Assignment of points

B1	Project Management	100
B2	Civil Design	75
B3	Systems Design	75
B4	Construction	100
B5	Maintenance and rehabilitation	75
B6	Operations	75
	Total Points	500

Key to Civil Design Presentation Meeting and Proposal Submissions

G.U.	General Understanding	Demonstrate a general understanding of the requirement
D.U.	Detailed Understanding	Demonstrate that Project Co has a detailed understanding of the requirement and how Project will apply or use the requirement to develop a specific approach
G.A.	General Approach	Presents a general or an example of an approach or solution to a requirement
D.A.	Detailed Approach	Presents a detailed approach to a requirement with specific solutions, products, concept drawings or specification
G.D.	General Demonstration	Presents drawings, specifications, and site specific information that demonstrates Project Co's specific solution to a requirement
S.D.	Specific Demonstration	Presents drawings, specifications, and site specific information to respond to a Specific Issue that demonstrates Project Co's specific solution to that issue
N.A.	Not Applicable	Requirement to be addressed later or in another proposal section
S.I.	Supplemental Information	Project Co to provide any supplemental information or updates to previous information, if required.
NOTE	Note on Submission	A specific note or instruction about a particular item

B.2	Civil Design		Primary Reference	
	B2.0	Holistic Approach to Civil Design		
	1	Project Co's Holistic Approach to Civil Design	NA	
	2	Engineering and Design Plan	Schedule 15-2 Article 1.2 (o)(ix)A, B	

B2.1	Civil Design Organization and Key Personnel		Primary Reference	
	1	Civil Design Organization for Phase 1 and Phase 2	NA	
	2	Key Civil and Architectural Design Personnel	NA	

B2.2	Civil Design Approach to Phase 1 and Phase 2		Primary Reference	
	1	Civil Design Submittal Reports, Submittal Lists, and Submission Check Lists	Schedule 15-2 Article 1.2(o)(viii)	
	2	Engineering and Design Plan, Design Packaging Plan (Civil)	Schedule 15-2 Article 1.2(o)(ix)	
	3	Civil Design Support for Quality Control/Quality Assurance	Schedule 11	
	4	Civil Designer Support for Verification, Testing and Acceptance Program	Schedule 15-2 Article 13	

B2.3	Civil Design		Primary Reference	
	1	Survey	Schedule 15-2 Article 2.3	
	2	Alignment Control and Right-of-Way (ROW)	Schedule 15-2 Article 2.4	
	3	Geotechnical Design Criteria and Parameters	Schedule 15-2 Article 2.5	
	4	Approvals and Permitting Periods	Schedule 15-2 Article 2.6	
	5	Public Infrastructure Works	Schedule 15-2 Article 2.7	
	6	Road Construction and Streetscaping	Schedule 15-2 Article 2.8, 2.9	
	7	Traffic Signal Infrastructure, Illumination and Traffic Control Devices	Schedule 15-2 Article 2.10, 2.11, 2.12	
	8	Maintenance and Protection of Traffic	Schedule 15-2 Article 2.13	
	9	Landscaping	Schedule 15-2 Article 2.14	
	10	Bus Transit Integration	Schedule 15-2 Article 2.15	
	11	Miscellaneous Civil	Schedule 15-2 Article 2.16	

B2.4	Utility Infrastructure		Primary Reference	
	1	Approvals and Permitting	Schedule 15-2 Article 3.3	
	2	Public Infrastructure Works	Schedule 15-2 Article 3.4	
	3	Utility Design and Relocation – General	Schedule 15-2 Article 3.5	
	4	Sanitary Sewer	Schedule 15-2 Article 3.6	
	5	Storm Sewer and relocation of Storm Sewers	Schedule 15-2 Article 3.7, 3.8	
	6	Water Distribution	Schedule 15-2 Article 3.9	
	7	Natural Gas	Schedule 15-2 Article 3.10	
	8	Electrical Distribution	Schedule 15-2 Article 3.11	
	9	Telecommunications	Schedule 15-2 Article 3.12	
	10	Service connections and Prospect Sleeves	Schedule 15-2 Article 3.13, 3.14	

B2.5	Environmental Design Criteria		Primary Reference	
	1	Temperature and Humidity	Schedule 15-2 Article 4.3	

	2	Electromagnetic Compatibility	Schedule 15-2 Article 4.4	
	3	Noise	Schedule 15-2 Article 4.5	
	4	Ground-Borne Vibration	Schedule 15-2 Article 4.6	
	5	Air Quality	Schedule 15-2 Article 4.7	
	6	Water Quality	Schedule 15-2 Article 4.8	
	7	Wind	Schedule 15-2 Article 4.9	
	8	Precipitation	Schedule 15-2 Article 4.10	
	9	Lightning Protection	Schedule 15-2 Article 4.11	
	10	Sand, Dust and Other Obstacles	Schedule 15-2 Article 4.12	
	11	Contaminated Materials / Hazardous Waste	Schedule 15-2 Article 4.13	

B2.6	Energy Management Plan		Primary Reference	
	1	Energy Management Plan	Schedule 15-2 Article 7.1(a), 7.1(d) & 7.1(f)	

	2	Energy Efficiency	Schedule 15-2 Article 7.1.(b)	
	3	Utility Billing Arrangements	Schedule 15-2 Article 7.1.(e)	

B2.7	Track Alignment and Wayside Clearances		Primary Reference	
	1	Alignment General	Schedule 15-2 Article 11.1	
	2	Baselines	Schedule 15-2 Article 11.2	
	3	Horizontal Alignment Criteria	Schedule 15-2 Article 11.3	
	4	Vertical Alignment Criteria	Schedule 15-2 Article 11.4	
	5	Wayside and Vehicle Clearances	Schedule 15-2 Article 11.5 & 11.6	

B2.8	LRT Stops and Stop Equipment		Primary Reference	
	1	Design Guidelines and Design Requirements	Schedule 15-2 Article 14.2, 14.3	
	2	General LRT Stop Requirements	Schedule 15-2 Article 14.6	
	3	Site Access & Egress	Schedule 15-2 Article 14.7	
	4	Platforms & Shelters Design Requirements	Schedule 15-2 Article 14.8	
	5	Design Elements of Continuity and Variability	Schedule 15-2 Article 14.9	
	6	Specific LRT Stop requirements (by location)	Schedule 15-2 Article 14.10	
	7	Security Considerations	Schedule 15-2 Article 14.11	
	8	Structural	Schedule 15-2 Article 14.12	
	9	Mechanical and Electrical Systems	Schedule 15-2 Article 14.13	
	10	Materials & Finishes	Schedule 15-2 Article 14.14	

B2.9	Structures		Primary Reference	
	1	General Requirements and Design Codes and Standards	Schedule 15-2 Article 15.1, 15.2	
	2	Design Loads, Load Factors and Loading Combinations	Schedule 15-2 Article 15.3, 15.6	
	3	LRT Ancillary Structures	Schedule 15-2 Article 15.5	
	4	Materials	Schedule 15-2 Article 15.7	
	5	Culverts and Existing Bridges	Schedule 15-2 Article 15.8, 15.9	
	6	Special Design Considerations	Schedule 15-2 Article 15.10	

B2.10	OMSF		Primary Reference	
	1	General Requirements	Schedule 15-2 Article 16.1, 16.3, 16.4, 16.6, 16.7, 16.8, and 16.9	
	2	LRV Maintenance and Repair Shop	Schedule 15-2 Article 16.1	
	3	Support Shops	Schedule 15-2 Article 16.11	
	4	Wayside Systems Maintenance and Repair Facility	Schedule 15-2 Article 16.12	
	5	LRV Car Wash	Schedule 15-2 Article 16.13	
	6	Central Control Facility	Schedule 15-2 Article 16.14	

	7	OMSF Communications	Schedule 15-2 Article 16.15	
	8	Security	Schedule 15-2 Article 16.16	
	9	Hazardous and Toxic Materials Storage and Fuel Storage.	Schedule 15-2 Article 16.17 & 16.19	
	10	Drainage and Services	Schedule 15-2 Article 16.18	
	11	Service Roads and Aisles	Schedule 15-2 Article 16.2	
	12	Material and Spare Parts Storage	Schedule 15-2 Article 16.21	
	13	Administration Facility and Offices	Schedule 15-2 Article 16.22	
	14	Maintenance Management Information System	Schedule 15-2 Article 16.23	
	15	Maintenance and Recovery Vehicles	Schedule 15-2 Article 16.24	

B2.11	Corrosion Control and Grounding - Basis of Design (Soil and Atmospheric aspects)		Primary Reference	
	1	General Requirements	Schedule 15-2 Article 17.1	
	2	Purpose and Scope	Schedule 15-2 Article 17.2, 17.3	
	3	Interfaces, Expansion, and Special Design Provisions	Schedule 15-2 Article 17.4, 17.5, 17.6, 17.8	
	4	Soil Corrosion Prevention Systems	Schedule 15-2 Article 17.11 and 17.12	
	5	Atmospheric Corrosion Prevention Systems	Schedule 15-2 Article 17.13 and 17.14	

B2.12	Fire/Life Safety		Primary Reference	
	1	General Requirements	Schedule 15-2 Article 20.1	
	2	LRT Stop Facilities	Schedule 15-2 Article 20.2	
	3	Trackway Faxcilities	Schedule 15-2 Article 20.3	
	4	Vehicle Yard and Maintenance Facilities	Schedule 15-2 Article 20.4	
	5	System Fire/Life Safety Procedures	Schedule 15-2 Article 20.5	
	6	Communications	Schedule 15-2 Article 20.6	
	7	Central Control Facilities	Schedule 15-2 Article 20.7	
	8	Inspection, Maintenance, and Training	Schedule 15-2 Article 20.8	

Holistic Approach to Civil Design in B2.0						The Proponent shall describe the Holistic approach for the design of the civil and architectural components of the LRT System and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Holistic Approach to Civil Design**
1	Project Co's Holistic Approach to Civil Design	NA	G.U.	D.U.	G.D.	Provide Project Co's detailed understanding of the civil design requirements, its approach to the civil design work, experience with the design of civil and architectural work, and approach to working as an integrated team. The holistic approach to completing the design of the civil and architectural work shall be seamless and continuous. - Provide Project Co's approach ensuring that the design of the civil work is coordinated with the project schedule and the design work of the systems work. - (GD) For each major civil component, provide the firm's experience in design for that specific component and the name of the lead person for the design of the component.
2	Engineering and Design Plan	Schedule 15-2 Article 1.2 (o)(ix)A, B	G.U.	D.U.	S.I.	Provide Project Co's understanding and approach to preparing and implementing the Engineering and Design Plan for the civil design.

Civil Design Organization and Key Personnel to be addressed in B2.1						The Proponent shall describe the organization for the design of the Civil and Architectural components of the LRT Systems and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Civil Design Organization and Key Personnel**
1	Civil Design Organization for Phase 1 and Phase 2	NA	G.A.	D.A. G.D.	S.I.	Provide Project Co's approach to the organization of civil design resources, firms and key personnel responsible for the design of the various civil and architectural components. - Provide the location where the civil and architectural design work will be performed and firms that will be leading the design work. - Provide a description of the role and responsibilities, qualifications, and authority of the Project Co Key Individuals for the design of civil and architectural components. - Provide a description of the organizational interfaces between those responsible for the design of civil and architectural components and those responsible for the design of the systems and those responsible for construction. - (G.D.) Provide a detailed organizational chart, for Phase 1 and Phase 2, indicating the key personnel, their role, firm association, and reporting lines within the Civil Design organization and beyond the Civil Design organization where applicable. The organization chart shall identify all Key Civil and Architectural Design Personnel.
2	Key Civil and Architectural Design Personnel	NA	G.A.	G.D	S.I.	(G.D.) For the DPM process provide a brief bio-for each of Project Co's Key Civil and Architectural Design Personnel, as cited in Schedule 9 of the RFP, and other significant design positions including the following positions or equivalent positions with similar responsibilities. If a specific person has not been determined for a particular position, provide the minimum qualifications that Project Co will set for that position. Resumes or minimum qualifications shall be provide in the final submission: - Chief Engineer (Key Person) - Chief Architect (Key Person) - Lead Facility Power Engineer - Chief Structural Engineer - Lead Geotechnical Engineer - Lead Transportation Engineer - Lead Roadway Illumination Engineer - Lead Municipal Engineer (Utilities) - Lead Track Alignment Engineer - Chief Facilities Engineer (Key Person) - Lead Mechanical Engineer - Lead Building Structures Engineer - Lead OCS Poles and Foundation Engineer - Chief Civil Engineer (Key Person) - Lead Traffic Control Systems Engineer - Lead Corrosion Control Engineer (environmental) - Lead Trackwork Engineer - Lead Noise and Vibration Engineer For each key person or significant position, indicate if they are full time or part time positions, when they will be assuming their role on the project, whether they will be stationed in the Region of Waterloo or Greater Toronto Area and when they are scheduled for redeployment.

Civil Design Approach to Phase 1 and Phase 2 to be addressed in B2.2						The Proponent must address the overall civil design approach at an appropriate level of detail, as set out in or otherwise referenced in Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Civil Design Approach to Phase 1 and Phase 2**
1	Civil Design Submittal Reports, Submittal Lists, and Submission Check Lists	Schedule 15-2 Article 1.2(o)(viii)	G.A.	D.A.	G.D.	Project Co shall provide their approach for preparing the Submittal Report, Submittal List, and Submittal checklist for civil design packages. (GD) Project Co shall provide a preliminary list of civil related submittals for the civil design packages (GD) Project Co shall provide an example of a civil submittal checklist reflecting the quality of the civil submittal checklist to be provided by Project Co for the design work.
2	Engineering and Design Plan, Design Packaging Plan (Civil)	Schedule 15-2 Article1.2(o)(ix)	G.A.	G.D.	S.I.	Project Co shall provide their approach to prepare the Packaging Plan for the civil design packages. (GD) Project Co shall provide a preliminary list of civil design packages
3	Civil Design Support for Quality Control/Quality Assurance	Schedule 11	G.A.	D.U.	G.A.	Provide Project Co's approach to ensuring that the quality of the civil design(s) is implemented during the construction of the civil design in the field and whether Project Co's Engineer of Record for the civil design has a meaningful role in the construction QA/QC process.
4	Civil Designer Support for Verification, Testing and Acceptance Program	Schedule 15-2 Article 13	G.A.	D.A.	G.D.	Provide Project Co's approach to ensuring that the Verification, Testing and Acceptance Program for civil design elements includes Project Co's Engineer of Record for the civil design as part of the program - (G.D.) List of test and inspection procedures for civil design that will be performed as part of the Verification, Testing, and Acceptance Plan.

Civil Design items to be addressed in Part B2.3						The Proponent must address the Civil Design requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 2 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Civil Design**
1	Survey	Schedule 15-2 Article 2.3	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to meeting the general requirements for the survey. - Provide Project Co's approach to validating and updating the base survey data provided by the Region to the survey data that will be incorporated into Project Co's design documents. - Provide Project Co's approach to identifying and correcting any discrepancy between the field measurements and the as built or existing legal survey data. - Provide Project Co's approach to producing and advancing the design of the plan and profile drawings - Approach to protection of the legal survey right-of-way monuments.
2	Alignment Control and Right-of-Way (ROW)	Schedule 15-2 Article 2.4	D.U.	G.A.	D.A. G.D. S.D.	Provide Project Co's understanding and approach to meeting the general requirements for the Alignment Control and Right-of-Way requirements. - Provide Project Co's approach to tie the control points to all other monuments within the corridor. - Provide Project Co's approach to plan for and control different surveys and right-of-ways/easements. - Provide Project Co's approach to clearance surveys. - (G.D.) Show on Project Co's plan and profile drawings the preliminary need lines for construction easements. - (S.D.) Show on Project Co's plan and profile drawings any additional permanent right-of-way requirements. needed for the project including the preliminary location of wayside cases or houses (bungalows).
3	Geotechnical Design Criteria and Parameters	Schedule 15-2 Article 2.5	G.U.	G.A.	D.A. S.D.	Provide Project Co's understanding of the Geotechnical Design Criteria and Parameters and approach to utilizing the geotechnical data. - Provide Project Co's understanding of the key requirements for the Geotechnical Data Report and Geotechnical Design Report. - Provide a description of Project Co's geotechnical program to support Project Co's final design activities. - (S.D.) Show on Project Co's plan and profile drawings, the preliminary locations of boreholes in the field to be performed by Project Co. - Provide Project Co's approach to the application of the data in foundations, slab tracks, LRT platforms, and pavement designs. - Provide Project Co's approach to instrumentation and monitoring of adjacent structures in order to protect them against any damage during and after the construction.
4	Approvals and Permitting Periods	Schedule 15-2 Article 2.6	G.U.	D.U.	G.A.	Provide Project Co's understanding and approach to securing the permits and approvals for the civil design works in a timely fashion to support the design and construction schedule.
5	Public Infrastructure Works	Schedule 15-2 Article 2.7	G.U.	D.U.	G.A.	Provide Project Co's understanding of the roadway and trackway components of Public Infrastructure Works (PIW). - Provide Project Co's approach to identifying on the drawings and specifications what roadway and trackway work is PIW Work and what Work is not PIW Work. - Provide Project Co's approach to tracking the progress and the cost of the roadway and trackway PIW Work as per Schedule 15-2 Articleicle 19. - Provide Project Co's understanding of the issues related to design and construction of roadway and trackway PIW Work compared to Work which is not PIW Work.

Civil Design items to be addressed in Part B2.3						The Proponent must address the Civil Design requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 2 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Civil Design**
6	Road Construction and Streetscaping	Schedule 15-2 Article 2.8, 2.9	G.A.	D.A.	S.D.	Provide Project Co's understanding and approach to meeting the general requirements for the road construction and streetscaping requirements - Understanding of the functional design and improvements in maintaining effective traffic progression. - Project Co to identify key design issues and features that relate to design, construction and maintenance. - Understanding of the geotechnical conditions of the project and approach to the design of the roads. - (S.D.) Provide conceptual level roadway and trackway cross sections and identify any changes or deviations from the Region's cross sections. - (S.D.) Show on Project Co's Plan and Profile drawings the preliminary roadway rearrangements proposed by Project Co and identify any changes or deviations from the Region's Plan and Profile drawings.
7	Traffic Signal Infrastructure, Illumination and Traffic Control Devices	Schedule 15-2 Article 2.10, 2.11, 2.12	G.U.	G.A.	D.A. G.D. S.D.	Provide Project Co's understanding and approach to meeting the general requirements for the Traffic Signal Infrastructure, Illumination, and Traffic Control Devices. - (S.D.) Show on Project Co's Plan and Profile drawings the preliminary rearrangement of existing traffic control signal and highlight all new installations of traffic control signals. - (S.D.) Show on Project Co's Plan and Profile drawings the preliminary rearrangement/installation of street illumination indicating the type of pole and fixture to be provided. - (G.D.) In areas of transition of LRT trackway location and at intersections provide conceptual plans indicating Project Co's approach to appropriate signing and warning devices (i.e. rumble strips and coloured concrete) that will be used to prevent vehicle and pedestrians from entering the non-public areas of the trackway. - (G.D.) Provide conceptual directive drawings indicating Project Co's approach to pavement markings and texture or other methods to be used by Project Co to clearly delineate areas where vehicle/LRV dynamic envelope conflicts could occur.
8	Maintenance and Protection of Traffic	Schedule 15-2 Article 2.13	G.U.	N.A. NOTE	N.A. NOTE	Provide Project Co's a general understanding of requirements for the maintenance and protection of traffic requirements. (NOTE) Additional information concerning maintenance and protection of traffic during construction to be provided under item B4 - Construction
9	Landscaping	Schedule 15-2 Article 2.14	G.U.	D.A.	S.I.	Provide Project Co's understanding and approach to meeting the general requirements for the Landscaping requirements - Provide Project Co's approach to completing the tree inventory within the right of way and subsequent actions to be taken based on the results of the tree inventory.
10	Bus Transit Integration	Schedule 15-2 Article 2.15	G.U.	G.A.	S.D.	Provide Project Co's understanding and approach to meeting the general requirements for the Bus Transit Integration requirements. - (S.D.) Show on Project Co's drawings the preliminary arrangement for all bus transit integration installations.
11	Miscellaneous Civil	Schedule 15-2 Article 2.16	G.U.	G.A.	S.D.	Provide Project Co's understanding and approach to meeting the general requirements for the miscellaneous civil work. - (S.D.) Show on Project Co's plan and profile drawings the preliminary location and the generic type of fencin, railing and other Works that Project Co is proposing for the Project.

Utility Infrastructure items to be addressed in Part B2.4						The Proponent must address the Utility Infrastructure design at an appropriate level of detail, as set out in or otherwise referenced in Article 3 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Utility Infrastructure**
1	Approvals and Permitting	Schedule 15-2 Article 3.3	G.U.	D.U.	G.A.	Provide Project Co's understanding and approach to securing the permits and approvals for utility infrastructure works in a timely fashion to support the design and construction schedule.
2	Public Infrastructure Works	Schedule 15-2 Article 3.4	G.U.	D.U.	G.A.	Provide Project Co's understanding of the utility infrastructure component of Public Infrastructure Works (PIW) - Provide Project Co's approach to identifying on the drawings and specifications what utility infrastructure work is PIW Work and what Work is not PIW Work - Provide Project Co's approach to tracking the progress and the cost of the utility infrastructure PIW Work as per 15-2 Article 19. - Provide Project Co's understanding of the issues related to design and construction of utility infrastructure PIW Work compared to Work which is not PIW Work.
3	Utility Design and Relocation – General	Schedule 15-2 Article 3.5	G.U.	G.A.	D.U.	Provide Project Co's understanding and approach to meeting the general requirements for the utility design and relocation requirements. - Provide Project Co's understanding of Early Works Utility Relocation and Project Co's responsibility with respect to Early Works Utility Relocation. -Provide Project Co's understanding of the work included in the utility matrix and Project Co's responsibility with respect to work cited in the utility matrix. - Provide Project Co's approach to incorporating the utility matrix with the Schedule of Values and the Cost loaded CPM to track utility work. - Provide Project Co's approach to maintain the services to the existing adjacent properties during construction.
4	Sanitary Sewer	Schedule 15-2 Article 3.6	G.U.	G.A.	G.D.	Provide Project Co's understanding and approach to meeting the general requirements for the sanitary sewer design and relocation requirements including the approach for the preparation and use of the new and existing sanitary sewer contributing areas, re-routing and construction requirements. - (G.D.) Provide Project Co's understanding of the geotechnical conditions of the project including the water table and conceptually show on Project Co's plan and profile drawings all areas which Project Co will have to perform dewatering, significant support excavation, or take other special actions in order to install sanitary lines.

Utility Infrastructure items to be addressed in Part B2.4						The Proponent must address the Utility Infrastructure design at an appropriate level of detail, as set out in or otherwise referenced in Article 3 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Utility Infrastructure**
5	Storm Sewer and relocation of Storm Sewers	Schedule 15-2 Article 3.7, 3.8	G.U.	G.A.	G.D.	Provide Project Co's understanding and approach to meeting the general requirements for the storm sewer design and relocation requirements - Provide Project Co's understanding of the existing drainage system in relation to the future drainage patterns established with the LRT in place - Provide Project Co's approach to hydrologic analysis - Provide Project Co's approach to stormwater and ground water control at the King Street Grade Separation - Provide Project Co's approach to address any the current drainage concerns on existing roadways affected by the Project. - (G.D.) Provide understanding of the geotechnical conditions of the Project including the water table and conceptually show on Project Co's plan and profile drawings all areas which Project Co will have to perform dewatering, support excavation, or take other special actions in order to install stormwater sewers. - Provide approach for the relocation of the existing storm sewers
6	Water Distribution	Schedule 15-2 Article 3.9	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to meeting the general requirements for the water distribution relocation requirements. - Provide Project Co's approach to address the provision of temporary service to the adjacent properties and for fire protection. - Provide Project Co's approach for the relocation of the existing water distribution system. - Provide Project Co's approach for the testing of the new or relocated watermains.
7	Natural Gas	Schedule 15-2 Article 3.10	G.U.	G.A.	D.A.	Provide Project Co's understanding and approach to meeting the general requirements for the natural gas relocation requirements
8	Electrical Distribution	Schedule 15-2 Article 3.11	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to meeting the general requirements for the electrical distribution relocation requirements - Provide Project Co's approach to address the maintenance of the supply to the Wonders of Winter seasonal light display within Waterloo Park
9	Telecommunications	Schedule 15-2 Article 3.12	G.U.	G.A.	D.A.	Provide Project Co's understanding and approach to meeting the general requirements for the telecommunication relocation requirements
10	Service connections and Prospect Sleeves	Schedule 15-2 Article 3.13, 3.14	G.U.	G.A.	G.D.	Provide Project Co's understanding and approach to meeting the general requirements for the service connections and providing prospect sleeves along the alignment.

