City of Brampton

Geotechnical Desktop Review and Road Conditions Assessment

Extension of Intermodal Drive to Gorewood Drive
Brampton, ON, Canada

22 December 2025

Geotechnical Desktop Review and Road Conditions Assessment

Extension of Intermodal Drive to Gorewood Drive

Brampton, ON, Canada

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Our Ref:
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Date:
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Version Control

Issue	Revision No.	Date Issued	Page No.	Description	Reviewed By
Draft	1	21 June 2024	all	Draft Report	Sada Harunda, Troy Austrins
Draft	2	21 March 2025	V, 12	Inclusion of new design Alternative 4G	Sada Harunda, Troy Austrins
Draft	3	30 September 2025	All	Minor update to include new floodplain mapping	Ben Pascolo-Neveu
Final	4	22 December 2025		Final Report	Ben Pascolo-Neveu

Contents

Tables

Figures (at rear of report)

Appendices

Acronyms and Abbreviations

asl	Above Sea Level
Arcadis	Arcadis Canada Inc.
The City	The City of Brampton
CDV	Corrected Deduct Value
DV	Deduct Value
EIS	Environmental Impact Study
GD	Gorewood Drive
H	High severity (of distress)
ha	Hectares
ID	Intermodal Drive
L	Low severity (of distress)
m	Meters
M	Medium severity (of distress)
masl	Meters Above Sea Level
mbgs	Meters Below Ground Surface
MESP	Master Environmental Servicing Plan
mm	Millimetres
OGS	Ontario Geological Survey
PCI	Pavement Condition Index
PCS	Pavement Condition Survey
PAR	Private Access Road
SPT	Standard Penetration Test

1 Introduction

Arcadis Canada Inc. (Arcadis) was retained by the City of Brampton (the City) to conduct a Geotechnical Desktop Review and Road Conditions Assessment for planned road upgrades and design for the extension of Intermodal Drive to intersect with Gorewood Drive, located in Brampton, ON (referred to herein as the 'Site'). The task is part of a general Environmental Assessment and Detailed Design for the Extension being undertaken by Arcadis. The Site consists of a vacant lot located at 8188 Gorewood Drive (Lot 12 Plan 378), Brampton, ON, located at approximate GPS coordinates: 43°44'47.20"N, 79°39'9.09"W.

Intermodal Drive is an industrial collector road extending from Airport Road to a point approximately 160 metres west of Gorewood Drive (at easterly property limit of 835 Intermodal Drive). According to the TOR provided, the City's Airport Intermodal Secondary Plan Area 4 identifies a future extension of Intermodal Drive to Gorewood Drive, which would provide an alternate, shorter route for traffic to access Steeles Avenue from the east end of the employment area. This connection is seen as a goods movement network efficiency improvement. from 835 and 845 Intermodal Drive. The private access road is not for public use. The intent of the access is to provide a secondary point of access to the properties along Intermodal Drive (east of Goreway Drive) in the event that the current access point is blocked. Intermodal Drive is a 4-lane, 26-30 m ROW industrial collector road.

Also, the Region of Peel has an existing 300 mm PVC watermain on Intermodal Drive, approximately 150 m south of Gorewood Drive. Also, an existing 300 mm PVC watermain on Gorewood Drive, approximately 350 m north of Steeles Avenue. To improve redundancy and the robustness of Peel's distribution system, the Region of Peel's desire is to extend each end of these mains, connect the two and close the loop between the two mains.

The objective of the Geotechnical Desktop Review is to perform a preliminary evaluation to assess the general suitability of the Site for the intended road upgrades and development of the extension of Intermodal Drive to intersect with Gorewood Drive.

The following report has been prepared specifically and solely for the aforementioned project which is described herein. It contains our preliminary geotechnical evaluation and recommendations pertaining to the proposed development based on previous data available on the Site and the results of the PCS. We note that the recommendations provided in this report are intended solely for the preliminary planning of this redevelopment. The report cannot comment on factual surficial condition of the Site until further subsurface investigations are completed. More detailed geotechnical parameters and pavement design recommendations can be provided after such study.

This report does not address environmental concerns associated with the Site.

1.1 Site Description

Address #1:	8188 Gorewood Drive, Brampton, Ontario.
Location:	This lot is the second to last lot on Gorewood Drive adjacent to the prestige industrial lands to the west.
Latitude and Longitude:	43° 44' 47.20" N, 79° 39' 9.09" W.
Zoning:	Designated as Service Commercial as part of the Airport Intermodal Secondary Plan (Area 4).
Site Area:	13 m wide road extending 800 m southeast.
Address #2:	980 Intermodal Drive, Brampton, Ontario.
Location:	A building approximately at the location where the new extension join Intermodal Drive
Latitude and Longitude:	43° 44' 44.21" N, 79° 39' 17.21" W.
Zoning:	Designated as Service Commercial as part of the Airport Intermodal Secondary Plan (Area 4)
Study Area:	30 m wide road extending 400 m southwest.

1.2 Physical Setting

The Site, as shown in Figure 1, comprises sections of intermodal and Gorewood Drives roadways located in a semiurban neighbourhood zoned as Service Commercial. The area is relatively flat and generally level with surrounding grades having an approximate elevation of 157 m asl. It is situated to the southeast of Claireville Conservation Area. The properties adjacent to the two roadways are predominantly privately owned and under Industrial or Commercial Use

1.3 Local Geology and Hydrogeology

Available online topographic maps from the Ministry of Natural Resources and Forestry (MNRF, 2023) and Google Earth (Google Earth, 2023) indicates that the Site lies at an approximate elevation of 576 meters above sea level (m asl). The Site area is inferred to be relatively flat.

Ontario Geological Survey (OGS) surficial geology mapping indicates that the Site comprises of fine-textured glaciolacustrine deposits (OGS, 2010). These are expected to consist of fine-grained sediments of silt and clay, with minor sand and gravel.

Bedrock geology mapping for the Site indicates that the local bedrock is described as shale, limestone, dolostone, and siltstone; Georgian Bay Formation (OGS, 2011).

1.4 Proposed Development

The Environmental Assessment (EA) Study and detailed design is being carried out for the purpose of road extension joining (Easternly) Intermodal Drive to Gorewood Drive. Intermodal Drive is a 4-lane, 26 to 30 meter ROW industrial road while Gorewood Drive is a 2-lane collector road with rural cross-section (shoulder and ditch). It is

also understood that the Region of Peel plans to connect the existing 300 mm PVC watermain on Intermodal Drive with the 300 mm PVC watermain on Gorewood Drive in order to close the loop between them.

2 Scope of Work

The geotechnical desktop study is the first part of the preliminary geotechnical assessment of the site to understand the subsurface soil condition and provide recommendations for the proposed road extension work. The scope of work for this desktop review included:

- Background review of previous geotechnical and pavement design reports
- Development of health and safety plan for Pavement Condition Survey (PCS)
- Field visit for the completion of the PCS
- Analyses of field data
- Preparation of a geotechnical engineering review report.

3 Previous Geotechnical Studies

3.1 Report 1: Foundation Investigation Report, 8th Line (Gorewood Drive) Hwy. 407 EBL/WBL overpass, Toronto, ON (Ministry of Transportation of Ontario, 1991a)

The Ministry of Transportation of Ontario (MTO) completed a Foundation Investigation Report with the objective of reviewing structural foundations and subsurface soil and groundwater conditions for two planned single span bridge structure designs.

The details of the subsurface soils and groundwater investigation are summarized in the table below:

Table 3.1: Previous foundation investigation report carried out at Gorewood Drive surroundings (Source: MTO, 1991a).

Surveys and Tests	Details
Boreholes	10 boreholes (BH1 – BH10) Depth: 5.7 to 30.9 mbgs
Test pits	-
Monitoring Well installation	-
Geotechnical laboratory analysis	Yes

Water levels were monitored throughout the investigation in open boreholes. All boreholes were backfilled upon completion of the field investigation.

Subsurface soil conditions were identified for each borehole. The subsurface soil stratigraphy was determined to consist of a surficial layer of a heterogeneous mixture of clayey silt, sand, and gravel, inferred to be glacial till, which extended to a maximum depth of 8.4 meters below ground surface (mbgs). This was underlain by a layer clayey silt to silty clay, inferred to be glacial lacustrine, which extended to a maximum depth of 11.5 mbgs. This was followed

by another layer of glacial till, extending to a maximum depth of 28.2 mbgs. Finally, in some boreholes, a layer of sandy silt to silty sand with some clay and trace gravel, extending to a maximum depth of 28.2 mbgs.

Stabilized groundwater elevations were measured in each borehole and were determined to range from 1.5 to 4.5 mbgs (168.8 to 171.1 m asl).

The results of geotechnical laboratory analysis are summarized in the table below:

Table 3.2: Results of geotechnical laboratory analysis for Foundation Investigation Report, 8th Line (Gorewood Drive), Brampton, ON.

Analytical Parameter:	Range: (Glacial Till[1])	Range: (Glacial Lacustrine)	Range: (Glacial Till[2])	Range: (Sandy Silt)
Natural Moisture Content: (w)	8.5 - 24.5	16 - 29	9 - 29	8.5 - 8.0
Liquid Limit: (wL)	19 - 51	28 - 44	17 - 36	17
Plastic Limit: (wP)	12 - 18	14 - 20	11 - 18	13
Plastic Index: (IP)	8 - 33	13 - 25	6 - 18	5

3.2 Report 2: Foundation Investigation Report, Hwy. 407 (Goreway Drive to West Humber River), Toronto, ON (Ministry of Transportation of Ontario, 1991b)

The MTO completed a Foundation Investigation Report with the objective of reviewing structural foundations and subsurface soil and groundwater conditions to the east and west of two planned single span bridge structure designs.

The details of the subsurface soils and groundwater investigation are summarized in the table below:

Table 3.3: Previous foundation investigation report carried out at Gorewood Drive/West Humber River surroundings (Source: MTO, 1991b).

Surveys and Tests	Details
Boreholes	7 boreholes (BH1 – BH7) Depth: 13 to 15 mbgs
Test pits	-
Monitoring Well installation	-
Geotechnical laboratory analysis	Yes

Water levels were monitored throughout the investigation in open boreholes. All boreholes were backfilled upon completion of the field investigation.

Subsurface soil conditions were identified for each borehole. The subsurface soil stratigraphy was determined to consist of a surficial layer of a heterogeneous mixture of clayey silt, sand, and gravel, inferred to be glacial till, which extended to a maximum depth of 6.81 mbgs. This was underlain by a layer of clayey silt to silty clay, inferred to be glacial lacustrine, which was encountered down to the end of the boreholes. Random layers of interbedded sandy silt with trace clay were also encountered in certain boreholes with a maximum thickness of 1.5 m.

Stabilized groundwater elevations were measured in each borehole and were determined to range from 1 to 3.3 mbgs.

The results of geotechnical laboratory analysis are summarized in the table below:

Table 3.4: Results of geotechnical laboratory analysis for Foundation Investigation Report, Hwy. 407 (Gorewood Drive/West Humber River), Brampton, ON.

Analytical Parameter:	Range: (Glacial Till)	Range: (Glacial Lacustrine)
Natural Moisture Content: (w)	8.5 - 21.5	22.5 - 34.5
Liquid Limit: (wL)	21 - 43	15 - 42
Plastic Limit: (wP)	12 - 18	12 - 21
Plastic Index: (IP)	9 - 25	17 - 23

3.3 Report 3: Master Environmental Servicing Plan, Intermodal Drive extension area, Brampton, ON (Aquafor Beech Ltd., 2002)

Aquafor Beech Ltd. completed a Master Environmental Servicing Plan (MESP) with the objective of reviewing background information and existing conditions, as well as submitting proposed land use changes and impacts and a recommended Environmental Management Plan. The report identified various studies that are deemed required or otherwise for the Intermodal Dr extension project.

The summary of the plan's output is:

- Environmental inventories and constraint mapping was needed to identify various aquatic and terrestrial resources within the study area.
- Environmental Assessments (to address interaction of the project with other facilities) was considered not necessary.
- Servicing Studies (in two phases: Master Environmental Servicing Plan and A Stormwater Management Study) was proposed for the project.
- Environmental Impact Studies (EIS) was considered not necessary because there were no resources within the area designated for protection.

3.4 Report 4: East Mimico Creek Wetland Design Brief, Intermodal Drive extension area, Brampton, ON (Aquafor Beech Ltd., 2003)

Aquafor Beech Ltd. completed a Wetland Design Brief with the objective of reviewing and establishing physical, hydrologic and hydraulic targets for the constructed wetlands and to present a proposed design to meet those targets.

The summary of the report's outputs is:

- Wetland area was proposed adjacent to Intermodal Dr with draining extending to the easterly part of the road.
- Existing hydro access road was proposed to be reconstructed to prevent a significant head differential between the wetland cells. Existing 600 mm diameter culverts were recommended to be replaced with a larger 1.8 m wide and 0.9 m high box culvert. The access road was to be graded with a low point over the culvert to allow the road to become submerged under extreme runoff events.
- Accumulated sediment was proposed to periodically be removed.

3.5 Report 5: Subsurface Soil and Ground Water Investigation, Intermodal Drive (Airport Rd. to CN Rail), Brampton, ON (Terraprobe Inc., 2023)

Terraprobe Inc. completed a Subsurface and Ground Water Investigation with the objective of investigating the soil and groundwater conditions at the Site to aid with planned road widening activities at the Site. The project site encompassed multiple private properties located to the north and south of Intermodal Drive and Woodslea Road.

The details of the subsurface soil and groundwater investigation are summarized in the table below:

Table 3.5: Previous subsurface and groundwater investigation carried out at the Intermodal Drive surroundings (Source: Terraprobe Inc., 2023).

Surveys and Tests	Details
Boreholes	6 boreholes (BH101, BH103-BH107) Depth: 4.9 to 6.7 m
Test pits	1 test pit (TP102) Depth: 0.74 m
Monitoring Well installation	3 monitoring wells installed at selected borehole locations (BH103, BH106, and BH107).
Geotechnical laboratory analysis	No

Subsurface soil conditions were identified for each borehole. The surficial soil layer was determined to be varying in thickness from 100 to 175 millimeters (mm) across borehole locations. Earth fill material generally consisted of

sandy silt to silty sand, or clayey silt. Trace content of gravel, and trace organics were identified in the earth fill. Earth fill extended to a maximum depth of 1.5 mbgs. In-situ moisture contents of the earth fill samples ranged from 9 to 23 percent by mass, indicating a moist condition. The native soil layer generally consisted of sandy silt with some clay with trace gravel to clayey silt with trace sand and trace gravel. Bedrock was encountered in borehole BH103 at a depth of 6.1 mbgs.

Stabilized groundwater elevations were measured in each monitoring well and were determined to range from 0.9 to 3.29 mbgs (176.1 to 181.2 m asl). The direction of groundwater flow within the study area was estimated to flow towards the northeast in the western portion of the study area, and towards the southwest in the eastern portion of the study area.

