

APPENDIX

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ENVISION BASELINE
PERFORMANCE
ASSESSMENT REPORT



MEMO

TO: VINIL REDDY, VANCOUVER FRASER PORT AUTHORITY

FROM: Nicole Montgomery, WSP Canada Inc.

SUBJECT: FSPL Transportation Improvements - Envision Feasibility Study

DATE: December 18, 2020

INTRODUCTION

WSP Canada Inc (WSP) was retained by the Vancouver Fraser Port Authority (VFPA) to provide engineering design services for the new roadway alignment at the Fraser Surrey Ports Land (FSPL) Transportation Improvements Project as part of the Greater Vancouver Gateway 2030 program. As part of these services, we conducted an Envision V3 Feasibility Study, this memo summarizes the preliminary findings of the study. Should you decide to pursue Envision V3 certification, this work will guide the next steps, and should be reviewed and updated at each major design milestone.

RESULTS

SUMMARY

The study shows the project in its current form (30% design stage) would achieve an Envision V3 score of 11.6%. This score is insufficient for obtaining Envision certification. This result is not surprising since the project is not explicitly pursuing sustainability goals related to Envision V3.

If the VFPA decides to target Envision V3 certification, design, construction, and/or operational changes aimed at achieving particular credit requirements could be implemented into the project. Based on our assessment, Gold level certification is likely achievable if the VFPA implements most of the recommended actions to achieve the Stretch Target points.

Incorporating all the Stretch Target points would achieve an additional Envision score of 39.3%, bringing the total project score to an estimated 50.9%. This score achievement is technically within the Platinum threshold. However, we recommend targeting Gold certification since the estimated combined score is too close minimum Platinum threshold and the project would not likely not have sufficient buffer of points to successfully achieve a Platinum award. The additional effort and required decisions to pursue the Stretch Target points have been identified in the Envision Scorecard in Appendix A.



ASSESSMENT

The feasibility study assessed the current project design and planned construction and operational performance against the credit requirements outlined in the Envision V3 rating system. Individual credits and achievement levels are classified in the following two ways:

- **Feasible Targets:** Credits that can be achieved by the current proposed project design, construction, and operational plans; and
- **Stretch Targets:** Credits that are likely feasible but must to be additionally incorporated into the project plan.

All other credits and/or points are considered not feasible for the project parameters due to high associated costs or technical limitations.

Please refer to the attached Envision Scorecard for the assessment on a credit-by-credit basis. **Figure 1** and **Figure 2** below summarize the results.

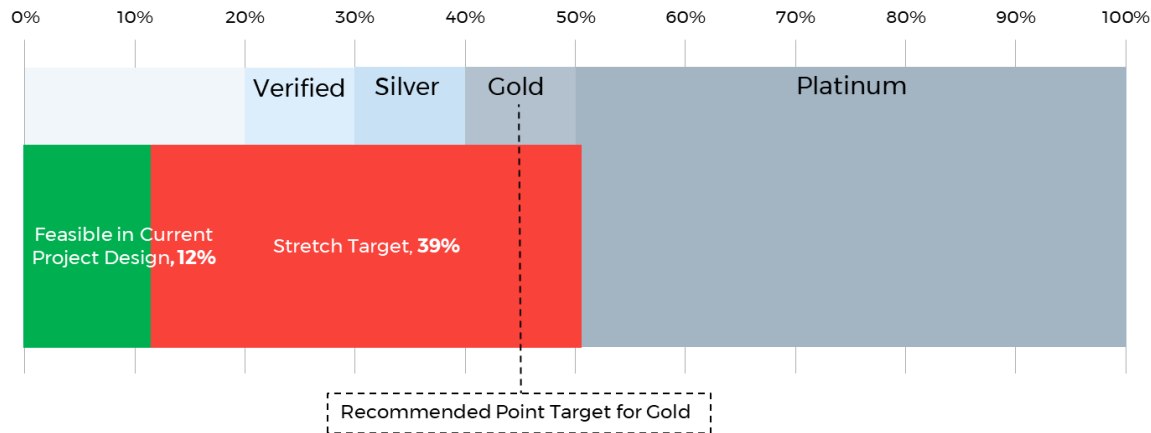


Figure 1: Feasible and Stretch Target Envision Award Levels

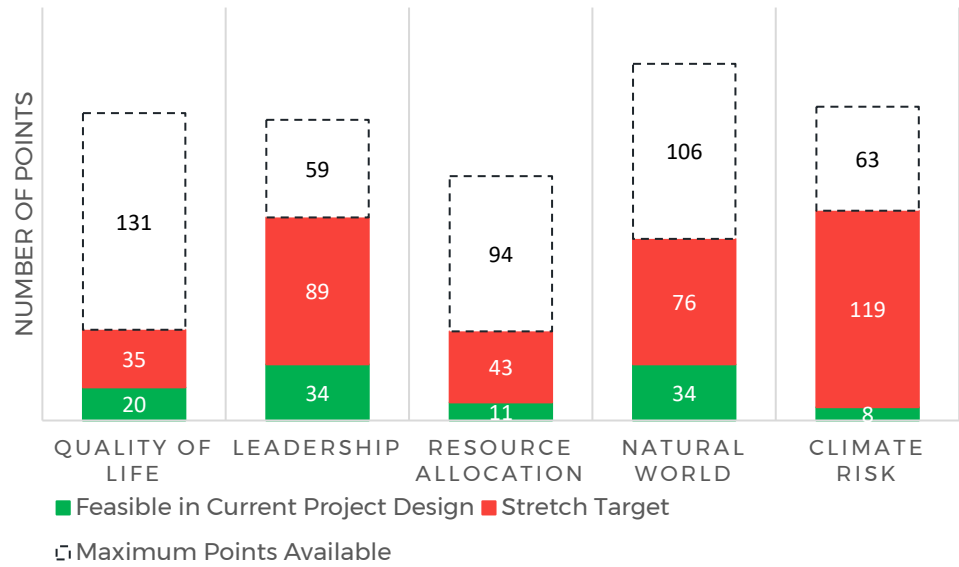


Figure 2: Targeted Points by Credit Category

NEXT STEPS

We recommend the VFPA validate whether the underlying assumptions behind the Envision V3 scorecard in Appendix A are accurate and representative of the vision VFPA has for the project. These assumptions can be found in the comments section of the Scorecard.

The decision to pursue Envision V3 at any certification level should occur prior to the next design phase, and if any Envision certification level is pursued, the services of an experienced Envision Sustainability Professional should be retained to establish a certification strategy that is aligned with the project’s goals, as well as the VFPA’s overall goals.

Certain Envision credits require management processes, design requirements, design deliverables, construction specifications, stakeholder engagement, etc. As such, choosing to pursue Envision at a later stage in the project may result in a lost opportunity to achieve certain credits and/or certain levels of achievement. Similarly, other credit requirements must be included in the design drawings and deliverables, if not instructed to, the project team will not orientate and coordinate their deliverables to satisfy specific Envision requirements.

The WSP Climate Change, Sustainability and Resilience Team can support the pursuit of achieving the chosen Envision certification level. If desired, WSP can provide a proposal to outline our services.

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15 December 2020

Date

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15 December 2020

Date

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Attachments:

- Appendix A: Envision Scorecard
- Appendix B: Methodology
- Appendix C: Technical Workshop Dates and Attendance



APPENDIX A SCORECARD



ENVISION V3 SCORECARD
Vancouver Fraser Port Authority
Fraser Surrey Port Lands

Potential Envision rating of the current design: **11.6%**

Potential Envision rating if all the *stretch* targets were incorporated into the project: **39.3%**

Feasible in Current Project Design	Stretch Target	Maximum Points Available
107	362	922

Verified: 20-29%	Silver: 30-39%	Gold: 40-49%	Platinum: >50%
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20	35	186
2	3	26
12	0	20
0	10	14
0	0	12

QUALITY OF LIFE	COMMENTS
QL1.1 Improve Community Quality of Life	<p>2 points are achievable through the current project plan as the VFPA's stakeholder engagement process communicates community issues in relation to the project's vision and goals.</p> <p>Stretch target: To achieve an additional 3 points, a project-specific <u>Social Impact Assessment</u> is required to evaluate the positive and negative social impacts of the project on the local affected community. Furthermore, documentation that the community was meaningfully engaged and that the outcomes of the engagement resulted in the incorporation of community input during planning and design process is required.</p>
QL1.2 Enhance Public Health & Safety	<p>12 points are currently achievable as the project exceeds the minimum local health and safety laws and regulations, and provides safety improvements to the immediate surroundings and host communities.</p>
QL1.3 Improve Construction Safety	<p>The intent of this credit is to enhance public and worker safety during the project's construction phase. Since the construction-related health and safety related plans, measures, and metrics have yet to be developed by the owner, 0 points are achievable in the current project plan.</p> <p>Stretch Target: To achieve 2 points, the project must adopt the following:</p> <ul style="list-style-type: none"> - A proactive safety rewards program that focuses on root cause and corrective actions rather than disciplinary and financial penalties; - A "lessons learned" report developed by the Contractor; and - Safety commitments as a core value for all members of the project team. <p>It is understood that the VFPA would typically require commitment by all team members to monitor safety, and that 2 points are likely easily achievable if the above requirements are incorporated into the procurement documents that will form the contractor's commitments throughout construction.</p> <p>To achieve an additional 3 points, the VFPA must mandate that the Contractor establish minimum training requirements for health and safety programs and implement safety and/or security competency training for all field personnel in addition to implementing all the measures described above.</p> <p>To achieve an additional 5 points (for a total of 8 points), the VFPA must mandate that the Contractor develop a site specific project security plan in addition to implementing all the measures described above.</p> <p>All these requirements can be added through procurement documents that will form the contractor's commitment throughout construction.</p>
QL1.4 Minimize Noise and Vibration	<p>This credit rewards projects that minimize noise and vibrations during operations to maintain and improve community livability. It is our understanding that a noise and vibration assessment is not part of the current project scope and would likely be limiting with regard to the project design.</p>



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107	362	922	Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%
0	10	12	<p>QL1.5 Light Pollution</p> <p>The intent of this credit is to reduce backlight, uplight, and glare without compromising site safety during operations. The project's current lighting design-lighting requirements for industrial zones and does not include measure to minimize light pollution. Thus, 0 points are achievable in the current project design.</p> <p>Stretch Target: To achieve 10 points for this credit, the project must implement backlight, uplight, and glare (BUG) requirements according to the IES BUG rating system. A <u>Lighting Glare Study</u> should be conducted to confirm if the project can meet the credit requirements.</p>
0	4	8	<p>QL1.6 Minimize Construction Impacts</p> <p>The intent of this credit is to minimize or eliminate temporary inconveniences associated with construction and points are awarded according to the extent of issues addressed through construction management plans. Although the project has a draft <u>Construction Environmental Managment Plan</u>, it does not sufficiently address the following construction impacts: noise, safety/wayfinding, access/mobility, and lighting.</p> <p>Stretch target : 4 points could be achievable if the CEMP is updated to include mitigation measures to minimize or eliminate the temporary inconveniences associated with construction, which special considerations for safety and wayfinding for vehicles, access to amenities, and lighting requirements. It is our understanding that the CEMP will be informed by stakeholder engagement also and feedback mechanisms. These requirements would need to be integrated in the construction specifications.</p>
3	0	14	<p>QL2.1 Improve Community Mobility and Access</p> <p>The project is consistent with local transportation plans, stakeholder and community inputs on mobility and access is available, and the project addresses congestion and safety issues. This is sufficient to meet 3 points under this credit.</p>
0	0	16	<p>QL2.2 Encourage Sustainable Transportation</p> <p>The intent of this credit is to expand accessibility to sustainable transportation choices such as active, shared, and/or mass transportation. Since the project site is not accessible to the public due to security reasons, the project does not provide access to active, shared or mass transportation options. As such, 0 points are achievable for this credit under the current project design and there is likely little to no opportunity for additional points.</p>
1	0	14	<p>QL2.3 Improve Access and Wayfinding</p> <p>The intent of this credit is to create safe and appropriate access in and around the project site in a way that integrates the project with its surroundings. It is our understanding that the current project design will include effective access and egress routes for emergency personnel.</p> <p>Although the current project includes the implementation of clear safety and wayfinding signage, additional points are likely not achievable due to the limited ability of the project to integrate into the surrounding community.</p>



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107	362	922	Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%
0	3	18	<p>QL3.1 Advance Equity and Social Justice</p> <p>The intent of this credit is to ensure that equity and social justice are fundamental considerations within the project's processes and decision making. Although the VFPA is currently conducting extensive engagement efforts with the Indigenous communities to assess the impacts to sovereign peoples, the project does not currently meet the minimum credit requirements as an extensive social impact assessment has not been completed and it is not yet clear if all key members of the project team have made commitments to equity and social justice.</p> <p>Stretch Target: To achieve 3 points, the VFPA must complete a <u>Social Impact Assessment</u> on the communities affected by the project to identify the direct and indirect impacts of the projects on the community. The assessment must consider the demographic data, gender equity, health data, income rate, education and level of historic infrastructure investment in the communities in question. Furthermore, all key members of the project team (owner, design team, and Contractor) must have corporate commitments related to non-discrimination, diversity and inclusion, and pay equity.</p>
2	5	18	<p>QL3.2 Preserve Historic and Cultural Character</p> <p>2 points are achievable in the current project design as it is our understanding that the project team has completed an Archeological Overview Assessment (AOA) which communicates collaboration with the community and local agencies to identify historic and cultural resources, outlines strategies to protect and document these resources.</p> <p>Stretch Target: The project team meets part of the credit requirements because they have already used historic and cultural resources beyond registries to identify important parts of the community culture. To meet the full credit requirements, the project team must work with stakeholders to develop a sensitive design and approach.</p>
0	0	14	<p>QL3.3 Enhance View & Local Character</p> <p>This credit rewards projects that preserve or enhance the physical, natural, and/or community character of the project site and its surroundings. 0 points are currently achievable as the project design does not include features to preserve or enhance view and local character.</p> <p>There is likely little to no opportunity for points because of the industrial nature of the site.</p>
NA	-	NA	<p>QL3.4 Enhance Public Space & Amenities</p> <p>The intent of this credit is to improve publicly accessible spaces and amenities to improve community livability and quality of life. This credit is not applicable since the project site is not publicly accessible.</p>
-	-	10	<p>QL0.0 Innovate or Exceed Credit Requirements</p> <p>The intent of this credit is to reward exceptional performance beyond the expectations of the Envision V3 system and application of innovative methods that advance state-of-the-art sustainable infrastructure. The ISI typically awards 1-2 points for each innovative strategy, for a maximum of 10 points. For example, a project may earn bonus points for implementing community education programs to foster public awareness of the functions and benefits of the project.</p>



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Feasible in Current Project Design	Stretch Target	Maximum Points Available
107	362	922
34	89	182

LEADERSHIP	
<p>0 18 18</p> <p>LD1.1 Provide Effective Leadership & Commitment</p>	<p>The intent of this credit is to encourage the project team to develop project sustainability goals. 0 points are currently targeted because it is our understanding that the project team has yet to create defined social, economic, and environmental commitments for the project.</p> <p>Stretch Target: 2 points may be achievable if the entire project team (VFPA, designers, and contractors) articulates commitments to address the social, environmental, and economic aspects of the project. An additional 3 points, for a total of 5 points, may be achievable with the development of a <u>Sustainability Management Policy</u>. An additional 7 points, for a total of 15 points, may be achievable if the project team periodically revisits the sustainability commitments throughout project delivery. The maximum credit points may be achievable if the entire project team has organizational commitments to sustainability.</p>
<p>0 18 18</p> <p>LD1.2 Foster Collaboration & Teamwork</p>	<p>The intent of this credit is to encourage the interdisciplinary collaboration and teamwork to holistically define and enhance sustainability. 0 points are currently targeted because it is our understanding that the project team has yet to define sustainability goals for the project.</p> <p>Stretch Target: 2 points may be achievable if the project team hosts a interdisciplinary collaborative kick off meeting to define sustainability goals early on. An additional 3 points, for a total of 5 points, may be achievable if performance can be attributed to the project's interdisciplinary collaboration. An additional 7 points, for a total of 15 points, may be achievable if the project team periodically meets to collaborate throughout project delivery. The maximum credit points may be achievable if construction, operations and maintenance representatives were included in the integrated design process.</p>
<p>6 3 18</p> <p>LD1.3 Provide for Stakeholder Involvement</p>	<p>6 points are currently feasible since the VFPA has established a comprehensive engagement, and communication plan with all relevant stakeholders. The project manager is directly involved with stakeholders and stakeholder feedback is incorporated in the project definition, and lead members of the project team (e.g. the FSPL project manager) work directly with stakeholders to understand their needs.</p> <p>Stretch Target: 3 additional points, for a total of 9 points, may be achievable if the VFPA incorporated a system to ensure that all stakeholder feedback is equitably treated, and if key stakeholder feedback was incorporated into the project.</p>
<p>0 3 18</p> <p>LD1.4 Pursue Biproduct Synergies</p>	<p>The credit rewards project teams for working with external groups to find beneficial use of waste products, excess resources, or capacity. 0 points are currently achievable since it is our understanding that the current project design does not include and local waste materials.</p> <p>Stretch Target: 3 points are achievable if the project team conducts an <u>assessment of the available of local access resources</u> and identifies candidates for by-product synergies or reuse.</p>



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Feasible in Current Project Design	Stretch Target	Maximum Points Available	
107	362	922	Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%
0	18	18	<p>LD2.1 Establish a Sustainability Management Plan</p> <p>This credit rewards points to projects that have created a <u>Sustainability Management Plan</u> that can manage the scope, scale, and complexity of the project. 0 points are currently achievable since it is our understanding that the creation of a sustainability management plan is not planned.</p> <p>Stretch Target: Up to 18 points may be achievable if the project addresses there roles and responsibilities of key team members related to sustainability, enacts a sustainability management plan comprised of processes, objectives, targets, revisiting the sustainability management plan and making the plan adaptable and flexible. Higher levels of achievement for this credit should be relatively easy to obtain.</p>
4	0	16	<p>LD2.2 Plan for Sustainable Communities</p> <p>The intent of this credit is to incorporate sustainable principles into the project selection in efforts to select and identify the most sustainable project for the community. 4 points are currently feasible as the Parsons Options Analysis incorporated vehicular travel time (which has related health and greenhouse gas emissions indicators) was utilized as a metric to evaluate project options.</p>
2	10	12	<p>LD2.3 Plan for Long-Term Monitoring & Maintenance</p> <p>2 points are feasible as the current asset management plan will identify strategies to reduce ongoing operational impacts (e.g., maintenance and repair considerations).</p> <p>Stretch target: An additional 3 points, for a total of 5 points, may be achievable if a long-term monitoring and maintenance plan is developed and shared with the operational staff. An additional 3 points, for a total of 8 points, may be achievable if sufficient resources allocated for the long-term monitoring and maintenance of the project, training of operation and maintenance staff. An additional 4 points, for a total of 12 may be achievable if a schedule is implemented to periodically re-evaluate the maintenance plan based on the results of monitored data.</p>
2	6	14	<p>LD2.4 Plan for End of Life</p> <p>2 points are feasible as the current asset management plan will identify strategies to reduce ongoing operational impacts (e.g., maintenance and repair considerations).</p> <p>Stretch target: An additional 3 points may be achievable if a long term monitoring and maintenance plan is developed and shared with the operational staff.</p>
12	8	20	<p>LD3.1 Stimulate Economic Prosperity & Development</p> <p>12 points are feasible in the current project design because the project creates new jobs during its design, construction and operation, provides new capacity and increased infrastructure quality for business and improves community attractiveness for business.</p> <p>Stretch target: An additional 8 points, for a total of 20 points, may be achievable if the FSPL's projected future impact on future development has factored into changing social, economic, and environmental trends, and if the project causes systemic change in the local economy.</p>



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Feasible in Current Project Design	Stretch Target	Maximum Points Available
107	362	922
0	0	16
7	5	14
1	-	10

Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%	
LD3.2 Develop Local Skills & Capabilities	<p>The intent of this credit is to grow the ability and develop the community workforce by providing opportunities to expand knowledge, skills, and capacity. 0 points are currently achievable since it is not anticipated that the VSPL project will include project specific training programs for local skill development.</p> <p>Stretch Target: 2 points are achievable if the project implements a training project for local skill development which may include designers, contractors, subcontractors, or operators. An additional 2 points, for a total of 4 points, may be achievable if the project also identifies specific skill or capability gaps in the local workforce and creates training programs to target these gaps to improve local capacity.</p>
LD3.3 Conduct a Lifecycle Economic Evaluation	<p>7 points are currently achievable since it is our understanding that the Asset Management Plan will include a detailed <u>Lifecycle Economic Evaluation</u> to identify the financial impacts of the project and will utilize the assessment to compare alternative for at least one major project alternative.</p> <p>Stretch Target: An additional 5 points, for a total of 12 points, are achievable if the social and environmental costs and benefits are identified and quantified in addition to the financial costs and benefits that will be outlined in the Asset Management Plan. An additional completion of a <u>Lifecycle Economic Evaluation</u> to identify the financial impacts of the project. Additional points are achievable if the project conducted a detailed social, financial, and environmental cost benefit analysis and utilize the results to assess alternatives for at least one major design component.</p>
LD0.0 Innovate or Exceed Credit Requirements	<p>The intent of this credit is to reward exceptional performance beyond the expectations of the Envision V3 system and application of innovative methods that advance state-of-the-art sustainable infrastructure. The ISI typically awards 1-2 points for each innovative strategy, for a maximum of 10 points. For example, a project may earn bonus points for providing ongoing public reporting of specific metrics related to the project's environmental performance over the life of the project. As such, we anticipate the project can earn points for being included in the VFPA's annual GreenMarine benchmarking system.</p>



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Verified: 20-29% **Silver:** 30-39% **Gold:** 40-49% **Platinum:** >50%

Feasible in Current Project Design	Stretch Target	Maximum Points Available
107	362	922
11	43	148

RESOURCE ALLOCATION	
<p>0 9 12</p> <p>RA1.1 Support Sustainable Procurement Practices</p>	<p>The intent of this credit is to encourage projects to develop sustainable procurement policies and source materials from manufacturers and suppliers that implement sustainable practices. 0 points are currently targeted since it is our understanding that there is no sustainable procurement policy is planned for this project.</p> <p>Stretch Target: Points are achievable if the project adopts a <u>Sustainable Procurement Policy</u> and ensures that at least 5% of project materials are compliant with the sustainability policy. Additional points are achievable if 15-50% of total materials are compliant with the sustainable policy.</p>
<p>0 9 16</p> <p>RA1.2 Use Recycled Materials</p>	<p>This credit awards points to projects based on the percentage of project materials that are used or recycled. 0 points are currently targeted since it is our understanding that there not currently any recycled content targets for the project.</p> <p>Stretch Target: Points are achievable if the project targets sourcing at least 5% of the total project materials are composed of recycled materials. Additional points are achievable if 15-50% of total materials are composed of recycled materials. 9 points are included as a stretch target, because infrastructure projects can typically easily achieve a recycled content threshold of above 25% with the addition of provisions in the specifications.</p>
<p>NA - NA</p> <p>RA1.3 Reduce Operational Waste</p>	<p>The intent of this credit is to reduce operational waste and divert waste streams from disposal to recycling and reuse. The credit rewards projects based on the percentage of total operational waste diverted from landfills.</p> <p>This credit is not applicable since the project does not generate any operational waste.</p>
<p>0 10 16</p> <p>RA1.4 Reduce Construction Waste</p>	<p>This credit awards points to projects based on the percentage of project construction and demolition waste materials that are diverted from landfills. 0 points are currently targeted since it is our understanding that there currently no construction waste targets for the project.</p> <p>Stretch Target: Points are achievable if the project diverts at least 25% of the total project construction materials from landfills. Additional points are achievable if 50-95% of total materials are composed of recycled materials. 7 points are included as a stretch target, because infrastructure projects can typically easily achieve a construction diversion rate of over 75% with the addition of construction waste targets into the project's procurement documents.</p>
<p>0 4 8</p> <p>RA1.5 Balance Earthwork on Site</p>	<p>This credit awards points to projects based in one of two ways: based on the percentage of excavated material moved onsite or fill brought onsite, or based on the local procurement of the fill and excavated materials. 0 points are currently targeted since it is our understanding that there currently no regional soil procurement targets for the project.</p> <p>Stretch Target: Points are achievable if the project sourced 100% of the fill and excavated materials from sources within 40km of the project sites. 4 points included as a stretch target because infrastructure projects in Vancouver can typically source fill and excavated materials within 16km of the project site with the addition of provisions in the specifications.</p>



