Element Inspection

Element Group:	Barriers	**Site Number:**	N-051
Element Name:	Railing systems	**Width:**	0 m
Element type:		**Height:**	0.95 m
Sub-element:		**Length:**	3.8 m
Material:	Steel	**Count:**	16
Location:		**Total Quantity:**	61 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 49 **Fair:** 10 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Localized areas of impact damage.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-051	
Element Name:	Stringers (steel)	**Width:**	0.13	m
Element type:		**Height:**	0.3	m
Sub-element:		**Length:**	4.1	m
Material:	Steel	**Count:**	35	
Location:		**Total Quantity:**	142	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 122 **Fair:** 20 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium corrosion in bottom flange areas and end connections.

Element Inspection

Element Group:	Decks	**Site Number:**	N-051
Element Name:	Drainage system	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	6
Location:		**Total Quantity:**	6 each
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 6 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Decks	**Site Number:**	N-051
Element Name:	Wearing surface	**Width:**	5.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	20.6 m
Material:	Asphalt	**Count:**	0
Location:		**Total Quantity:**	107 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 0 **Fair:** 0 **Poor:** 107

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Asphalt break up due to flexable deck system. Not a structural issue.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	N-051
Element Name:	Streams and Waterways	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	0
Location:		**Total Quantity:**	1 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 1 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Accessories (Attachments and Signs)	**Site Number:**	N-051
Element Name:	Signs	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:	Steel	**Count:**	8
Location:		**Total Quantity:**	8 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 8 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Abutments	**Site Number:**	N-051	
Element Name:	Abutment walls	**Width:**	6.85	m
Element type:		**Height:**	2.2	m
Sub-element:		**Length:**	0	m
Material:	Cast-in-place Concrete	**Count:**	2	
Location:		**Total Quantity:**	30	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 19 **Fair:** 9 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Shallow to medium scaling throughout. Crack at construction joint, not critical. Possible crushing under south east bearing.

Element Inspection

Element Group:	Approaches	**Site Number:**	N-051
Element Name:	Wearing surface	**Width:**	5.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	5 m
Material:	Asphalt	**Count:**	2
Location:		**Total Quantity:**	52 sqm
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 38 **Fair:** 10 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Minor settlement. Wide cracking at deck joint region, covered by concrete barriers. Narrow map cracking and raveling.

Element Inspection

Element Group:	Beams/Main Longitudinal Elements	**Site Number:**	N-051	
Element Name:	Floor beams (steel)	**Width:**	0.2	m
Element type:		**Height:**	0.55	m
Sub-element:		**Length:**	5.57	m
Material:	Steel	**Count:**	6	
Location:		**Total Quantity:**	58	sqm
Environment:	Moderate	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 50 **Fair:** 6 **Poor:** 2

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light to medium corrosion throughout. Medium to severe corrosion in end floor beams.

Element Inspection

Element Group:	Coatings	**Site Number:**	N-051	
Element Name:	Structural steel (coating)	**Width:**	0	m
Element type:		**Height:**	0	m
Sub-element:		**Length:**	0	m
Material:		**Count:**	0	
Location:		**Total Quantity:**	140	sqm
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 60 **Fair:** 40 **Poor:** 40

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Areas of total coating breakdown, worse in deck system. Re-coating not recommended.

Element Inspection

Element Group:	Decks	**Site Number:**	N-051
Element Name:	Soffit - thin slab	**Width:**	5.57 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	20 m
Material:	Timber	**Count:**	0
Location:		**Total Quantity:**	111 sqm
Environment:	Moderate	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 0 **Good:** 36 **Fair:** 45 **Poor:** 30

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Moderate to severe rotting throughout.

Element Inspection

Element Group:	Embankments & Streams	**Site Number:**	N-051
Element Name:	Embankments	**Width:**	0 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	0 m
Material:		**Count:**	0
Location:		**Total Quantity:**	4 each
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (each):

Exec: 0 **Good:** 4 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Element Inspection

Element Group:	Sidewalks/ curbs	**Site Number:**	N-051
Element Name:	Curbs	**Width:**	0.16 m
Element type:		**Height:**	0.16 m
Sub-element:		**Length:**	20.6 m
Material:	Timber	**Count:**	2
Location:		**Total Quantity:**	13 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 5 **Fair:** 4 **Poor:** 4

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Localized severe abrasion and rot.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	N-051
Element Name:	Bottom chord (steel)	**Width:**	0.08 m
Element type:		**Height:**	0.13 m
Sub-element:		**Length:**	41 m
Material:	Steel	**Count:**	2
Location:		**Total Quantity:**	48 m
Environment:	Severe	**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 39 **Fair:** 8 **Poor:** 1

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Generally in good condition. Localized medium corrosion connections. Localized severe corrosion at bearing seats.

Element Inspection

Element Group:	Trusses/ Arches	**Site Number:**	N-051	
Element Name:	Top chords	**Width:**	0.06	m
Element type:		**Height:**	0.18	m
Sub-element:		**Length:**	16.9	m
Material:	Steel	**Count:**	2	
Location:		**Total Quantity:**	23	m
Environment:	Severe	**Not inspected:**	☐	

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (m):

Exec: 0 **Good:** 23 **Fair:** 0 **Poor:** 0

Rehab Needs:		**Unit Cost:**	
Rehab time period:	None Recommended	**Estimated Cost:**	
Quantity:	0		

General Comments:

Light corrosion. Top chords are in good alignment.

Element Inspection

Element Group:	Bridge (overall)	**Site Number:**	N-051
Element Name:	All Elements	**Width:**	6.2 m
Element type:		**Height:**	0 m
Sub-element:		**Length:**	20.6 m
Material:		**Count:**	1
Location:		**Total Quantity:**	128 sqm
Environment:		**Not inspected:**	☐

Perform. deficiencies:		**Maintenance Type:**	
Maint needs:		**Maint. Time Period:**	

Condition Data (sqm):

Exec: 128 **Good:** 0 **Fair:** 0 **Poor:** 0

Rehab Needs:	Replace with Bridge (large)	**Unit Cost:**	$8000 / sq.m
Rehab time period:	1 - 5 Years	**Estimated Cost:**	$1,840,000
Quantity:	230 sq.m		

General Comments: