QUALITY OF LIFE: WELLBEING

QL1.4 Minimize Noise and Vibration

Levels of Achievement

Note: In the table below, please mark selection with an "X" in the "Applicant Selection" row.

Levels	NA	Improved	Enhanced	Superior	Conserving	Restorative
Criteria	NA	A, B	A, B, C	A, B, C, D	A, B, C, D, E	A, B, C, D, E
Applicant Selection					**X**	

Summary

Pending? (Yes/No): __No___

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate whether the level of achievement selection is **pending** future construction phase documentation. Be sure to also clearly indicate this in the credit summary text and evaluation criteria documentation.

If you indicated that this credit is not applicable, explain why and make specific references to supporting documents or sections of supporting documents presented as evidence. If the credit is applicable, use this space to present an executive summary explaining why the selected level of achievement has been chosen for this credit.

The project team seeks a Conserving level of achievement for this credit. The Woodard Avenue Pollution Control Plant Design-Build team conducted a study of the project which included a baseline noise and vibration assessment. Noise impacts, including vibrations as a potential source of noise, expected during the operation of the project were identified. The project team examined a range of strategies that would maintain or reduce overall levels on adjacent neighborhoods and incorporated several into the design. Stakeholders were consulted throughout the process. Target noise levels were adopted and a subsequent analysis of the noise mitigation measures show that the target noise levels would not be exceeded. A noise operating policy is in place for this facility, along with a noise and vibration monitoring program.

In the responses below, the project team references supporting documents by bolding and underlining the file names and providing page numbers, if applicable. Relevant text in the supporting documents is highlighted in yellow. Each document is uploaded to the ISI website as a separate PDF with the file name matching the name used in this coversheet.

Evaluation Criteria and Documentation

Note: State how each criterion was met by the project and to what degree it was met. Make direct reference to supporting documents or sections of supporting documents (e.g., page numbers, headings) to enable the verifier to confirm explanations provided.

A. Has the project team assessed the potential for operational noise impacts on the surrounding community and/or environment?

Yes, the project team assessed the potential for operational noise impacts on surrounding communities. A complete index of all potential noise generating sources, including vibrations as a source of noise, are described in the **Environmental Assessment, Chapter 4: Environmental Consequences and Mitigation (see pages 11-13)**.

Several studies to predict noise and vibration levels that will be present during operations have been conducted. The studies indicate elevated noise levels over the baseline (60 dBA) during operation of the project (65 dBA). Refer to the highlighted excerpts of the **Environmental Assessment, Chapter 4: Environmental Consequences and Mitigation (see pages 11-13, 18, 21, 25, and 27)**. The credentials and qualifications of the individuals who conducted these studies can be found in **Environmental Assessment, Chapter 8: List of Preparers (see pages 56-59)**.

B. To what extent has the project mitigated noise generated as a result of the project?

A full list of potential noise mitigation measures has been included in the **Environmental Assessment, Chapter 4: Environmental Consequences and Mitigation (see pages 18, 21, 25, and 27)**. After a thorough evaluation of all options (**Environmental Assessment, Chapter 4: Environmental Consequences and Mitigation, see pages 28-30)**, the noise and vibration mitigation measures selected include:

- Placing a portion of the noise- and vibration-generating equipment in a soundproofed room within the facility **(see Drawing 001-23450)**;
- Strategically locating other noise and vibration-generating equipment that could not be placed inside the facility as far from the adjacent neighborhoods as possible;
- Including sound barriers (acoustic walls and a tree line) at the project's perimeter **(see Drawing 001-23451)**;
- Adopting the local noise ordinance for commercial zones **(see Commercial Noise Ordinance)** and modifying facility operational guidance to restrict equipment noise at night **(see Noise Operating Policy)**.
- Establishing a noise and vibration monitoring program to ensure the local ordinance is met at all times. **(see Noise and Vibration Monitoring Program, pages 3-10)**.

C. Does the project set or adopt target noise levels?

Yes, the project has adopted a target noise level of 60 dBA for adjacent neighborhoods, as shown in the **Environmental Assessment, Chapter 4: Environmental Consequences and Mitigation (see pages 25-27)**. In addition, as stated in the response for criterion B, the project's owner will adhere to the local **Commercial Noise Ordinance** and implement a **Noise Operating Policy**.

D. Has the project team engaged impacted stakeholders on issues of noise and vibration impacts, mitigation strategies, and target levels?

Yes, the project team engaged stakeholders from the adjacent neighborhoods regarding a range of issues, including operational noise and vibration impacts. Baseline noise and vibration studies were shared during stakeholders' meetings at Alexander High School between October 2017 and December 2018 **(see Stakeholder Meeting Minutes)**. In addition to discussing impacts, the project team described a range of noise and vibration mitigation strategies and asked for feedback/input. One notable outcome was that stakeholders generally liked the idea of acoustic walls around portions of the facility, but they were concerned with the aesthetics. Therefore, a tree line was included to address this concern.

E. To what extent will the project maintain or reduce existing noise levels?

As stated in the response to criterion A, the project team identified the potential for noise impacts (i.e. increases from the 60dBA baseline to 65dBA). A number of mitigation measures were incorporated into the design and operation of the project, including placing of equipment in a soundproofed room, strategically locating outdoor equipment away from adjacent neighborhoods, incorporating acoustic walls and a treeline, adopting the local noise ordinance, and implementing a noise and vibration monitoring program (see documentation noted in criterion B). An analysis of the noise mitigation measures shows that baseline noise levels will be maintained by the project during its operational life **(see Noise Technical Report)**. These levels also correspond to the **Commercial Noise Ordinance**. To ensure noise levels remain at or below the baseline levels, a **Noise and Vibration Monitoring Program (see pages 3-10)** was created.

Table of Contents

Note: Please list all supporting documents for this credit in the spaces provided. Rows may be added if required. If supporting documentation has been assembled as a single PDF, please insert the page within the PDF where the file begins.

Document Title / Name:	Page(s):
Environmental Assessment, Chapter 4: Environmental Consequences and Mitigation	A: 11-13, 18, 21, 25, and 27; B: 18, 21, 25, 27, and 28-30; C: 25-27
Environmental Assessment, Chapter 8: List of Preparers	56-59
Drawing 001-23450	ALL
Drawing 001-23451	ALL
Commercial Noise Ordinance	ALL
Noise Operating Policy	ALL
Noise and Vibration Monitoring Program	3-10
Stakeholder Meeting Minutes	ALL
Noise Technical Report	ALL

Pending Documentation

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate documents that are not currently available but will be provided during the post-construction review in order to demonstrate achievement.

Document Type / Name:	Brief Description:
N/A	N/A

LEADERSHIP: ECONOMY

LD3.1 Stimulate Economic Prosperity and Development

Levels of Achievement

Note: In the table below, please mark selection with an "X" in the "Applicant Selection" row.

Levels	NA	Improved	Enhanced	Superior	Conserving	Restorative
Criteria	NA	A, B	A, B, C	A, B, C, D	A, B, C, D, E	Not Available
Applicant Selection			**X**			

Summary

Pending? (Yes/No): ___No___

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate whether the level of achievement selection is **pending** future construction phase documentation. Be sure to also clearly indicate this in the credit summary text and evaluation criteria documentation.

If you indicated that this credit is not applicable, explain why and make specific references to supporting documents or sections of supporting documents presented as evidence. If the credit is applicable, use this space to present an executive summary explaining why the selected level of achievement has been chosen for this credit.

The project team seeks an Enhanced level of achievement for this credit. From planning to design to construction, the project team focused on improving the economic growth and capacity of the community through the restoration of public transportation assets. The project team also considered how the project's operational relationship to other infrastructure will support long-term economic prosperity by attracting and retaining businesses and enhancing livability.

All of the documents referenced in this coversheet have been consolidated into a single PDF. Page numbers in the Table of Contents reflect the page numbers on the consolidated PDF. Referenced supporting documents are bolded and underlined in the narrative below and relevant text is highlighted in the consolidated PDF.

Evaluation Criteria and Documentation

Note: State how each criterion was met by the project and to what degree it was met. Make direct reference to supporting documents or sections of supporting documents (e.g., page numbers, headings) to enable the verifier to confirm explanations provided.

A. Does the project create a significant number of new jobs during its design, construction, and operation?

Twenty full-time positions were created during project design which lasted for five years. During the five years of construction, 62 full-time jobs were created. Nearly 75% of these positions were filled from the Greater Star City Area (Star City and surrounding suburban communities). The number, type, and duration of direct jobs created during design and construction is described in the document **Job Creation Calculations (see pages 1-2)**. The document also clearly shows the percentage of jobs filled by people who live in the Greater Star City Area.

In addition to direct jobs created during design and construction, the project team estimated the number of direct and indirect jobs that will be created during operations. The **Job Creation Calculations (see page 3)** shows 40 full time

positions, including management positions, drivers, station attendees, and security personnel. As with the jobs created during design and construction, the majority of the full-time operational positions (92%) will be filled by people who live in the Greater Star City Area.

An economic impact analysis using **IMPLAN (see page 4)** determined that indirect employment growth in the retail and commercial sectors will lead to approximately 200 jobs annually in the short term and 750 jobs annually upon completion of the broader regional transit system.

B. Does the project provide new operating capacity for business, industry, or the public?

One of the primary goals of the project team was to improve project sustainability performance through project-wide systems integration. The project is an enhancement and an extension of the existing downtown transit system and will serve as an important connection to future regional transit system expansions. The purpose of this transit project is to strengthen connectivity between downtown activity centers and provide "last mile" service to downtown (see **Purpose and Need Statement, page 5,** an excerpt from the larger Environmental Assessment).

Official community plans directly call for this project and affirm its necessity for long-term economic prosperity and development. The **Star City Community Plan (see pages 6-7, 22, and 45)** discusses the need for this project and its intended outcomes, including economic growth.

The project team has also attached a **Resolution (see page 50)** passed by City Council to proceed with this project and a **Letter from Mayor Mary Johnston (see page 53)** confirming the benefits this project will bring to both residents and businesses.

C. Does the project provide additional access, increase the number of choices, and/or increase the quality of infrastructure services for businesses, industry, or the public?

The project integrates well with the regional bus system. As shown in the **Bus Integration Exhibit (see page 54)**, numerous bus routes intersect with or are proximate to this transit project. In addition, this project was designed to accommodate bicycles, pedestrians, and other transit modes. The project is close to bicycle and pedestrian facilities, including sidewalks, bike routes, and the public bike share system **(see Bicycle Integration Exhibit, page 55).** The **Environmental Assessment (see page 56)** describes how this project will improve quality, safety, and efficiency for pedestrians and cyclists traveling between destinations.

D. Does the project improve community attractiveness for business, industry, or the public by generally improving the socioeconomic conditions of the community?

Not pursued

E. Will the project stimulate economic prosperity and further economic development?

Not pursued

Table of Contents

Note: Please list all supporting documents for this credit in the spaces provided. Rows may be added if required. If supporting documentation has been assembled as a single PDF, please insert the page within the PDF where the file begins.

Pending Documentation

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate documents that are not currently available but will be provided during the post-construction review in order to demonstrate achievement.

Document Type / Name:	Brief Description:
N/A	N/A

RESOURCE ALLOCATION: MATERIALS

RA1.2 Use Recycled Materials

Levels of Achievement

Note: In the table below, please mark selection with an "X" in the "Applicant Selection" row.

Levels	NA	Improved	Enhanced	Superior	Conserving	Restorative
Criteria	NA	A	A	A	A	Not Available
Applicant Selection			**X**			

Summary

Pending? (Yes/No): __Yes__

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate whether the level of achievement selection is **pending** future construction phase documentation. Be sure to also clearly indicate this in the credit summary text and evaluation criteria documentation.

If you indicated that this credit is not applicable, explain why and make specific references to supporting documents or sections of supporting documents presented as evidence. If the credit is applicable, use this space to present an executive summary explaining why the selected level of achievement has been chosen for this credit.

The project team seeks an Enhanced level of achievement for this credit. Based on cost calculations, at least 17% of project materials will contain recycled content. This credit is marked "Pending" as documentation from contractors, including expenditures, product inventory, and calculations, will be provided during the post-construction review phase to confirm the target of 17% recycled content was met on the project.

The project team consolidated the documentation to support this credit into a single PDF and uploaded it separately from this coversheet. The page numbers in the Table of Contents reflect the page numbers of the consolidated PDF, not the page numbers printed on the documents. The titles of the supporting documents are bolded and underlined. For ease of reference, all relevant information is also highlighted in the consolidated PDF.

Evaluation Criteria and Documentation

Note: State how each criterion was met by the project and to what degree it was met. Make direct reference to supporting documents or sections of supporting documents (e.g., page numbers, headings) to enable the verifier to confirm explanations provided.

A. To what extent has the project team used recycled materials, including materials with recycled content and/or reused existing structures or materials?

This project will incorporate at least 17% recycled material content (by cost). This target percentage was set based on the attached specification **Section 01 78 39 – Recycled_Recovered-Materials (see page 1)**. Per the specification, the project team anticipates that much of the recycled content will come from ductile iron pipe, concrete reinforcing steel, and reclaimed concrete bricks. However, the contractor has the flexibility to pursue alternatives provided the 17% recycled content goal is achieved.

The document **Recycled Content Calculations (see page 11)** provides a list of all expected materials on the project, identifies materials where recycled content is expected to be included (and at what percentage), and shows the overall calculation of recycled materials. Per the Envision Guidance Manual, the calculations exclude mechanical, electrical, and

water equipment, as well as plants, soils, rocks and water. The project team is not reusing existing materials or structures on this project. Calculations are based solely on project materials that contain recycled content.

As this project is beginning construction, the actual materials list and calculations of recycled content will be submitted during post-construction review. In addition, the project team will provide a final **Recycled Product Directory** listing all materials containing recycled content, including the product's name, manufacturer, cost, and percentage of recycled content. The project team will also provide a representative sample of **Purchase Orders** to further demonstrate achievement.

Table of Contents

Note: Please list all supporting documents for this credit in the spaces provided. Rows may be added if required. If supporting documentation has been assembled as a single PDF, please insert the page within the PDF where the file begins.

Document Title / Name:	Page(s):
Section 01 78 39 – Recycled_Recovered-Materials	1
Recycled Content Calculations	11

Pending Documentation

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate documents that are not currently available but will be provided during the post-construction review in order to demonstrate achievement.

Document Type / Name:	Brief Description:
Recycled Product Directory	List of all materials containing recycled content, including the product's name, manufacturer, cost, and percentage of recycled content. An updated spreadsheet will show that at least 17% of project materials (by cost) were used on the project.
Purchase Orders	A representative sample to show that the materials detailed in the Recycled Product Directory was purchased for the project.

NATURAL WORLD: SITING

NW1.2 Provide Wetland and Surface Water Buffers

Levels of Achievement

Note: In the table below, please mark selection with an "X" in the "Applicant Selection" row.

Levels	NA	Improved	Enhanced	Superior	Conserving	Restorative
Criteria	NA	A, B, C	A, B, C	A, B, C	(A, B, C) or D	A, B, C, E
Applicant Selection	**X**					

Summary

Pending? (Yes/No): __No__

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate whether the level of achievement selection is **pending** future construction phase documentation. Be sure to also clearly indicate this in the credit summary text and evaluation criteria documentation.

If you indicated that this credit is not applicable, explain why and make specific references to supporting documents or sections of supporting documents presented as evidence. If the credit is applicable, use this space to present an executive summary explaining why the selected level of achievement has been chosen for this credit.

This credit is Not Applicable. There are no wetlands or surface waters on or near the site and none that will be potentially impacted by the project. A map from the **U.S. Fish and Wildlife Service National Wetlands Inventory Mapping Tool** shows the location of the project and its proximity to wetlands and surface waters. The nearest wetland is more than 0.5 miles away and the Jameson River is more than 2 miles away from the site.

Evaluation Criteria and Documentation

Note: State how each criterion was met by the project and to what degree it was met. Make direct reference to supporting documents or sections of supporting documents (e.g., page numbers, headings) to enable the verifier to confirm explanations provided.

A. Has the project team identified wetlands and surface waters on or near the site?

B. Has the project team determined the type and width of buffer zones necessary to protect wetlands and surface waters?

C. To what extent has the project implemented protective buffer zones around wetlands and surface waters?

D. Was the project intentionally sited to avoid wetlands and surface waters?

E. Will the project involve returning previously developed or disturbed sites within the buffer zone to a natural state?

Table of Contents

Note: Please list all supporting documents for this credit in the spaces provided. Rows may be added if required. If supporting documentation has been assembled as a single PDF, please insert the page within the PDF where the file begins.

Document Title / Name:	Page(s):
U.S. Fish and Wildlife Service National Wetlands Inventory Mapping Tool	ALL

Pending Documentation

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate documents that are not currently available but will be provided during the post-construction review in order to demonstrate achievement.

Document Type / Name:	Brief Description:
N/A	N/A

CLIMATE AND RESILIENCE: RESILIENCE

CR2.2 Assess Climate Change Vulnerability

Levels of Achievement

Note: In the table below, please mark selection with an "X" in the "Applicant Selection" row.

Levels	NA	Improved	Enhanced	Superior	Conserving	Restorative
Criteria	NA	A, B	A, B, C	A, B, C, D	A, B, C, D, E	Not Available
Applicant Selection					**X**	

Summary

Pending? (Yes/No): __No____

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate whether the level of achievement selection is **pending** future construction phase documentation. Be sure to also clearly indicate this in the credit summary text and evaluation criteria documentation.

If you indicated that this credit is not applicable, explain why and make specific references to supporting documents or sections of supporting documents presented as evidence. If the credit is applicable, use this space to present an executive summary explaining why the selected level of achievement has been chosen for this credit.

The project team seeks a Conserving level of achievement for this credit. A comprehensive assessment of climate change threats to the project, connected infrastructure, and the broader community has been conducted. Furthermore, the project owner shared the climate threat findings with the broader community, both online and through public workshops. This effort raises awareness of these threats, helps jurisdictions in the region consider such risks, and provides a model for other projects to complete similar assessments. Also, the project owner has presented at major conferences (such as ASCE's International Conference on Sustainable Infrastructure and the annual National Clean Energy Conference) about the climate change assessment and how the findings are used to improve system-wide resiliency and adaptability.

In the responses below, the project team references supporting documents by bolding and underlining the file names and providing page numbers, if applicable. Relevant text in the supporting documents is highlighted in yellow. Each document is uploaded to the ISI website as a separate PDF with the file name matching the name used in this coversheet.

Evaluation Criteria and Documentation

Note: State how each criterion was met by the project and to what degree it was met. Make direct reference to supporting documents or sections of supporting documents (e.g., page numbers, headings) to enable the verifier to confirm explanations provided.

A. Has the project team determined climate change threats to the project and its surroundings?

The project team gathered the most recent climate change information for the area from the provincial-wide **Energy for a Changing Climate Report**. This report was produced by the Regional Energy Board and includes more than 35 specific recommendations **(see pages 35-37)**. From there, the owner – the region's largest utility – published an Energy Resiliency Plan profiling each asset in the system and assessing the risks related to climate change impacts. As shown in

the **Energy Resiliency Plan (see page 23)**, direct impacts to the Northeastern Energy Center include heat waves, extreme flooding, and severe storms. Impacts to customers that depend on reliable and efficient energy may include brownouts and interruptions in power supply **(see Energy Resiliency Plan, page 26)**.