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Feasible in Current Project Design	Stretch Target	Maximum Points Available	
107	362	922	
6	6	26	<p>RA2.1 Reduce Operational Energy Consumption</p> <p>The intent of this credit is to conserve energy by reducing the operational energy consumption of the project. The credit rewards projects in accordance to the percentage of operational energy reduced compared to a baseline (i.e. industry standard). The current project design relies solely on electricity to meet its energy demands which include street lighting, traffic signals, cameras, gates, and space conditioning for the kiosk area. The current project design will include LED street lights, controlled via photocells, instead of the industry standard of timed high pressure sodium fixtures. As such, according to the electrical team, the current design likely achieves a 10% reduction in overall energy consumption.</p> <p>Stretch target: The project may achieve up to a 30% reduction in overall energy consumption through the implementation of additional minor additional energy conservation measures. Note that additional energy calculations must be completed to confirm the total energy consumption and percentage reductions that can be anticipated.</p>
0	4	12	<p>RA2.2 Reduce Construction Energy Consumption</p> <p>This credit awards points to projects that identify and implement energy conservation measures during construction. 0 points are currently feasible as it is our understanding that there are no construction energy reduction targets planned for the project.</p> <p>Stretch Target: 4 points are included as stretch targets because it is typically feasible for infrastructure projects to identify energy conservation measures during construction and mandate that the contractor implement at least 1 conservation measure via contract provisions at little to no additional capital cost.</p>
0	0	24	<p>RA2.3 Use Renewable Energy</p> <p>This credit awards points to projects based on the percentage of the operational energy demand that is met through renewable energy sources. 0 points are currently targeted since it is our understanding that there currently no renewable energy targets for the project.</p> <p>Stretch Target: Points are achievable if the project diverts at least 5% of the project's total operational energy demand via renewable sources. No points are currently included in the stretch target as it is our understanding that there is little opportunity to include renewable energy sources on site, and renewable energy credits would likely be costly.</p>
0	0	14	<p>RA2.4 Commission & Monitor Energy Systems</p> <p>The intent of this credit is to extend the useful life of the project by commissioning and monitoring energy systems. Despite the fact that commissioning will be completed at the end of construction for some of the energy consumption systems (namely lighting), 0 points are currently feasible because the project design does not include equipment to allow for monitoring of energy consumption during the operational phase.</p> <p>Stretch Target: Additional points are achievable if at least 50% of the energy systems are commissioned post construction, and if monitoring capabilities are incorporated into the project design for at least 50% of the project's energy use. 0 points are included as stretch targets because it appears unlikely that the project would invest in energy monitoring given the limited project lifespan.</p>



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5	-	12	<p>RA3.1 Preserve Water Resources</p> <p>The intent of this credit is to identify and reduce the negative impacts on water resources. 5 points are currently feasible because a <u>Watershed Assessment</u> is planned for the project, which will assess the project's impact on nearby water bodies and identify mitigation measures to minimize negative impacts. Furthermore, the oil water separators part of the overall storm water management strategy will improve water quality in the watershed compared to the no project alternative.</p> <p>Stretch Target: 2 additional points may be achievable if the project's various environmental studies can demonstrate that the project will have a net zero impact on groundwater and surface water. Maximum credit points are likely not achievable because they require the project be part of a regional plan intended to improve the watershed and that the project provides net positive improvements to the watershed.</p>
NA	-	NA	<p>RA3.2 Reduce Operational Water Consumption</p> <p>The intent of the credit is to reduce overall water consumption and instead encourage the use of greywater, recycled water, and storm water to meet water needs. The credit rewards projects based on the percentage of total potable water reduced as compared to a baseline (i.e. industry standard).</p> <p>This credit is not applicable since the project does not consume water during the operational phase.</p>
0	1	8	<p>RA3.3 Reduce Construction Water Consumption</p> <p>This credit awards points to projects that identify and implement water conservation measures during construction. 0 points are currently feasible as it is our understanding that there are no construction water reduction targets planned for the project.</p> <p>Stretch Target: 1 point is included as a stretch target because it is typically feasible for infrastructure projects to identify water conservation measures during construction and mandate that the contractor implement at least 1 conservation measure via contract provisions at little to no additional capital cost.</p>
NA	-	NA	<p>RA3.4 Monitor Water Systems</p> <p>The intent of the credit is to ameliorate water performance by including monitoring capabilities.</p> <p>This credit is not applicable since the project does not consume water during the operational phase.</p>
-	-	10	<p>RA0.0 Innovate or Exceed Credit Requirements</p> <p>The intent of this credit is to reward exceptional performance beyond the expectations of the Envision V3 system and application of innovative methods that advance state-of-the-art sustainable infrastructure. The ISI typically awards 1-2 points for each innovative strategy, for a maximum of 10 points. For example, a project may earn bonus points for tracking a project's greenhouse gas emissions during construction.</p>



ENVISION V3 SCORECARD
Vancouver Fraser Port Authority
Fraser Surrey Port Lands

Potential Envision rating of the current design: **11.6%**
 Potential Envision rating if all the *stretch* targets were incorporated into the project: **39.3%**

Verified: 20-29% **Silver:** 30-39% **Gold:** 40-49% **Platinum:** >50%

Feasible in Current Project Design	Stretch Target	Maximum Points Available
107	362	922
34	76	216
2	0	22
2	8	20
NA	-	NA
8	4	24