4 Summary of Subsurface Conditions

4.1 Topsoil and Fill Materials

The borehole logs from the subsurface investigations across the easternly part of Intermodal Dr (MTO, 1991a, 1991b) do not the thickness and nature of the topsoil in the area. The 2023 investigation by Terraprobe of the western part of the road identified a layer of topsoil in the area varying in thickness from 100 to 175 mm. The topsoil is underlain by an earth fill material made up of silty sand with trace of clay and gravel, which extends up to 0.6 to 1.5 mbgs.

4.2 Native Soils

4.2.1 Clayey Silt, Sand and Gravel (Glacial Till)

Borehole logs from the study area (easternly part of Intermodal Dr) indicated a layer of heterogeneous mixture of clayey silt, sand and gravel (Glacial Till) throughout the area. Starting from the ground surface, the depth of this layer varies from 5.3 to 8.4 mbgs. The natural moisture content of the soil varies from 8.5 to 24.5%, which falls with the soils' liquid limits (19-51%) or plastic limits (12-18%). The consistency of the soil layer generally ranged from stiff to hard based on the Standard Penetration Test (SPT) blow counts. This soil type was encountered again at depths ranging from 16.8 to 28.2 mbgs.

4.2.2 Clayey Silt and Silty Clay

The Glacial till is underlain by a layer of clayey to silty clay soil deposit (Glacial Lacustrine) with a thickness ranging from 6.1 to 11.5 m. The natural moisture content of the soil varies from 16 to 29%, which falls with the soils' liquid limits (28-44%) or plastic limits (14-20%). The consistency of the soil layer generally ranged from firm to stiff based on the SPT blow counts. The cohesive soil has an undrained shear strength values ranging from 30 to 130 kPa with low sensitivity (1.3 to 3.2) based on in situ vane shear testing results.

4.2.3 Sandy Silt and Silty Sand

A layer of sandy silt to silty sand soil was encountered at depths of 22.8 to 28.2 mbgs. The density of the soil layer generally ranged from dense to very dense based on the SPT blow counts.

4.2.4 Bedrock

No bedrock was encountered within 30 mbgs within the study area around the easternly part of Intermodal Drive. However, the 2023 study of the westerly part of the road, which is further away from the study area, encountered weathered shale bedrock at one location at 6.1 mbgs.

4.3 Groundwater

The groundwater levels in the area, as based on the June 1990 measurements, vary from 1.5 m to 4.5 mbgs. The July 2023 groundwater levels ranged from 0.9 to 3.29 mbgs.

5 Pavement Condition Survey

Pavement Condition Survey (PCI) is a physical field study of an existing pavement structure to evaluate its structural and/or functional conditions. The structural condition of a pavement refers to its capacity to withstand both existing and anticipated traffic loads, while the functional condition relates to its capability to offer a secure, even, and noise-free surface for road users. ASTM standard D6433 is commonly used as a standard procedure for PCI that results in the determination of a Pavement Condition Index (PCI), a rating that is on a scale of 0 to 100 widely used by the U.S. Corps of Engineers, the Department of Defense, and various other agencies to quantify pavement conditions. For evaluation purposes, PCI distresses are categorized by pavement type (asphalt pavements and jointed concrete pavements) and rated by severity (low, medium, and high). Sections of roads being assessed are usually divided into multiple units of known area. The type and severity of various distresses in each unit are recorded and used in the computation of PCI as described in the ASTM standard. A manual field was completed by Arcadis field staff and the results of the assessment are presented in this section.

5.1 Field Survey

The PCS was completed by two Arcadis field personnel on April 25, 2024. A 300 m section of Intermodal Drive along the northeast-southwest direction and 100 m along the northwest-southeast direction were surveyed. Also, a 380 m section of Gorewood Drive ending at the Hwy 407 bridge was surveyed. The surveyed road sections are shown in Figure 2. Distress types and severity conditions were observed and recorded by the field staff in accordance with the ASTM 6433 standard. Photographs taken during the field visit are presented in Appendix A.

5.2 Pavement Condition Indices

5.2.1 Gorewood Drive

The collected field data used for the determination of the PCI from the 380 m section of Gorewood Dr surveyed is shown in Tables 1-1 to 1-19. The summary of the road condition is presented in Table 5.1 below. Two survey units were determined to be in “Fair” condition, one unit in “Very Poor” condition, while the remaining 16 units were either “Satisfactory” or in “Good” condition. The Gorewood Dr road section has an overall rating of “Satisfactory” with a PCI of 80.75.

Table 5.1: Summary of PCI for Gorewood Drive

Sample Unit	Area	PCI	Rating
GD 0-20 m	145	83.5	Satisfactory
GD 20-40 m	145	91.5	Good
GD 40-60 m	145	84	Satisfactory
GD 60-80 m	145	60	Fair
GD 80-100 m	145	92	Good
GD 100-120 m	145	91.8	Good
GD 120-140 m	145	79	Satisfactory
GD 140-160 m	145	84	Satisfactory
GD 160-180 m	145	80.5	Satisfactory
GD 180-200 m	145	56	Fair
GD 200-220 m	145	44	Very Poor
GD 220-240 m	145	81.5	Satisfactory
GD 240-260 m	145	84.5	Satisfactory
GD 260-280 m	145	88	Good
GD 280-300 m	145	79.5	Satisfactory
GD 300-320 m	230	87.5	Good
GD 320-340 m	230	81.3	Satisfactory
GD 340-360 m	230	85	Satisfactory
GD 360-380 m	230	89	Good
Total area	3095		
Overall PCI	80.75		
Overall Rating	Satisfactory		

5.2.1 Intermodal Drive

The collected field data used for the determination of the PCI from the 300 m section of the Intermodal Dr is shown in Tables 2-1 to 2-15. The summary of the road condition is presented in Table 5.2 below. Three of the surveyed units were determined to be in a “Poor” condition, while the remaining 12 units have a rating of “Fair” or better. The section of Intermodal Dr. surveyed has an overall rating of “Fair” with a PCI of 66.77.

Table 5.2: Summary of PCI for the Public Section of Intermodal Drive

Sample Unit	Area	PCI	Rating
ID 0-20 m	330	66	Fair
ID 20-40 m	330	64	Fair
ID 40-60 m	330	60	Fair
ID 60-80 m	330	87.5	Good
ID 80-100 m	276	79	Satisfactory
ID 100-120 m	276	54	Poor
ID 120-140 m	276	73	Satisfactory
ID 140-160 m	276	66	Fair
ID 160-180 m	276	76	Satisfactory
ID 180-200 m	276	56	Fair
ID 200-220 m	276	70	Fair
ID 220-240 m	276	72	Satisfactory
ID 240-260 m	276	50	Poor
ID 260-280 m	276	48	Poor
ID 280-300 m	276	78	Satisfactory
Total Area	4856		
Overall PCI	66.77		
Overall Rating	Fair		

5.2.1 Private Access Road Connecting Intermodal Drive to Gorewood Drive

Also, a 100 m section of the private access road connecting Intermodal Dr and Gorewood was also surveyed and the field data shown in Tables 3-1 to 3-5. The summary of the road condition is presented in Table 5.3 below. All of the surveyed units except one were determined to be in a “Very Poor” or “Poor” condition. The section of the private access road surveyed has an overall rating of “Poor” with a PCI of 54.40.

Table 5.3: Summary PCI for the Private Access Road Section

Sample Unit	Area	PCI	Rating
PAR 0-20 m	180	76	Satisfactory
PAR 20-40 m	180	54	Poor
PAR 40-60 m	180	40	Very Poor
PAR 60-80 m	180	50	Poor
PAR 80-100 m	180	52	Poor
Total Area	900		

Sample Unit	Area	PCI	Rating
Overall PCI		54.40	
Overall Rating		Poor	

6 Geotechnical Recommendations

6.1 Pavement Recommendations

It is important to mention that geotechnical recommendations for the construction of pavement structures can only be provided based on factual subsurface field data. Hence, Arcadis will provide specific recommendation values after completion of our intrusive soil investigation, which is to be conducted in the next several weeks.