B. Has the project team determined the vulnerability of the project to climate change threats?

Impacts related to increasing temperatures, flooding, and severe storms have been evaluated for the Northeastern Energy Center over the life of the project. In summary, higher temperatures could result in increased peak demand for cooling needs. Extreme flooding could threaten low-lying areas of the project site. Wind from severe storms could destabilize grid connections. The **Energy Resiliency Plan (see pages 20-24)** elaborates on these impacts.

C. Has the project team determined the vulnerability of the infrastructure system to climate change threats?

The Northeastern Energy Center is integral to the province's northern energy system. Should it fail, the communities of Morgan Lake, Stewart Point, Eagle Point and Coyote Jaw would experience localized power outages and lengthy blackouts. Likewise, the Northeastern Energy Center is dependent upon other assets in the system functioning properly. That is why the owner assessed the vulnerability of the infrastructure system both as a whole and by major components in the **Energy Resiliency Plan (see pages 30-35)**. This effort led to the development of **Sustainable Design Guidelines** to ensure the system is capable of operating under changing conditions over the long-term **(see pages 3-7, 9-14, 17, and 23)**.

D. Has the project team determined the vulnerability of the community to climate change threats?

In addition to the **Energy for a Changing Climate Report** described in criterion A, the project team reviewed community-wide climate change assessments and adaptation plans from the nearby communities of Morgan Lake, Stewart Point, Eagle Point and Coyote Jaw. These plans describe the vulnerabilities each of these communities may face. **(see Morgan Lake Community Climate Change Plan, Stewart Point Community Climate Change & Resilience Plan, Eagle Point Climate Action Plan, and Coyote Jaw Climate Change Assessment and Adaptation Plan)**. In the **Sustainable Design Guidelines (see pages 3-7 and 9)**, the project team highlighted instances where the guidelines took into account specific findings from the community climate change assessments and adaptation plans.

E. Has the project team or owner shared their climate threat findings?

The project owner shared its climate threat findings with the Morgan Lake, Stewart Point, Eagle Point and Coyote Jaw communities online via community **Facebook pages** and the **Northeastern Energy Center Website**. During public workshops, the owner drew awareness to these threats and discussed both project-specific and system-wide adaptation efforts **(see Stakeholder Workshop Meeting Minutes)**. The owner offered to help other project owners understand climate risks and the steps needed to undertake such assessments at the project scale **(see Letter to Area Utilities)**.

In addition, the project owner speaks regularly at major conferences (such as ASCE's International Conference on Sustainable Infrastructure (ICSI) and the annual National Clean Energy Conference (NCEC)) about the climate change assessments and how they used the findings to improve system-wide resiliency and adaptability. See **Presentations** for the most recent ASCE ICSI and NCEC conference presentations.

Table of Contents

Note: Please list all supporting documents for this credit in the spaces provided. Rows may be added if required. If supporting documentation has been assembled as a single PDF, please insert the page within the PDF where the file begins.

Document Title / Name:	Page(s):
Energy for a Changing Climate Report	35-37
Energy Resiliency Plan	A: 23, 26; B: 20-24; C: 30-35
Sustainable Design Guidelines	C: 3-7, 9-14, 17, and 23; D: 3-7 and 9
Morgan Lake Community Climate Change Plan	All
Stewart Point Community Climate Change & Resilience Plan	All
Eagle Point Climate Action Plan	All
Coyote Jaw Climate Change Assessment and Adaptation Plan	All
Stakeholder Workshop Meeting Minutes	All
Facebook pages	All
Northeastern Energy Center Website	All
Letter to Area Utilities	All
Presentations	All

Pending Documentation

Note: If pursuing verification Pathway A: Design + Post-Construction please indicate documents that are not currently available but will be provided during the post-construction review in order to demonstrate achievement.

Document Type / Name:	Brief Description:
N/A	N/A