NATURAL WORLD	
NW1.1 Preserve Sites of High Ecological Value	<p>The intent of the credit is to avoid placing the project and temporary works on sites that have been identified as being of high ecological value. 2 points are currently feasible as the project team identified areas of high ecological value and devised a mitigation plan to fully compensate offsite for the project's impacts on the sites. It is our understanding the mitigation will take part off site.</p> <p>Stretch Target: 4 additional points may be achieved if the mitigation measures occurred on site or on an adjacent contiguous parcel of equal or higher ecological value. These requirements could be added in the construction specification.</p>
NW1.2 Provide Wetland & Surface Water Buffers	<p>The credit rewards projects that protect, enhance and restore wetlands and waterbodies by implementing protective natural buffer zones, vegetation and soil-protection zones around wetlands and surface waters.</p> <p>The project team has identified nearby wetlands and identified the appropriate type and width of buffer zones to protect at least 90% of wetlands and surface waters on site, with the remaining 10% or less protected by engineering controls. The aim is to slow surface runoff, trap sediments, pesticides and other pollutants.</p> <p>Stretch Target : For an additional 3 points, the project must provide a buffer of managed vegetated zones (including grass) around all wetlands and surface waters. For an additional 8 points, the project must provide a mixed buffer of managed vegetation and natural zones around all wetlands and surface waters. Natural areas are not managed and consist of natural habitat. These requirements would need to be integrated in the design of the project and into the specifications.</p>
NW1.3 Preserve Prime Farmland	<p>The intent of this credit is to protect soils designated as prime farmland, unique farmland or farmland of importance. The credit rewards projects based on the percentage of total farmland avoided or preserved during development.</p> <p>This credit is not applicable since the project site does not contain any prime farmland, unique farmland or farmland of importance and no seriously considered siting options contained farmland.</p>
NW1.4 Preserve Undeveloped Land	<p>The credit rewards project that conserve undeveloped land by being located on previously developed sites. Points are allotted according to the percentage of project development on developed land. 8 points are currently feasible because over 50% of the project area is conservatively estimated to be located previously developed land.</p> <p>Stretch Target: Depending on the final design, a total of 12 points may be achievable by siting at least 75% of the project area on previously developed land.</p>



ENVISION V3 SCORECARD
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Feasible in Current Project Design	Stretch Target	Maximum Points Available	
107	362	922	Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%
13	9	22	<p>NW2.1 Reclaim Brownfields</p> <p>This credit rewards project development on brownfields (contaminated soils) and allots points based on the extent and depth of the decontamination of the soil. 13 points are currently achievable since the project is sited on three active brownfields areas and it is anticipated that capping and remediation strategies will be used to manage the contamination.</p> <p>Stretch Target: A more thorough decontamination process would be required for a higher level of achievement. The strategy and extent of the decontamination of the brownfields will determine the level of achievement: minimal capping for 13 points, passive remediation for 16 points, active remediation for 19 points and a complete remediation for 22 points. The conclusions of the upcoming Environmental Site Assessment Phase II will influence the recommended strategy and depth of the decontamination process. It is possible a method of decontamination could be already specified in the tenants' leases or could be later negotiated by the owner. The selected strategy would need to be specified in construction specifications.</p>
2	7	24	<p>NW2.2 Manage Stormwater</p> <p>The intent of the credit is to minimize the impact of development on stormwater runoff quantity, rate and quality and rewards achievement based on the degree to which the project infiltrates, evapotranspires reuses or treats storm water, while not exceeding specific rates or quantity of runoff targets. Design requirements from the City of Surrey follow a different methodology and would need to be compared with the credit requirements. 2 points are achievable since it is likely the City of Surrey's requirements meet the credit requirements for 2 points (to detain and treat 100% of the 85th percentile local 24-hour event and to not exceed rate or quantity of runoff for the 2 year 24-hour rainfall event relative to prior existing conditions).</p> <p>Note that achievement of the 2 points assumed that an <u>Erosion, Sedimentation and Pollutant control Plan</u> will be implemented for construction activities.</p> <p>Stretch Target: For additional points, the stormwater management system must be capable of treating and detaining larger storm events.</p>
0	12	12	<p>NW2.3 Reduce Pesticide & Fertilizer Impacts</p> <p>This credit rewards projects that reduce non-point-source pollution by reducing the quantity, and toxicity of pesticides and fertilizers. 0 points are currently feasible since the project will not include the addition maintenance of landscaping.</p> <p>Stretch Target: 12 points are easily achievable by mandating that pesticides and fertilizers are not used on the project. This mandate could be integrated in the construction specifications.</p>



ENVISION V3 SCORECARD
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Feasible in Current Project Design	Stretch Target	Maximum Points Available
107	362	922
5	15	20
2	3	18
0	3	20

Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%	
NW2.4 Protect Surface & Groundwater Quality	<p>The intent of the credit is to preserve water resources by preventing pollutants from containing surface and ground water and monitoring impacts during construction and operations.</p> <p>5 points are currently achievable since the project team determined the potential impacts to surface water and groundwater quality, paid attention not to create new pathways for water contamination and will establish a spill and leak prevention and response plan. Based on the potential impacts identified, the project team has devised ways to reduce the risk of quality degradation of water.</p> <p>Stretch Target: 9 points may be achievable if the project includes additional measures to reduce the risk of surface and groundwater contamination during construction and operations. To achieve the maximum points available, the project must also eliminate all hazardous and polluting substances on site, for instance using low VOC paints for the road or low mercury lighting, as well as the monitoring of water quality before and after the project to demonstrate water quality improvement beyond existing conditions. These requirements could be included in the design of the project and added to the construction specifications.</p>
NW3.1 Enhance Functional Habitats	<p>This credit aims at preserving and improving the functionality of terrestrial habitat and awards points based on the number of habitat functions addressed in order to preserve or enhance the net area and quality of functional habitat. 2 points are currently achievable as Environmental Management Plan identifies terrestrial habitats on the project development and mitigation measures to maintain habitat functions (quantity, quality and connectivity).</p> <p>Stretch Target: For additional points, the project would need to enhance one (3 points), two (7 points), or three (13 points) ecosystem functions (quantity, quality, and/or connectivity) relative to existing conditions. To achieve the maximum credit points, 18 points, developed land would need to be returned to natural habitat or set aside for permanent conservation and protection, in addition to all requirements noted above.</p> <p>Note that enhancing quantity and connectivity may be challenging given the project boundary, so a stretch target of 3 points is deemed reasonable.</p>
NW3.2 Enhance Wetland & Surface Water Functions	<p>The intent of this credit is to maintain and restore ecosystem functions in wetlands and surface waters, and awards points based on the number of functions maintained and restored. 0 points are currently achievable as the infilling of the ditch on the project site is expected to negatively impact ecosystem quantity.</p> <p>Stretch Target: 3 points may be achievable, mitigation measures must be implemented to maintain net aquatic habitat quality and quantity and follow a hierarchy that prioritizes avoidance, minimization, restoration, and compensation. The project must also restore water quality, restore hydrologic connection, or reduce sedimentation.</p>