Environmental Design Criteria items to be addressed in Part B2.5						The Proponent must address the environmental design at an appropriate level of detail, as set out in or otherwise referenced in Article 4 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Environmental Design Criteria**
1	Temperature and Humidity	Schedule 15-2 Article 4.3	G.U.	D.U.	S.I.	Provide Project Co's understanding of temperature and humidity requirements and identify key equipment or materials in which temperature and humidity will be a key design consideration that will be addressed by Project Co.
2	Electromagnetic Compatibility	Schedule 15-2 Article 4.4	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to meeting the Electromagnetic Compatibility requirements including the approach for the preparation and use of the Electromagnetic Compatibility Plan.
3	Noise	Schedule 15-2 Article 4.5	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to controlling and verifying compliance with the noise requirements. - Explain how Project Co's approach will address the noise issues noted in the Region of Waterloo's Rapid Transit Project Environmental Assessment Report.
4	Ground-Borne Vibration	Schedule 15-2 Article 4.6	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to controlling and verifying compliance with the ground borne vibration requirements. - Explain how Project Co's approach will address the ground borne vibration issues noted in the Region of Waterloo's Rapid Transit Project Environmental Assessment Report.
5	Air Quality	Schedule 15-2 Article 4.7	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach complying with the Air Quality requirements
6	Water Quality	Schedule 15-2 Article 4.8	G.A.	D.A.	S.I.	Provide Project Co's understanding and approach to complying with Water Quality requirements
7	Wind	Schedule 15-2 Article 4.9	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to complying with Wind requirements - Provide approach for incorporating the Wind requirements into the Operating Program to ensure that the LRT System will not operate if the environmental limits are exceeded.
8	Precipitation	Schedule 15-2 Article 4.10	G.U.	D.A.	S.I.	Provide Project Co's understanding and approach to Precipitation requirements - Provide approach for incorporating the Precipitation requirements into the Operating Program to ensure that the LRT System will not operate if the environmental limits are exceeded.
9	Lightning Protection	Schedule 15-2 Article 4.11	G.U.	G.A.	D.A.	Provide Project Co's understanding and approach to Lightning Protection requirements - Provide approaches to mitigate damage from lightning to the traction power, communication, and train control systems
10	Sand, Dust and Other Obstacles	Schedule 15-2 Article 4.12	G.U.	S.I.	S.I.	Provide Project Co's understanding and approach to Sand, Dust and Other Obstacles requirements
11	Contaminated Materials / Hazardous Waste	Schedule 15-2 Article 4.13	G.A.	D.A.	S.I.	Provide Project Co's understanding and approach to Contaminated Materials / Hazardous Waste requirements - Provide a detailed approach to Project Co's preconstruction environmental assessments and investigations - Provide a detailed approach to Project Co's Hazardous Material Management Plan

Energy Management Plan items to be addressed in Part B2.6						The Proponent must address the Energy Management Plan requirements, at an appropriate level of detail, as set out in or otherwise referenced in Article 7 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Energy Management Plan**
1	Energy Management Plan	Schedule 15-2 Article 7.1(a), 7.1(d) & 7.1(f)	GU	GA	SI	Provide Project Co's understanding and approach to the Energy Management Plan and the role of regeneration.
2	Energy Efficiency	Schedule 15-2 Article 7.1.(b)	GU	GA	DA	Provide Project Co's understanding and identification of major energy use centers - Provide Project Co's approach to minimize energy consumption - Detailed approach to providing the Energy Management System
3	Utility Billing Arrangements	Schedule 15-2 Article 7.1.(e)	GU	GA	SI	Provide Project Co's understanding and approach to assist Region with reducing the cost of power

Track Alignment and Wayside Vehicle Clearances items to be addressed in Part B2.7						The Proponent must address the Track Alignment and Wayside Clearances design requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 11 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Track Alignment and Wayside Clearances**
1	Alignment General	Schedule 15-2 Article 11.1	DU	GA	SI	Provide Project Co's understanding and approach for complying with the general requirements for the design of the track alignment - Provide Project Co's understanding of the physical characteristics of the LRV being provided by the Region and the factors that need to be considered when designing the horizontal and vertical alignments suitable for the LRV. - Identify areas which may require a variance and the rationale for the variance.
2	Baselines	Schedule 15-2 Article 11.2	GU	GA	SI	Provide Project Co's understanding of survey control and reference lines and Project Co's approach to establishing and using survey control and reference lines - Provide Project Co's general approach to providing wayside signs and mile posts - Provide Project Co approach to establishing permanent control points to check track alignment during the term for Operations and Maintenance
3	Horizontal Alignment Criteria	Schedule 15-2 Article 11.3	GA	DA	SD	Provide Project Co's understanding and approach for complying with the requirements for the horizontal design of the track alignment - Provide Project Co's approach to establishing appropriate design speed requirements along the alignment and validating the civil design speed with the actual train speed for LRT and freight railroad trains - Identify any areas in which factors other than the horizontal track geometry will dictate the appropriate speed of the train and provide Project Co's approach to those areas. - Identify areas along the track where the alignment may induce negative unbalance and Project Co's approach to those areas. - (SD) Provide plan and profile drawings with horizontal alignment data tables reflecting Project Co's preliminary solution for the track alignment.
4	Vertical Alignment Criteria	Schedule 15-2 Article 11.4	GA	DA	SD	Provide Project Co's understanding and approach for complying with the requirements for the vertical design of the track alignment - Provide Project Co's approach to collecting the vertical data needed to integrate the vertical alignment into the urban environment - Identify any areas in which factors other than vertical track geometry will dictate the appropriate speed of the train and provide Project Co's approach to those areas. - Identify areas along the track where the vertical alignment may control the civil design speed and provide Project Co's approach to those areas. - (SD) Provide plan and profile drawings with vertical alignment data reflecting Project Co's preliminary solution for the track alignment.
5	Wayside and Vehicle Clearances	Schedule 15-2 Article 11.5 & 11.6	GU	DA	GD	Provide Project Co's understanding of the MVDE and other spatial factors not included in the MVDE - Provide Project Co's approach for defining the spatial requirements for the other factors and how Project Co will determine the final design dimensions that are included in the construction documents - (GD) Provide preliminary directive drawings indicating the spatial requirements for the MVDE and other factors and the typical location of wayside elements.