The reviewed information indicates that the subsurface soil in the whole study area would be geotechnical suitable as a subgrade for pavement construction and widening provided that all topsoil and soil fill material (containing organic matter) is completely removed. With a shallow groundwater condition expected, temporary excavations for deeper sewer construction would require dewatering and measures to prevent cave ins.

6.2 Road Condition Status

The PCI rating of a road is a numerical index (a rating of 0 to 100) that indicates the condition of a road surface, which is typically used to evaluate the road's functionality as compared to its designed/intended use. A newly constructed road in perfect condition would have a PCI of 100 while a road in the worst possible condition would have a PCI of 0. Preventive measures shown in Figure 6.1 are recommended based on the PCI rating of a road. Roads with a rating of up to 60 are recommended continuous preventative maintenance while roads with a rating between 40 to 60 should undergo a measure repair that could range from overlays to reconstruction. For roads with PCI below 40, the only viable option is reconstruction.

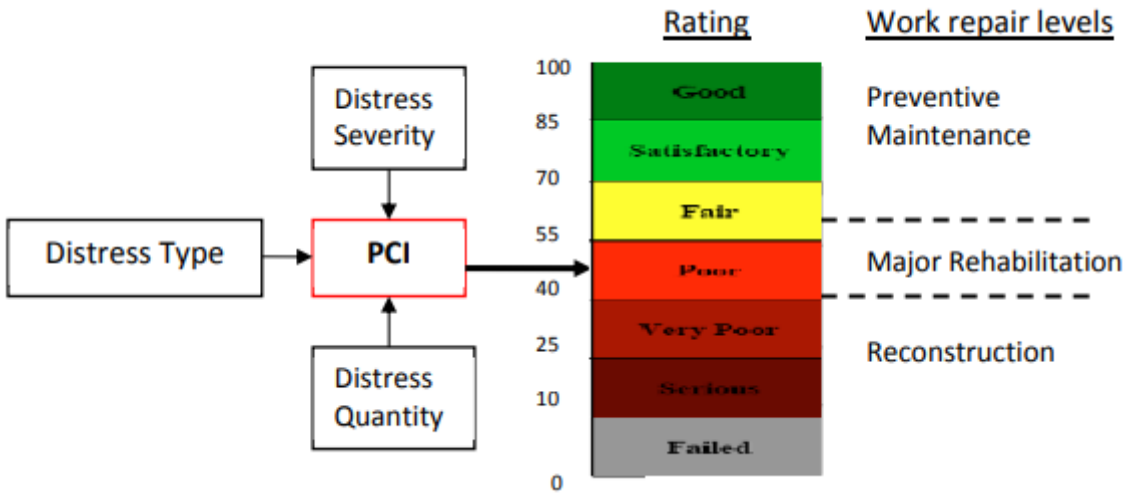


Figure 6.1. Recommended Work Repair for a Road Based on the PCI Rating

Gorewood Dr has a PCI of 80.75 which indicates a "Satisfactory" surface condition, approaching "Good" status. In its current condition, it only requires regular preventive maintenance where distressed conditions are observed.

Observed cracks and potholes within the units with low rating shall be sealed or patched as soon as feasible to ensure that the distresses do not cause major degradation of the road surface.

Intermodal Dr has a PCI of 66.77 which indicates a “Fair” surface condition. In its current condition, it also doesn’t require major rehabilitation, but the condition may worsen if preventive measures are not taken immediately. The low rating is largely caused by the occurrence of potholes and block cracks, which weigh heavily in the calculations of the PCI.

6.3 Preferred Design Alternative

As revealed by the PCS results, the end of Intermodal Drive near the proposed extension consists of units that are mostly in poor or very poor condition. As such, it is recommended that the east section of the Intermodal Drive be reconstructed for any of the design alternative chosen. The pavement condition of Gorewood Drive is satisfactory, therefore, the whole length, or portion of it, could be maintained for the final road alignment, as needed.

The subsurface soil conditions are more or less uniform across the project area. The geotechnical suitability of the foundation soil is comparatively similar for the design alternatives 4A, 4B, 4D, 4F or 4G (**Figure 3**). It is important to note that any topsoil or fill material containing organic matter must be removed before laying a new pavement structure on the ground. Thus, the amount of non-reusable excavated soil would be highest for design alternative 4F, and least for design alternative 4A.

7 Closure

The field work and reporting for this investigation was carried out by Mr. Sada Haruna, PhD, MSc., B.Eng. and Mr. Eliott Holden, P.Eng., working under the direction and final review of Mr. Troy Austrins, P.Eng., PMP.

We trust that the contents of this report are sufficient for your present purposes. If you have any questions, please call.

Respectfully submitted,

Arcadis Canada Inc.

Sada Haruna Ph.D.

Project Engineer

Troy Austrins, P.Eng., PMP

Geotechnical Team Lead

8 Statements of Limitations

This report, prepared for City of Brampton, does not provide certification or warranty, expressed or implied, that the investigation conducted by Arcadis uncovered all potential geotechnical constraints at the site. The conclusions and recommendations presented in this geotechnical investigation report are based on the information determined at the borehole locations. The information contained within this report in no way reflects the environmental aspect of the site or soil, unless specifically reported upon. Subsurface and groundwater conditions between and beyond the test locations may differ from those encountered at the specific locations tested, and conditions may be encountered during construction which were not detected and could not be anticipated at the time of the site investigation. It is recommended that Arcadis be retained during construction to confirm that the subsurface conditions throughout the subject property do not differ materially from those conditions encountered at the test locations. The benchmark and ground surface elevations in this report were used to establish relative elevation differences between the test locations and should not be used for other purposes, such as grading, excavating, planning, development, etc. The design recommendations provided in this report are applicable only to the project described in the text and then only if constructed substantially in accordance with the details stated in this report. Since all details of the design may not have been available at the time this report was prepared, it is recommended that a qualified engineering consultant be retained during future stages of the design process to verify that the design is consistent with the recommendations of this report, and that the assumptions made in the analyses contained in this report are still valid. The need for additional subsurface investigation work and laboratory testing should be reviewed by the retained qualified engineering consultant in course of the detailed design work. The comments given in this report on potential construction problems and possible methods of construction are intended only for the guidance of the designer. The number of boreholes/ groundwater wells may not be sufficient to determine all of the factors that may affect construction methods and costs (e.g., the thickness of surficial topsoil and fill layers can vary markedly and unpredictably). Contractors bidding on the project or undertaking the construction should, therefore, make their own interpretations of the information in this report and draw their own conclusions as to how the subsurface conditions may affect their bid or work. Furthermore, this report was prepared by Arcadis for City of Brampton. The material in it reflects the best judgement of Arcadis based on the information available at the time of preparation, June 2024. Changes to soil and/or groundwater quality in the areas investigated can occur following the date of testing. Any use which a third party makes of the report, or reliance on, or decisions to be based on it, is the responsibility of such third parties. Arcadis accepts no liability, whether in negligence, contract or arising on any other basis for damages or from indemnification arising from decisions or actions by others based on this report. Please note that the recommendations provided in this report are intended solely for the preliminary planning of this development. Further geotechnical investigation will be required before detailed geotechnical parameters can be established.