ENVISION V3 SCORECARD
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Feasible in Current Project Design	Stretch Target	Maximum Points Available	Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%	
107	362	922		
0	0	14	NW3.3 Maintain Natural Floodplains	The credit intent is to preserve floodplain functions by limiting development in the floodplain and awards points according to the percentage of natural and vegetated areas within the floodplain. 0 points are feasible since the project is located in the 100 year floodplain and does not preserve sufficient (>75%) of vegetated zones within the floodplain.
0	12	12	NW3.4 Control Invasive Species	The intent of this credit is to use appropriate non-invasive species and control or eliminate existing invasive species. Points are awarded depending on the degree to which invasive species have been reduced. 0 points are currently feasible as the project does not include the addition of plantings or landscape maintenance. Stretch Target: 1 point may be achievable if best practices were adopted to avoid introducing invasive species. This would be relatively easily achievable and could be included in construction specifications. An addition point, for a total of 2 points, may be achievable if an <u>Invasive Species Site Assessment</u> is completed to determine the presence of invasive species. Additional points may be achievable for operational efforts to control invasive species.
0	3	8	NW3.5 Protect Soil Health	The intent of this credit is to preserve the composition, structure and function of site soils and awards points according to the degree to which the disruption of soil health has been minimized and restored. 0 points are currently feasible as it is our understanding that soil restoration is not currently planned on the project. Stretch Target: 3 points may be achievable if the project limits the area that is disturbed by development activities and restores 100% of the post-construction vegetated areas disturbed during construction. Higher levels of achievement require soil protection plans and/or policies (4 additional points), the integration of best management practices reviewed or prepared under a certified soil scientist (6 points) and the restoration of all areas disturbed by previous development and planned as vegetated areas (8 additional points). These requirements may be feasible, though it is unlikely they align with the intent and lifespan of the project.
-	-	10	NW0.0 Innovate or Exceed Credit Requirements	The intent of this credit is to reward exceptional performance beyond the expectations of the Envision V3 system and application of innovative methods that advance state-of-the-art sustainable infrastructure. The ISI typically awards 1-2 points for each innovative strategy, for a maximum of 10 points. For example, a project may earn bonus points for calculating new or future floodplain conditions.



ENVISION V3 SCORECARD
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Feasible in Current Project Design	Stretch Target	Maximum Points Available
107	362	922
8	119	190
0	5	20
8	5	26
0	14	18
0	0	16

Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%	
CLIMATE RISK	
CR1.1 Reduce Net Embodied Carbon	<p>This credit requires that a <u>Life Cycle Assessment (LCA)</u> be conducted for the primary materials, >80% of the materials used in the project, and that reductions in net embodied carbon over the project's life cycle are realized through the product selection. Currently, no LCA is included within the project scope.</p> <p>Stretch Target: Implement embodied carbon reduction strategies, and complete a life-cycle assessment showing at least a 5% reduction in embodied carbon over the project life will be achieved. Additional points may be possible if higher reductions in embodied carbon are achieved.</p>
CR1.2 Reduce Greenhouse Gas Emissions	<p>Energy efficient street lighting and decreases in vehicular idling will likely contribute to reducing greenhouse gas emissions by the minimum required 10% compared to a baseline (typically chosen to be the no build alternative or an industry standard design alternative) for 8 points. Note that while the current design likely meets the 10% greenhouse gas (GHG) reduction required to achieve 8 points. A <u>Greenhouse Gas Assessment</u> will be required to confirm the reductions associated with the project.</p> <p>Stretch Target: 5 additional points may be achievable if the project implements further energy and/or greenhouse gas reduction measures to achieve an overall 25% reduction in GHG emissions (e.g. selection energy efficient HVAC equipment and traffic gates). This goal is likely easily achievable if included in the project design criteria.</p>
CR1.3 Reduce Air Pollutant Emissions	<p>The intent of this credit is to reduce the following air pollutant emissions: particulate matter (including dust), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, lead, and volatile organic compounds.</p> <p>The only potential sources of direct air pollutant emissions for the project include:</p> <ol style="list-style-type: none"> 1. Fossil fuel based equipment used to condition the kiosk area (e.g. kerosene space heaters); and 2. Fossil fuel base maintenance equipment. <p>Stretch Target: 14 points are achievable if the project specifies electric equipment for the space conditioning of the kiosk area (e.g. heat pumps) and that electric maintenance equipment.</p>
CR2.1 Avoid Unsuitable Development	<p>This credit rewards projects for minimizing development on site that are prone to hazards (e.g. area prone to liquefaction, floods, coastal surges and erosion).</p> <p>To meet the credit reequipments, an assessment identifying site hazards and the vulnerability of the project and project alternative to siting hazards must be completed. Furthermore, documentation demonstrating the project and siting alternatives were considered in order to minimize exposure to siting hazards as much as practicable are required. We understand that this has not been completed to date, and the opportunity to influence project siting has passed.</p>



ENVISION V3 SCORECARD
Vancouver Fraser Port Authority
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Feasible in Current Project Design	Stretch Target	Maximum Points Available	
107	362	922	Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%
0	20	20	<p>CR2.2 Assess Climate Change Vulnerability</p> <p>The intent of this credit is to develop a comprehensive project specific climate change vulnerability assessment. We understand that a climate change vulnerability study is not currently planned for the project.</p> <p>Stretch Target: 18 points are achievable if a project-specific Climate Risk Assessment is completed to determine climate change threats to the project, the infrastructure, and the community. Note that the Federal Government-funded Climate Lens Assessment can contribute to meeting the credit requirements.</p> <p>An additional 2 points are achievable if the finding of the Climate Risk Assessment are publicly shared within the broader community.</p>
0	11	26	<p>CR2.3 Evaluate Risk and Resilience</p> <p>The intent of this credit is to develop a comprehensive project specific <u>Risk and Resilience Assessment</u>. We understand that a risk and resilience study is not currently planned for the project.</p> <p>Stretch Target: Up to 24 points are achievable if a multihazard risk assessment is completed to identify acute and chronic risks to the project. An additional 2 points are achievable if project team conducts the risk assessment in collaboration with a diverse and integrated team of key stakeholders.</p> <p>Note that the Federal Government-funded Climate Lens Assessment can contribute to meeting part of the credit requirements.</p>
0	20	20	<p>CR2.4 Establish Resilience Goals and Strategies</p> <p>This credit rewards projects that establish resilience goals and increase the resilience of the project and the community. We understand that a <u>Risk and Resilience Assessment</u> and the implementation of resilience design criteria are not currently planned for the project.</p> <p>Stretch Target: 8 points are achievable by developing risk management strategies to minimize the risks identified in the <u>Risk and Resilience Assessment</u> in CR2.3. An additional 6 points (for a total of 14 points) are achievable if stakeholders are involved in developing or reviewing the project's resilience goals. An additional 6 points (for a total of 20 points, are achievable if the project integrates its resilience goals to the larger community's resilience and climate adaptation goals (e.g. the City of Surrey and MetroVancouver's goals).</p> <p>Note that the Federal Government-funded Climate Lens Assessment can contribute to meeting part of the credit requirements.</p>