LRT Stops and Stop Equipment items to be addressed in Part B2.8						The Proponent must address the LRT Stops and Stop Equipment design at an appropriate level of detail, as set out in or otherwise referenced in Article 14 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - LRT Stop and Stop Equipment**
1	Design Guidelines and Design Requirements	Schedule 15-2 Article 14.2, 14.3	G.U. G.A.	S.I.	S.I.	Provide Project Co's understanding and general approach to meeting the design guideline and design requirements for the LRT Stops and Stop equipment
2	General LRT Stop Requirements	Schedule 15-2 Article 14.6	D.U.	D.A.	S.I.	Provide Project Co's understanding and approach to meeting the general requirements for the design of the LRT Stops and Stop equipment - Explain how all disciplines will closely coordinate their design activities with each other to ensure that the many different LRT Stop elements are properly interfaced.
3	Site Access & Egress	Schedule 15-2 Article 14.7	G.U.	D.U.	G.A.	Provide Project Co's understanding and approach to Site Access & Egress requirements
4	Platforms & Shelters Design Requirements	Schedule 15-2 Article 14.8	G.U.	G.D.	S.I.	Provide Project Co's understanding of Platforms & Shelters Design Requirements - (GD) Provide Preliminary directive drawings indicating materials and general arrangement for typical side and central platform
5	Design Elements of Continuity and Variability	Schedule 15-2 Article 14.9	G.U.	G.D.	S.I.	Provide Project Co's understanding of Design Elements of Continuity and Variability requirements - (GD) Provide preliminary concept drawings indicating Project Co's approach to elements of continuity and elements which will vary.
6	Specific LRT Stop requirements (by location)	Schedule 15-2 Article 14.10	G.U.	D.U.	S.D.	Provide Project Co's approach and demonstration of Specific LRT Stop requirements (by location) - (SD) Provide site specific concept plans and elevations for each of the LRT Stops. All Stop elements including OCS, light poles, cabinets, canopies, shelters etc. shall be depicted on the concept plans
7	Security Considerations	Schedule 15-2 Article 14.11	G.U.	G.A	S.I.	Provide Project Co's understanding and approach to complying with the security considerations requirements
8	Structural	Schedule 15-2 Article 14.12	G.U.	G.A	S.I.	Provide Project Co's understanding and approach to Structural requirements
9	Mechanical and Electrical Systems	Schedule 15-2 Article 14.13	G.U. G.A.	G.D.	S.I.	Provide Project Co's understanding and approach to Mechanical and Electrical Systems requirements - (GD) Provide approach for platform heating and indicate areas which will be covered on a preliminary directive drawing. - (GD) Provide preliminary single line diagram for power cabinets at LRT Stops - (GD) Provide preliminary directive drawings for LRT Stops, including access areas and platform zone, showing the proposed illumination and indicate general appearance of poles and fixtures.
10	Materials & Finishes	Schedule 15-2 Article 14.14	G.A.	D.A. G.D.	S.I.	Provide Project Co's understanding and approach to Materials & Finishes requirements - (GD) Provide preliminary directive drawings for the LRT Stops indicating the materials that will be used in each type of LRT Stop.

Structures items to be addressed in Part B2.9						The Proponent must address the requirements for Structures at an appropriate level of detail, as set out in or otherwise referenced in Article 15 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission - Structures**
1	General Requirements and Design Codes and Standards	Schedule 15-2 Article 15.1	G.U.	G.D.	S.D.	Provide Project Co's understanding of the general requirements and Design Codes and Standards for structures - (GD) Provide concept drawings indicating Project Co's approach for each of the new or existing structures to be constructed, replaced, widened, modified, strengthened or rehabilitated. - (GD) Provide conceptual drawings indicating Project Co's approach for the King Street Grade Separation Structure including retaining walls, adjacent landscaping areas and foundations. - (SD) Provide preliminary drawings indicating Project Co's approach for the King Street Grade Separation Structure including retaining walls and foundations.
2	Design Loads, Design Service Life, Load Factors and Loading Combinations	Schedule 15-2 Article 15.3, 15.4, 15.6	G.U.	G.A.	D.U.	Provide Project Co's understanding of the Design Loads, Design Life, Load Factors and Loading combinations
3	LRT Ancillary Structures	Schedule 15-2 Article 15.5	G.U.	G.D.	S.D.	Provide Project Co's understanding of the LRT Ancillary Structures - Approach to determine the wind pressure, pole locations, span length, clearance limitations and foundation design for the OCS and other pole structures - Approach to designing slab track (embedded and DF track) - Approach to the design of retaining walls - (GD) provide preliminary standard drawings for each type of embedded or slab track configuration. - (GD) Provide preliminary standard drawings for each type of LRT Stop platform slab/structure. - (SD) Show on Project Co's plan and profile drawings the location of each retaining wall and noise wall and indicate the general structural type of construction for each structure.
4	Materials	Schedule 15-2 Article 15.7	G.U.	D.A.	S.I.	Provide Project Co's understanding of the requirements for structural materials and approach to selecting materials which also comply with the corrosion control requirements in Article 18.
5	Culverts and Existing Bridges	Schedule 15-2 Article 15.8, 15.9	G.U.	D.A.	S.I.	Provide Project Co's understanding and approach of the Culverts and Existing Bridges - Provide a general understanding of the existing structures that Project Co needs to replace, widen, modify, strengthen or rehabilitate. - Provide detailed approach to inspection of existing structures needed to be constructed, replaced, widened, modified, strengthened or rehabilitated.
6	Special Design Considerations	Schedule 15-2 Article 15.10	G.U.	D.U.	S.I.	Provide Project Co's understanding of the Special Design Considerations