9 References

Aquafor Beech Ltd. (2003). East Mimico Creek Wetland Design Brief, Intermodal Drive extension area, Brampton, ON

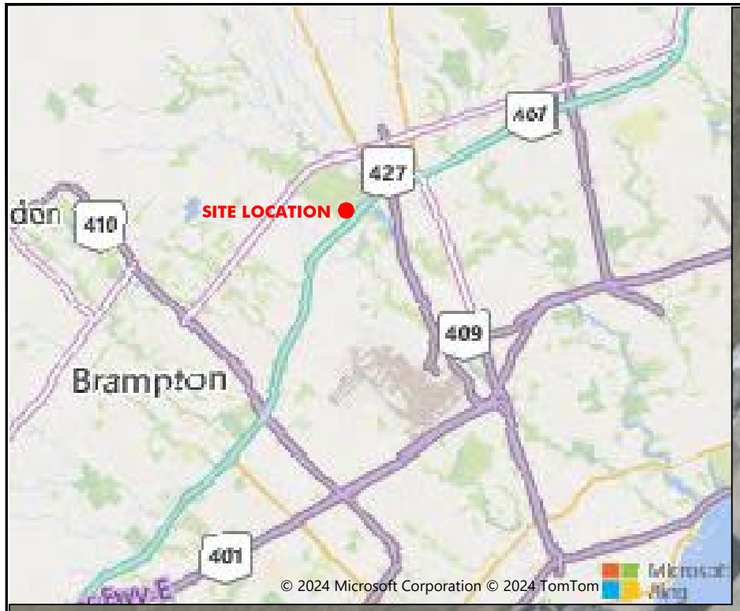
Aquafor Beech Ltd. (2002). Master Environmental Servicing Plan, Intermodal Drive extension area, Brampton, ON

Ministry of Transportation of Ontario (1991a). Foundation Investigation Report, 8th Line (Gorewood Drive) Hwy. 407 EBL/WBL overpass, Toronto, ON

Ministry of Transportation of Ontario (1991b). Foundation Investigation Report, Hwy. 407 (Gorewood Drive to West Humber River), Toronto, ON

Terraprobe Inc. (2023). Subsurface Soil and Ground Water Investigation, Intermodal Drive (Airport Rd. to CN Rail), Brampton, ON

Figures



LEGEND

SITE BOUNDARY

Metres
50 0 50 100
1:3500

Title:
SITE PLAN

Project:
EXTENSION OF INTERMODAL DRIVE TO GOREWOOD DRIVE BRAMPTON, ONTARIO

Client:
CITY OF BRAMPTON

ARCADIS

Date:
June 2024

FIGURE 1

last saved 14-Jun-24 by dlogan

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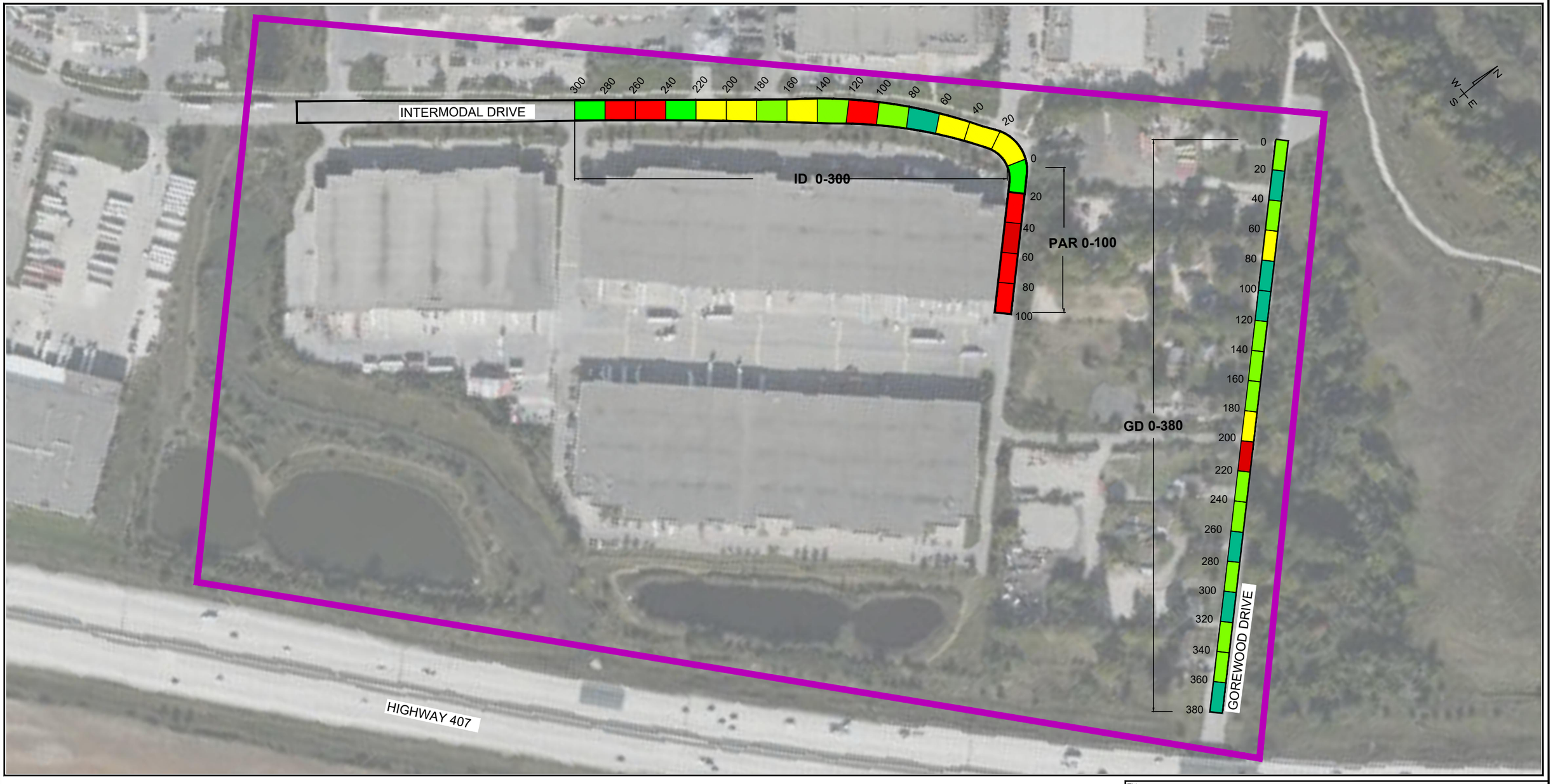