ENVISION V3 SCORECARD
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Fraser Surrey Port Lands

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 Potential Envision rating if all the *stretch* targets were incorporated into the project: **39.3%**

Feasible in Current Project Design	Stretch Target	Maximum Points Available	
107	362	922	Verified: 20-29% Silver: 30-39% Gold: 40-49% Platinum: >50%
0	26	26	<p>CR2.5 Maximize Resilience</p> <p>The intent of this credit is to design and operate projects to withstand hazards by maximizing durability and resilience. We understand that the completion of a <u>Risk and Resilience Assessment</u> and the implementation of resilience design criteria are not currently planned for the project.</p> <p>Stretch Target: 11 points are achievable with the development of resilience goals to address major risks identified in a <u>Risk and Resilience Assessment</u>. An additional 4 points, for a total of 15 points, are achievable if project team periodically monitors the implementation of the resilience strategies and their efficacy. An additional 5 points, for a total of 20 points is achievable if the project team incorporates resilience strategies into the operations and maintenance of the project. An additional 6 points, for a total of 26 points, is achievable if the benefits of resilience strategies implemented are quantified (e.g. monetary savings from avoided damage and service loss).</p> <p>Note that the Federal Government-funded Climate Lens Assessment can contribute to meeting part of the credit requirements.</p>
0	18	18	<p>CR2.6 Improve Infrastructure Integration</p> <p>This credit rewards project that strengthen the functional integration of connected systems to increase system performance and overall resilience. We understand that none of these are currently within the scope of the project.</p> <p>Stretch Target: 2 points are achievable by increasing internal systems integration through efficiencies, redundancies, or system diversity. 3 additional points, for a total of 5 points, are achievable through the identification of the critical failure points of the system and the reduction of systemic or cascading failures risk. 4 additional points, for a total of 9 points, are achievable by increasing external systems integration. An additional 4 points, for a total of 13 points, are achievable with the integration of infrastructure networks. And the maximum credit points, a total of 18 points, are achievable with the implementation of monitoring systems to improve project performance during operations.</p>
-	-	10	<p>CR0.0 Innovate or Exceed Credit Requirements</p> <p>The intent of this credit is to reward exceptional performance beyond the expectations of the Envision V3 system and application of innovative methods that advance state-of-the-art sustainable infrastructure. The ISI typically awards 1-2 points for each innovative strategy, for a maximum of 10 points. For example, a project may earn bonus points for managing urban heat island effects through significant shading, or SRI requirements for both vertical and horizontal hardscape areas</p>

*This scorecard is intended to serve as a benchmarking tool to assess potential Envision v3 performance. It does not confirm an Envision rating nor guarantee credit compliance. This document is the sole property of WSP and is only to be used for the project listed above. This document is not to be used in any other capacity without the expressed consent of WSP.



APPENDIX B
METHODOLOGY



METHODOLOGY

The purpose of this memorandum is to assess the feasibility of achieving an Envision v3 certification for the VFPA Fraser Surrey Port Lands. A high-level analysis of the project's feasibility of achieving Envision V3 certification was conducted. The methodology for determining whether credits are feasible in the current design, feasible with effort (Stretch Target), not feasible or not applicable comprised of the following steps:

1. Initial screening of the project scope to determine Envision credit applicability and possible levels of achievement;
2. Project management workshop to validate known policies and operations that benefit credit achievement;
3. Technical subgroup workshops to compare current scopes with Envision credit requirements (see Appendix C for a summary of the technical workshops conducted);
4. Data and information analysis to:
5. Determine whether credit requirements can be met by the current scope and design;
6. Identify required efforts to achieve higher levels of achievement; and
7. Identify which certification award level is likely to be achieved by the current design; and
8. Identify the additional effort required to achieve higher certification award levels.

The analysis grouped credits into the following categories:

Table 1 : Analysis categories

Category	Description
Feasible	Credits which can be achieved by the project in its current form
Stretch Target	Credits which require more detailed investigation, owner decisions or other information in order to meet credit requirements. These credits which are feasible but need to be incorporated into the current form.
Not feasible	Credits that are not feasible for the following reasons: — Significant design or policy changes would be required, and these are deemed to be impractical and/or high Cost. This is not an explicit category noted in the attached scorecard,
Not applicable	Credits which are fundamentally not applicable to the project. This is not an explicit category, but has been marked on the scorecard as N/A. Not applicable credits help the overall Envision score of the project by subtracting points from the denominator of the achievement percentage.



APPENDIX C
WORKSHOP SUMMARY



WORKSHOP SUMMARY

Table 2: Summary of the date and attendance of the technical workshops conducted

Workshop name	Date	Attendance
Project lead Workshops	2020-10-14 2020-10-16	Valentino Tjia, Project Lead Mina Papic, Envision Technical Lead Philippe Théault Gauvin, Sustainability Analyst
Infrastructure and Geotechnical Workshops	2020-10-16	Valentino Tjia, Project Lead Shawn Lapain, Geotechnical Engineer Marina Makovetski, Environmental scientist Rob Moore, Water Engineer Lalinda Weerasekara, Geotechnical Engineer Mina Papic, Envision Technical Lead Philippe Théault Gauvin, Sustainability Analyst
Electrical Workshop	2020-11-20	Valentino Tjia, WSP Project Lead Julian Vasquez, Electrical Engineer Mina Papic, Envision Technical Lead Philippe Théault Gauvin, Sustainability Analyst
Asset Management Workshop	2020-11-25	Valentino Tjia, WSP Project Lead Bernadette O'Connor, Asset Management Neil Forrest, Asset Management Mina Papic, Envision Technical Lead Philippe Théault Gauvin, Sustainability Analyst
Environmental Management Workshop	2020-11-26	Valentino Tjia, Project Lead Michael Taylor, Environmental Scientist Mina Papic, Envision Technical Lead Philippe Théault Gauvin, Sustainability Analyst