Operations, Maintenance and Storage Facility items to be addressed in Part B2.10						The Proponent must address the Operations, Maintenance, and Storage Facility (OMSF) design requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 16 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Operations, Maintenance, and Storage Facility**
1	General Requirements	Schedule 15-2 Article 16.1, 16.3, 16.4, 16.6, 16.7, 16.8, and 16.9	D.U.	D.A. G.D.	S.D.	Provide Project Co's understanding and approach for complying with the general requirements for the design of the OMSF - Provide Project Co's approach to functional planning, including the expansion provisions for Stage 2 LRT Project and any deferrals of components provided for the Stage 1 LRT Project related to providing the ultimate capacity requirement for 33 LRVs, and identification of spatial requirements for the LRV Maintenance and Repair shop, Support Shops, Wayside System Maintenance and Repair, LRV Car Wash, Central Control Facility, Material and spare part storage, administration facility and offices and the storage yard for the LRT vehicles. - Provide Project Co's approach for achieving LEED Silver Certification. - (G.D.) Provide Project Co's preliminary site plan and building foot prints for the OMSF indicating how the preliminary plans meet the functional requirements and any deferred tracks or other elements with respect to Stage 1 LRT and the ultimate capacity. - (S.D.) Provide advanced preliminary site plans showing all significant elements such as tracks, OCS, TPSS, emergency generators, storage/fueling areas, roads, buildings, major ductbanks, security, and environmental mitigation measures.
2	LRV Maintenance and Repair Shop	Schedule 15-2 Article 16.10	D.U.	D.A. G.D.	S.D.	Provide Project Co's understanding and approach for complying with the general requirements for the design of the LRV Maintenance and Repair Shop - Provide Project Co's understanding of the activities that will occur in the LRV Maintenance and Repair Shop and approach to the general arrangement of the LRV Maintenance and Repair shop. - (G.D.) Provide Project Co's preliminary floor plans and building elevations for the LRV Maintenance and Repair Shop. - (S.D.) provide advanced preliminary floor plans, building sections, and elevations indicating key elements such as work positions, circulation, as well as materials and finishes to be used in the construction of the LRV Maintenance and Repair shop.
3	Support Shops	Schedule 15-2 Article 16.11	D.U.	D.A. G.D.	S.D.	Provide Project Co's understanding and approach for complying with the general requirements for the design of the Support Shops - For each of the support shops cited in this Article, provide Project Co's approach indicating what level of support services will be provided at the OMSF and what support services will be provided off site. - Provide Project Co's approach to the Support Shop Operating Philosophy and how that philosophy will be addressed in the design of the support shops. - (G.D.) Provide Project Co's preliminary floor plans and building elevations for the Support Shops. - (S.D.) Provide advanced preliminary floor plans, building sections, and elevations indicating key elements such as work positions, equipment, circulation, storage areas as well as materials and finishes to be used in the construction of the Support Shops.

Operations, Maintenance and Storage Facility items to be addressed in Part B2.10						The Proponent must address the Operations, Maintenance, and Storage Facility (OMSF) design requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 16 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Operations, Maintenance, and Storage Facility**
4	Wayside Systems Maintenance and Repair Facility	Schedule 15-2 Article 16.12	D.U.	D.A. G.D.	S.D.	Provide Project Co's understanding and approach for complying with the general requirements for the design of the Wayside Systems Maintenance and Repair Facility(s) - For each of the Wayside Systems Maintenance and Repair Facility services cited in this Article, provide what services will be provided at the OMSF and what services will be provided off site. - (G.D.) Provide Project Co's preliminary floor plans and building elevations for the Wayside Systems Maintenance and Repair Facility. - (S.D.) provide advanced preliminary floor plans, building sections, and elevations indicating key elements such as work positions, equipment, circulation, storage areas as well as materials and finishes to be used in the construction of the Wayside Systems Maintenance and Repair Facility.

Operations, Maintenance and Storage Facility items to be addressed in Part B2.10						The Proponent must address the Operations, Maintenance, and Storage Facility (OMSF) design requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 16 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Operations, Maintenance, and Storage Facility**
5	LRV Car Wash	Schedule 15-2 Article 16.13	D.U.	D.A. G.D.	S.D.	Provide Project Co's understanding and approach for complying with the general requirements for the design of the LRV Car Wash including environmental requirements - Provide Project Co's approach to exterior and interior car cleaning - Provide Project Co's approach to under car cleaning. - (G.D.) Provide Project Co's preliminary site layouts the LRV Car Wash and any under car cleaning areas. - (S.D.) provide advanced preliminary site layouts for building sections, and elevations indicating key elements such as cleaning equipment and water treatment, and cleaning areas well as materials and finishes to be used in the construction of the LRV Car Wash and other cleaning areas.
6	Central Control Facility	Schedule 15-2 Article 16.14	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach for providing the space and support spaces for the Central Control Facility - Provide Project Co's approach to modular design - Provide Project Co's approach to providing visual oversight of the yard and yard leads. - (G.D.) Provide Project Co's room layouts with a focus on electrical and mechanical installations for the Central Control Facility and support spaces.
7	OMSF Communications	Schedule 15-2 Article 16.15	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach for providing communications for the OMSF. - (G.D.) Provide Project Co's concept design for the OMSF communication installations with a focus on location of communication cases/houses and communication ductbanks as well as the general arrangement of communication installations.
8	Security	Schedule 15-2 Article 16.16	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach for providing for site security for the OMSF. - (G.D.) Provide Project Co's concept design for the security installations for the OMSF with a focus on location of guard booths, fences, gates, CCTV coverage, and other security related installations.
9	Hazardous and Toxic Materials Storage and Fuel Storage.	Schedule 15-2 Article 16.17 & 16.19	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach for handling hazardous and toxic materials in the OMSF or elsewhere on the project if applicable. - (G.D.) Provide Project Co's a list of hazardous and toxic materials that are anticipated to be used by Project Co and the location where these materials will be stored.
10	Drainage and Services	Schedule 15-2 Article 16.18	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach for handling site drainage issues. - (G.D.) Provide Project Co's concept design for the site drainage with a focus on drainage provision that may require decontamination elements.
11	Service Roads and Aisles	Schedule 15-2 Article 16.20	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach for providing service roads and aisles for the OMSF - (G.D.) Provide Project Co's concept design for service roads and aisles and the type of pavement materials to be used as well as the related thicknesses.
12	Material and Spare Parts Storage	Schedule 15-2 Article 16.21	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach related to material and spare parts storage. - (G.D.) Provide Project Co's concept design for materials and spare part storage spaces and structures.
13	Administration Facility and Offices	Schedule 15-2 Article 16.22	G.U.	GA G.D.	S.I.	Provide Project Co's understanding and general approach related to Administration Facility and Offices. - (G.D.) Provide Project Co's concept design for Administration and office spaces and support spaces.
14	Maintenance Management Information System	Schedule 15-2 Article 16.23	G.U.	GA G.D.	D.A.	Provide Project Co's understanding and general approach related to the Maintenance Management Information System (MMIS) - (G.D.) Provide Project Co's concept design for support spaces for the MMIS. - Provide a detailed approach to the Maintenance Management Information System (MMIS)