LEGEND

- SITE BOUNDARY
- STUDY AREA

- GOOD
- SATISFACTORY
- FAIR
- POOR
- VERY POOR
- SERIOUS
- FAIL

Title: **SECTIONS OF INTERMODAL DR AND GOREWOOD DR INVESTIGATED DURING THE PAVEMENT CONDITION SURVEY**

ARCADIS

Project: **EXTENSION OF INTERMODAL DRIVE TO GOREWOOD DRIVE BRAMPTON, ONTARIO**

Date: June 2024

Client: **CITY OF BRAMPTON**

40 0 Metres 40 80

1:2500

FIGURE 2

last saved 20-Jun-24 by dlogan

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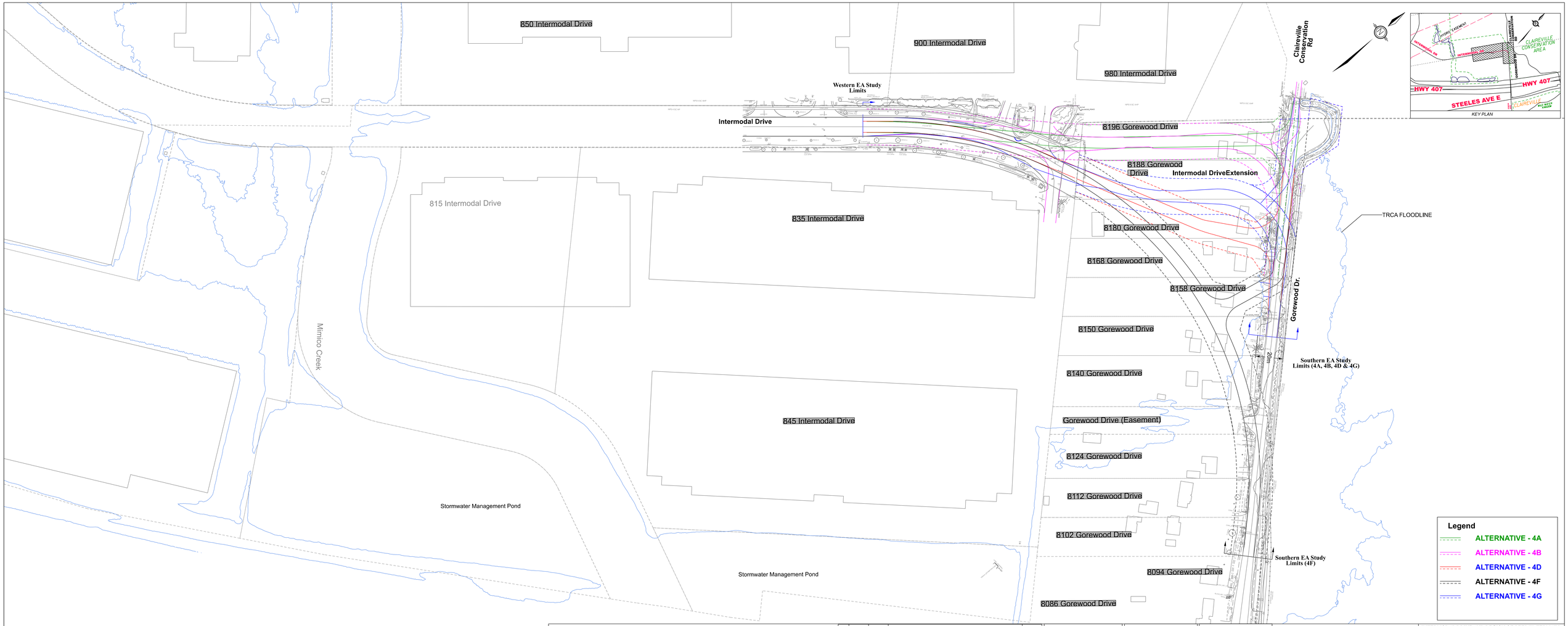

INTERMODAL DRIVE AND WATERMAIN EXTENSION TO GOREWOOD DRIVE

FLOODPLAIN MAPPING OVERLAY

NO.	BY	DATE	REVISIONS	CHECKED

ENGINEERS STAMPS

BRAMPTON Hower City
Public Works & Engineering
Capital Works

ARCADIS
333 Preston Street - Suite 400
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

FLOODPLAIN ROLLPLAN

INTERMODAL DRIVE AND REGION OF PEEL WATERMAIN EXTENSION TO GOREWOOD DRIVE
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

ALTERNATIVE ALIGNMENT 4A, 4B, 4D, 4F, & 4G

SCALE: 1:1000

FILE NO. 145608
DRAWING NO. xx-S-xx
SHEET NO. 01

Tables

1. Alligator Cracking	6. Depression	11. Patching & Util Cut Patching	16. Shoving
2. Bleeding	7. Edge Cracking	12. Polished Aggregate	17. Slippage Cracking
3. Block Cracking	8. Jt. Reflection Cracking	13. Potholes	18. Swell
4. Bumps and Sags	9. Lane/Shoulder Drop Off	14. Railroad Crossing	19. Weathering/Raveling
5. Corrugation	10. Long & Trans Cracking	15. Rutting	

Table 1-1: Observed Distress Types and Ratings for GD 0-20 m Unit

Segment GD 0-20 m MAX CDV = 16.5 **PCI =** **83.5**

Segment Area 145 m2 **Rating** **Satisfactory**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
9H	0.125						0.125	0.09	6
9L	4.875	4.875					9.75	6.72	4
10L	1.8125						1.8125	1.25	3
8L	1.65	2.75	3				7.4	5.10	9
3L	5						5	3.45	4

Table 1-2: Observed Distress Types and Ratings for GD 20-40 m Unit

Segment GD 20-40 m MAX CDV = 8.5 **PCI =** **91.5**

Segment Area 145 m2 **Rating** **Good**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
9L	20						20	13.79	6
3L	3	6					9	2.73	2.5
10L	4	1	1				6	1.82	0

Table 1-3: Observed Distress Types and Ratings for GD 40-60 m Unit

Segment GD 40-60 m MAX CDV = 16 **PCI =** **84**

Segment Area 145 m2 **Rating** **Satisfactory**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
9L	3	1					4	2.76	2
19L	5						5	3.45	4
13M	0.375	0.75					1.125	0.78	8
10L	1	0.5	0.5				2	1.38	0

Table 1-4: Observed Distress Types and Ratings for GD 60-80 m Unit

Segment GD 60-80 m MAX CDV = 40 **PCI =** **60**
Segment Area 145 m2 **Rating** **Fair**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
13M	2.6	6					8.6	5.93	32
8L	13.25	1.75					15	10.34	15
9L	10						10	6.90	2.5
10L	1	0.5					1.5	1.03	0
19L	20						20	13.79	6

Table 1-5: Observed Distress Types and Ratings for GD 80-100 m Unit

Segment GD 80-100 m MAX CDV = 8 **PCI =** **92**
Segment Area 145 m2 **Rating** **Good**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20	7.25					27.25	18.79	8
10L	1.5	0.5	0.5				2.5	1.72	0.5

Table 1-6: Observed Distress Types and Ratings for GD 100-120 m Unit

Segment GD 100-120 m MAX CDV = 8.2 **PCI =** **91.8**
Segment Area 145 m2 **Rating** **Good**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
9L	4						4	2.76	2.2

Table 1-7: Observed Distress Types and Ratings for GD 120-140 m Unit

Segment GD 120-140 m MAX CDV = 21 **PCI =** **79**
Segment Area 145 m2 **Rating** **Satisfactory**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
9L	5.5						5.5	3.79	2
19L	20						20	13.79	6
6L	14.3						14.3	9.86	17
10L	0.5	0.5					1	0.69	0

Table 1-8: Observed Distress Types and Ratings for GD 140-160 m Unit

Segment GD 140-160 m MAX CDV = 16 **PCI =** **84**
Segment Area 145 m2 **Rating** **Satisfactory**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
6L	6	7					13	8.97	17

Table 1-9: Observed Distress Types and Ratings for GD 160-180 m Unit

Segment GD 160-180 m MAX CDV = 19.5 **PCI =** **80.5**
Segment Area 145 m2 **Rating** **Satisfactory**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
9H	10	3					13	8.97	14
6L	9						9	6.21	12

Table 1-10: Observed Distress Types and Ratings for GD 180-200 m Unit

Segment GD 180-200 m MAX CDV = 40 **PCI =** **60**
Segment Area 145 m2 **Rating** **Fair**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	5						5	3.45	6
13M	2						2	1.38	37
9L	2						2	1.38	2
5L	14						14	9.66	13
18M	3						3	2.07	18

Table 1-11: Observed Distress Types and Ratings for GD 200-220 m Unit

Segment GD 200-220 m MAX CDV = 56 **PCI =** **44**
Segment Area 145 m2 **Rating** **Poor**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
13M	1	2	0.25				3.25	2.24	55
3L	21	18					39	26.90	13.5
10H	3.5						3.5	2.41	13
9M	13.5						13.5	9.31	7

Table 1-12: Observed Distress Types and Ratings for GD 220-240 m Unit

Segment GD 220-240 m MAX CDV = 18.5 **PCI =** **81.5**
Segment Area 145 m2 **Rating** **Satisfactory**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
7L	3						3	2.07	2.5
10L	1						1	0.69	0
6L	7.25						7.25	5.00	10

Table 1-13: Observed Distress Types and Ratings for GD 240-260 m Unit

Segment	GD 240-260 m		MAX CDV =	15.5	**PCI =** **84.5**
Segment Area	145 m2				**Rating** **Satisfactory**
Date	25-Apr-24	**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
9M	7						7	4.83	5
9L	13						13	8.97	4.5

Table 1-14: Observed Distress Types and Ratings for GD 260-280 m Unit

Segment	GD 260-280 m		MAX CDV =	12	**PCI =** **88**
Segment Area	145 m2				**Rating** **Good**
Date	25-Apr-24	**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
9L	20						20	13.79	6

Table 1-15: Observed Distress Types and Ratings for GD 280-300 m Unit

Segment	GD 280-300 m		MAX CDV =	20.5	**PCI =** **79.5**
Segment Area	145 m2				**Rating** **Satisfactory**
Date	25-Apr-24	**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	13.79	6
9L	20						20	13.79	6
10L	2	3					5	3.45	3
7L	4						4	2.76	5.5

Table 1-16: Observed Distress Types and Ratings for GD 300-320 m Unit

Segment GD 300-320 m MAX CDV = 12.5 **PCI =** **87.5**

Segment Area 230 m2 **Rating** **Good**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	8.70	4
9L	20						20	8.70	5
10L	11.5						11.5	5.00	3.5

Table 1-17: Observed Distress Types and Ratings for GD 320-340 m Unit

Segment GD 320-340 m MAX CDV = 18.7 **PCI =** **81.3**

Segment Area 230 m2 **Rating** **Satisfactory**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
9H	12.5						12.5	5.43	8.2
19L	20						20	8.70	4
9M	5.2						5.2	2.26	4.5
10L	11.5						11.5	5.00	3.5

Table 1-18: Observed Distress Types and Ratings for GD 340-360 m Unit

Segment GD 340-360 m MAX CDV = 15 **PCI =** **85**

Segment Area 230 m2 **Rating** **Satisfactory**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	8.70	4
9M	3.2						3.2	1.39	4
9L	3.75						3.75	1.63	2
10L	10.2						10.2	4.43	3
7L	3						3	1.30	2

Table 1-19: Observed Distress Types and Ratings for GD 360-380 m Unit

Segment GD 360-380 m MAX CDV = 11 **PCI =** **89**

Segment Area 230 m2 **Rating** **Good**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	8.70	4
10L	10.5	8					18.5	8.04	7

1. Alligator Cracking	6. Depression	11. Patching & Util Cut Patching	16. Shoving
2. Bleeding	7. Edge Cracking	12. Polished Aggregate	17. Slippage Cracking
3. Block Cracking	8. Jt. Reflection Cracking	13. Potholes	18. Swell
4. Bumps and Sags	9. Lane/Shoulder Drop Off	14. Railroad Crossing	19. Weathering/Raveling
5. Corrugation	10. Long & Trans Cracking	15. Rutting	

Table 2-1: Observed Distress Types and Ratings for ID 0-20 m Unit

Segment ID 0-20 m MAX CDV = 34 **PCI =** **66**

Segment Area 330 m2 **Rating** **Fair**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
13L	0.25						0.25	0.08	2
11L	4						4	1.21	3.5
10L	1.5	1	6.5	7.25	5.25		21.5	6.52	5
3L	0.75	9.15					9.9	3.00	4
6M	1						1	0.30	8
10M	4						4	1.21	4
18M	10						10	3.03	22

Table 2-2: Observed Distress Types and Ratings for ID 20-40 m Unit

Segment ID 20-40 m MAX CDV = 36 **PCI =** **64**

Segment Area 330 m2 **Rating** **Fair**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
18M	2.125						2.125	0.64	0
10M	4.375						4.375	1.33	4
1M	4.375	16.5	12.75	7.25	5.25		46.125	13.98	36
10L	1.5	5					6.5	1.97	1

Table 2-3: Observed Distress Types and Ratings for ID 40-60 m Unit

Segment ID 40-60 m MAX CDV = 40 **PCI =** **60**

Segment Area 330 m2 **Rating** **Fair**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
8H	8.5	32					40.5	12.27	36
10L	16.5						16.5	5.00	4.5
3L	4	7.5					11.5	3.48	4

Table 2-4: Observed Distress Types and Ratings for ID 60-80 m Unit

Segment ID 60-80 m MAX CDV = 12.5 **PCI =** **87.5**

Segment Area 330 m2 **Rating** **Good**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
10L	8.25	6					14.25	4.32	4
8L	1.5625	1.75					3.3125	1.00	2
3L	2.5						2.5	0.76	2
1L	2						2	0.61	6.5

Table 2-5: Observed Distress Types and Ratings for ID 80-100 m Unit

Segment ID 80-100 m MAX CDV = 21 **PCI =** **79**

Segment Area 276 m2 **Rating** **Satisfactory**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
8L	9.75	7.25					17	6.16	10
10L	2	6.25	5.25				13.5	4.89	4
1H	2						2	0.72	8
3L	67.5						67.5	24.46	14.5

Table 2-6: Observed Distress Types and Ratings for ID 100-120 m Unit

Segment ID 100-120 m MAX CDV = 46 **PCI =** **54**

Segment Area 276 m2 **Rating** **Poor**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
13L	0.5						0.5	0.18	4
8L	1.5	7.5	10.5	2			21.5	7.79	10
1H	7.5						7.5	2.72	42
3H	10						10	3.62	14

Table 2-7: Observed Distress Types and Ratings for ID 120-140 m Unit

Segment ID 120-140 m MAX CDV = 27 **PCI =** **73**
Segment Area 276 m2 **Rating** **Satisfactory**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
1M	4.5						4.5	1.63	25
8L	4.5	4.625	9.2	2			20.325	7.36	12

Table 2-8: Observed Distress Types and Ratings for ID 140-160 m Unit

Segment ID 140-160 m MAX CDV = 34 **PCI =** **66**
Segment Area 276 m2 **Rating** **Fair**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
1H	3						3	1.09	30
10L	20.7	3					23.7	8.59	6.5
8L	1.875	4.5	3.4375				9.8125	3.56	6.5

Table 2-9: Observed Distress Types and Ratings for ID 160-180 m Unit

Segment ID 160-180 m MAX CDV = 24 **PCI =** **76**
Segment Area 276 m2 **Rating** **Satisfactory**
Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
3L	6						6	2.17	2.5
10M	13.8						13.8	5.00	10
8L	10	3					13	4.71	8
19L	20						20	7.25	3.5

Table 2-10: Observed Distress Types and Ratings for ID 180-200 m Unit

Segment ID 180-200 m MAX CDV = 44 **PCI =** **56**

Segment Area 276 m2 **Rating** **Fair**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
8L	20*0.25	15					15	5.43	8
1H	8						8	2.90	40
3M	4.5	3					7.5	2.72	5.5
10L	3.5	1.5					5	1.81	0

Table 2-11: Observed Distress Types and Ratings for ID 200-220 m Unit

Segment ID 200-220 m MAX CDV = 30 **PCI =** **70**

Segment Area 276 m2 **Rating** **Fair**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
3M	20						20	7.25	14
10M	6.9						6.9	2.50	6.5
8M	6.5	1.125	1.85	3.125			12.6	4.57	24
19L	0.25	25					25.25	9.15	4.5
3L	0.5						0.5	0.18	0