Operations, Maintenance and Storage Facility items to be addressed in Part B2.10						The Proponent must address the Operations, Maintenance, and Storage Facility (OMSF) design requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 16 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Operations, Maintenance, and Storage Facility**
15	Maintenance and Recovery Vehicles	Schedule 15-2 Article 16.24	G.U.	GA G.D.	S.D.	Provide Project Co's understanding and general approach related to providing maintenance and recovery vehicles - (G.D.) Provide Project Co's a list of the maintenance and recovery vehicles - (S.D.) identify the specific maintenance and recovery vehicles which will be provided by Project Co or if the exact maintenance and recovery vehicles are not known, provide the preliminary draft of the detailed specifications that will be used by Project Co to procure the maintenance and recovery vehicles.

Corrosion Control items to be addressed in Part B2.11						The Proponent must address the requirements for corrosion control at an appropriate level of detail, as set out in or otherwise referenced in Article 17 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Corrosion Control**
1	General Requirements	Schedule 15-2 Article 17.1	G.U. NOTE	D.U.	S.I.	Provide Project Co's understanding of the general requirements for controlling and mitigating corrosion from due to soil and atmospheric conditions. - (NOTE) corrosion control requirements due to the stray currents attributable to the traction electrification system shall be addressed as Part of B3
2	Purpose and Scope	Schedule 15-2 Article 17.2, 17.3	G.U.	G.A.	S.I.	Provide Project Co's understanding and approach to the corrosion control design efforts needed to achieve the design life of the LRT System components and to other non-LRT installations - Describe the program for measuring existing soil and atmospheric conditions before commencing design work or construction work.
3	Interfaces, Expansion, and Special Design Provisions	Schedule 15-2 Article 17.4, 17.5, 17.6, 17.8	G.U.	S.I.	S.I.	Provide Project Co's understanding of the Corrosion Control Engineer's role in the design and review of the design for the other LRT systems and design review for non-LRT installations with respect to soil and atmospheric conditions.
4	Soil Corrosion Prevention Systems	Schedule 15-2 Article 17.11 & 17.12	G.U.	D.U.	S.I.	Provide Project Co's understanding of the issues and approach related to preventing corrosion due to soil conditions or surface contamination from deicing chemicals. - Based on provided geotechnical data identify areas of concern and approach to addressing corrosion issues due to soil conditions as well as surface contamination conditions related to the use of deicing chemicals on or adjacent to the Stage 1 LRT Project. - Provide Project Co's approach to collecting data on soils conditions prior to Phase 1 in order to include the results in the Phase 1 design. - Identify the palette of materials that will be used by Project Co on the Stage 1 LRT Project to address soil conditions and surface contamination conditions . - Identify the palette of materials that will be avoided by Project Co on the Stage 1 LRT Project due to soil conditions and surface contamination conditions . - identify the approach to paving materials and concrete materials to ensure resistance to soil conditions and surface contamination conditions
5	Atmospheric Corrosion Prevention Systems	Schedule 15-2 Article 17.13 and 17.14	G.A.	D.A.	S.I.	Provide Project Co's understanding of the issues and approach related to preventing corrosion due to Atmospheric conditions. - Based on available information about air quality identify areas of concern and approach to addressing corrosion issues due to atmospheric conditions. - Provide Project Co's approach to collecting data on atmospheric conditions prior to Phase 1 in order to include the results in the Phase 1 design. - Identify the palette of materials that will be used by Project Co on the Stage 1 LRT Project to address atmospheric conditions. - Identify the palette of materials that will be avoided by Project Co on the Stage 1 LRT Project due to atmospheric conditions. - Identify coating and other treatments that will be used for elements such as OCS poles and anchorages, architectural installations, and structural installations.

Fire/Life Safety items to be addressed in Part B2.12						The Proponent must address the Fire/Life Safety requirements at an appropriate level of detail, as set out in or otherwise referenced in Article 20 of Schedule 15-2 of the Project Agreement, and shall include the following:
Sub-item	**Sub-item description**	**Primary reference**	**DPM #1**	**DPM #2**	**DPM #3**	**Proposal Submission for Basis of Design - Fire/Life Safety**
1	General Requirements	Schedule 15-2 Article 20.1	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to complying with of the general FLS requirements during the design, construction, and operations& maintenance phases of the Project.
2	LRT Stop Facilities	Schedule 15-2 Article 20.2	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to complying with of the FLS requirements for LRT Stops during the design and construction process - Identify any LRT Stops that Project Co will design and construct which will require the design to comply with the open or enclosed station requirements of NFPA-130
3	Trackway Facilities	Schedule 15-2 Article 20.3	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to complying with of the FLS requirements for the trackway during the design and construction process - Identify any areas of the trackway that Project Co will design and construct which will require additional measures to meet the requirements for emergency access
4	Vehicle Yard and Maintenance Facilities	Schedule 15-2 Article 20.4	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to complying with of the FLS requirements for the yard and maintenance facilities during the design and construction process - Provide Project Co's approach to ensuring adequate clearances between personnel, wayside elements and the LRT vehicles for all exterior trackage in the OMSF - Identify the key FLS issues related to the maintenance facilities and Project Co's approach to those issues.
5	System Fire/Life Safety Procedures	Schedule 15-2 Article 20.5	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to providing the FLS procedures for the O&M phase of the Project. - Provide Project Co's approach incorporating the F/LS procedures into the appropriate O&M Program. - Provide Project Co's approach to establishing emergency procedures with emergency responders.
6	Communications	Schedule 15-2 Article 20.6	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to complying/incorporating the FLS requirements into the design and construction of the communication/ITS elements of the Project.
7	Central Control Facilities	Schedule 15-2 Article 20.7	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to complying/incorporating the FLS requirements into the design and construction of the Central Control Facility.
8	Inspection, Maintenance, and Training	Schedule 15-2 Article 20.8	G.U.	G.A.	S.I.	Provide Project Co's general understanding and approach to complying with the FLS requirements for inspection, maintenance, and training into the design, construction, and O&M phases of the Project.