Table 2-12: Observed Distress Types and Ratings for ID 220-240 m Unit

Segment ID 220-240 m MAX CDV = 28 **PCI =** **72**

Segment Area 276 m2 **Rating** **Satisfactory**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
8M	3	10					13	4.71	22
10L	2.5						2.5	0.91	2
3L	6						6	2.17	2.5
3M	20						20	7.25	6
7L	1.25						1.25	0.45	1

Table 2-13: Observed Distress Types and Ratings for ID 240-260 m Unit

Segment	ID 240-260 m		MAX CDV =	50	**PCI =** **50**
Segment Area	276 m2				**Rating** **Poor**
Date	25-Apr-24	**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
19L	20						20	7.25	4
3L	18						18	6.52	5
1H	4						4	1.45	32
3M	20						20	7.25	14
1L	8	0.75					8.75	3.17	22
10M	6.4						6.4	2.32	5
8M	10						10	3.62	18
8L	2						2	0.72	2

Table 2-14: Observed Distress Types and Ratings for ID 260-280 m Unit

Segment	ID 260-280 m		MAX CDV =	52	**PCI =** **48**
Segment Area	276 m2				**Rating** **Poor**
Date	25-Apr-24	**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
8M	0.25						0.25	0.09	0
8L	5						5	1.81	4.5
3L	24	15					39	14.13	10
1M	24	15					39	14.13	50

Table 2-15: Observed Distress Types and Ratings for ID 280-300 m Unit

Segment	ID 280-300 m		MAX CDV =	22	**PCI =** **78**
Segment Area	276 m2				**Rating** **Satisfactory**
Date	25-Apr-24	**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
10L	41.4						41.4	15.00	10
3L	9						9	3.26	4
7L	1.25						1.25	0.45	4
8L	4.5						4.5	1.63	4

1. Alligator Cracking	6. Depression	11. Patching & Util Cut Patching	16. Shoving
2. Bleeding	7. Edge Cracking	12. Polished Aggregate	17. Slippage Cracking
3. Block Cracking	8. Jt. Reflection Cracking	13. Potholes	18. Swell
4. Bumps and Sags	9. Lane/Shoulder Drop Off	14. Railroad Crossing	19. Weathering/Raveling
5. Corrugation	10. Long & Trans Cracking	15. Rutting	

Table 3-1: Observed Distress Types and Ratings for PAR 0-20 m Unit

Segment PAR 0-20 m MAX CDV = 24 **PCI =** **76**

Segment Area 180 m2 **Rating** **Satisfactory**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
10L	0.75	20	9.25				30	16.67	10
11L	5.5						5.5	3.06	6
1L	4.875						4.875	2.71	17.5
18M	1.625	1.9					3.525	1.96	10

Table 3-2: Observed Distress Types and Ratings for PAR 20-40 m Unit

Segment PAR 20-40 m MAX CDV = 46 **PCI =** **54**

Segment Area 180 m2 **Rating** **Poor**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
6M	10						10	5.56	20
10M	10						10	5.56	13
6L	9						9	5.00	10
10L	9						9	5.00	4
11L	1						1	0.56	1
1L	19						19	10.56	34

Table 3-3: Observed Distress Types and Ratings for PAR 40-60 m Unit

Segment PAR 40-60 m MAX CDV = 60 **PCI =** **40**

Segment Area 180 m2 **Rating** **Very Poor**

Date 25-Apr-24 **Field Staff** J. Goodwin & G. Faraj

Distress Severity	Quantity						Total	Density	Deduct Value
6M	20						20	11.11	32
10M	20						20	11.11	20
1L	12.5	3	20				35.5	19.72	42

Table 3-4: Observed Distress Types and Ratings for PAR 60-80 m Unit

Segment	PAR 60-80 m			MAX CDV =	50	**PCI =** **50**
Segment Area	180 m2					**Rating** **Poor**
Date	25-Apr-24		**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
6M	20						20	11.11	32
10M	20						20	11.11	20
1L	11	2.5					13.5	7.50	30

Table 3-5: Observed Distress Types and Ratings for PAR 80-100 m Unit

Segment	PAR 80-100 m			MAX CDV =	48	**PCI =** **52**
Segment Area	180 m2					**Rating** **Poor**
Date	25-Apr-24		**Field Staff**	J. Goodwin & G. Faraj		

Distress Severity	Quantity						Total	Density	Deduct Value
6M	4						4	2.22	32
10M	20						20	11.11	18
1L	7.5						7.5	4.17	27
11L	6						6	3.33	6

Appendix A

Photograph Log

Project Photographs

Geotechnical Road Condition Survey
Gorewood Drive, Brampton, ON.

Photo: #1

Date: April 25, 2024

Description: Part of Gorewood Dr with no visible distress.

Photo: #2

Date: April 25, 2024

Description: : Part of Gorewood Dr with no visible distress.

Project Photographs

Geotechnical Road Condition Survey
Gorewood Drive, Brampton, ON.

Photo: #3

Date: April 25, 2024

Description: : Part of Gorewood Dr showing Long & Trans Cracking .

Photo: #4

Date: April 25, 2024

Description: Part of Gorewood Dr with a visible medium severity Pothole.

Project Photographs

Geotechnical Road Condition Survey
Gorewood Drive, Brampton, ON.

Photo: #5

Date: April 25, 2024

Description: : Part of Gorewood Dr showing low severity Block Cracking.

Photo: #6

Date: April 25, 2024

Description: : Part of Gorewood Dr showing medium severity Lane/Shoulder Drop Off

Project Photographs

Geotechnical Road Condition Survey
Gorewood Drive, Brampton, ON.
.

Photo: #7

Date: April 25, 2024

Description: : Part of Gorewood Dr showing high severity Lane/Shoulder Drop Off.

Photo: #8

Date: April 25, 2024

Description: View of Long & Trans Cracking in GD.

Project Photographs

Geotechnical Road Condition Survey
Gorewood Drive, Brampton, ON.

Photo: #9

Date: April 25, 2024

Description: : Part of Gorewood Dr showing a low severity Jt. Reflection Cracking.

Photo: #10

Date: April 25, 2024

Description: : Part of Gorewood Dr showing medium severity Lane/Shoulder Drop Off.

Project Photographs

Geotechnical Road Condition Survey
Intermodal Drive, Brampton, ON.

Photo: #1

Date: April 25, 2024

Description: : Part of Intermiodal Dr with no visible distress.

Photo: #2

Date: April 25, 2024

Description: Part of Intermiodal Dr with no visible distress.

Project Photographs

Geotechnical Road Condition Survey
Intermodal Drive, Brampton, ON.

Photo: #3

Date: April 25, 2024

Description: Part of Intermiodal Dr showing low severity Block Cracking.

Photo: #4

Date: April 25, 2024

Description: Part of Intermiodal Dr showing medium severity Long & Trans Cracking, and Alligator Cracking.

Project Photographs

Geotechnical Road Condition Survey
Intermodal Drive, Brampton, ON.

Photo: #5

Date: April 25, 2024

Description: Part of Intermiodal Dr showing low severity Potholes.

Photo: #6

Date: April 25, 2024

Description: Part of Intermiodal Dr showing medium severity Jt. Reflection Cracking.

Project Photographs

Geotechnical Road Condition Survey
Intermodal Drive, Brampton, ON.

Photo: #7

Date: April 25, 2024

Description: Part of Intermiodal Dr showing medium severity Alligator Cracking and low severity Block Cracking.

Photo: #8

Date: April 25, 2024

Description: Part of Intermiodal Dr showing low severity Long & Trans Cracking.

Project Photographs

Geotechnical Road Condition Survey
Intermodal Drive, Brampton, ON.

Photo: #9

Date: April 25, 2024

Description: Part of Intermiodal Dr showing low severity Swelling.

Photo: #10

Date: April 25, 2024

Description: Part of Intermiodal Dr showing low severity Long & Trans Cracking.

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