



## DETAILED PILOT PROJECT



## Buckle Street Underpass

Version 1.5 Pilot Project

**PREPARED FOR**  
New Zealand Transport Agency (NZTA)

**DATE**  
October 24, 2013

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## ABOUT THE ASSESSMENT

Greenroads Foundation spoke with authorized representatives New Zealand Transport Agency (NZTA) on several occasions to discuss the Buckle Street Underpass Project for purposes of this Greenroads Pilot Project Assessment. The goal of the assessment is to determine the potential Greenroads Rating for the Buckle Street Underpass Project located in Wellington, New Zealand. The Buckle Street Underpass Pilot Project is the third of several assessments included in the NZTA Greenroads Pilot Program.

This Pilot Project Assessment summarizes our understanding of the Project, its potential Greenroads Rating, and our recommendations to the Project Team. This section of the report provides background about the Project, explains the purpose and scope of the Pilot Project Assessment, and describes how information about the Project was collected.

As a Pilot Project, our findings in this report are based upon our understanding of the overall intent of both the design and construction practices identified during interviews with the Project Team and a tour of the project. The results of the Pilot Assessment are based on the *Greenroads Manual v1.5* ([www.greenroads.org/manual](http://www.greenroads.org/manual)).

A brief description of the Greenroads Rating System is provided in Appendix A, the evaluation method used in this Assessment is attached in Appendix B, and the completed and annotated Greenroads Scorecards for Buckle Street are located in Appendix C.

## PROJECT DESCRIPTION

As part of the Government creating the National War Memorial Park in the City of Wellington, Buckle Street is being moved underground to remove the traffic that currently separates Memorial Park from the National War Memorial. This will create a new, unified National Memorial precinct. This development is being done in commemoration of the centenary of the First World War, and is planned to be completed by ANZAC Day 2015.

This will improve the setting of the National War Memorial and strengthen the heritage and cultural appreciation of the area. It will also improve the safety of pedestrians and cyclists who currently cross Buckle Street at grade. The project was started in November 2012 and is scheduled to be completed by March 2015.

This project is also a part of the larger Wellington Inner-City Transport Improvements Program that seeks to improve public transport, pedestrian and bicycle facilities, and city economic and cultural vitality.

## PURPOSE AND SCOPE

The scope of the Pilot Project Assessment (<https://www.greenroads.org/1368/pilot-project.html>) includes collection and a brief review of a listed Standard Project Documents (SPDs) and typical design reports that are commonly prepared for most roadway projects. Greenroads also conducts at least one interview with representatives of the Project Team and any necessary follow up discussions.

The specific goals of this Pilot Project Assessment are to:

1. Understand the general roles and goals of the Project Team at NZTA with respect to the Buckle Street Underpass as a Greenroads Pilot Project.
2. Identify areas where the Project may achieve points based on Standard Project Documentation.
3. Identify other potential areas where the Project might achieve points.
4. Identify potential new ideas that can be considered as Custom Credits.

For all Pilot Projects, Greenroads reviews the Project's potential for participating in formal Certification. Where eligible, next steps are outlined for the Project Team in order to be successful, provided this recognition is desired

and possible. This Pilot Project Assessment may be substituted for the second step in the formal Certification process, called “Detailed Assessment,” which is followed by the development of a “Certification Plan.” Importantly, the resulting score of a Pilot Project Assessment provides the Project Team with a good sense what the final Rating for the Project might be if formal Certification were pursued. Greenroads also identifies how the Project is classified according to the *Greenroads Project Handbook*, which explains how Projects become Certified.

More information on the process of Assessment, Certification eligibility, and project classification is available in the *Greenroads Project Handbook* ([greenroads.org/files/244.pdf](http://greenroads.org/files/244.pdf)).

Review of Certification documentation related to each Greenroads credit is **not** within the scope of this Assessment. However, for Certification, all documents listed in the *Greenroads Manual* for any credits being pursued would need to be provided to Greenroads Foundation for review and some documents for this Assessment may be useful in achieving some of these credits.

## HOW ASSESSMENT WORKS

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1. Based on our understanding of the Project, the Team’s intentions and the supporting information gathered, credits are marked as awarded, denied, or flagged as possible considerations using the Assessment method explained in Appendix B.
2. With these determinations, Greenroads prepares a Basic Greenroads Scorecard (Appendix C) that reflects the general state of the Project as presented to Greenroads. The baseline score is representative of the approximate conceivable Composite Rating for the Project, as a whole. This means the reported summary score for the Project may not be representative of the score for discrete segments within the Project if rated separately.
3. For a Detailed Pilot Project Assessment like this one, Greenroads also prepares an Annotated Greenroads Scorecard (Appendix C). The Annotated Scorecard provides further details about the level of effort that Greenroads suspects may be involved in achieving or documenting certain additional credits. It also includes comments from the Greenroads Reviewer regarding how intent for each credit was determined (e.g. documented or verbal evidence) and our educated guess about how easy it would be for the Project Team to produce information in support of the activity if formal Certification were to be pursued.
4. The Assessment is summarized in this report. Greenroads uses the results of all Pilot Assessments collected from all over the world to improve the quality of the Greenroads Project Rating Program and may use the results of the Buckle Street Underpass Pilot Project for educational and training purposes, or in the promotion of the Foundation’s charitable mission (with permission).
5. Successful completion of a Greenroads Pilot Project also qualifies the Project Team to use the Greenroads Pilot Project Logo in association with the Project Team’s own promotions, subject to the terms of the Logo Use Agreement and the Greenroads Trademark & Copyright Policy (available on the Greenroads Website).



## Requested Documents

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Greenroads requested the following SPDs for review to complete this Pilot Assessment:

- Standard plans and specifications
- Special provisions
- Construction schedule
- Schedule of costs (bid tab) if available
- Environmental Review document
- Project website

- Design reports for major structural features (pavements, bridges, tunnels)
- Hydraulic or drainage reports
- Mix design documents
- Geotechnical reports

Occasionally, Project Teams may not use the explicit document titles above, and instead will generally be able to provide an alternative document as a substitute.

For Pilot Assessments of projects located outside the United States, Greenroads also welcomes the Project Team to provide information beyond the above listed documents for Pilot Assessments. Documents that are provided to Greenroads which are not on the above list may be reviewed as needed for the Greenroads Reviewer to gain a general understanding of the Project and its local context. **A full list of documents provided to Greenroads by NZTA is included at the end of this report in the References section.**

### Key Documents

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Typically, only a few key documents and a verbal interview are satisfactory to determine intent for the majority of the Greenroads credits. The following specific documents were instrumental in preparing this report (in no particular order):

- Construction Environmental Management Plan dated May 10, 2013.
- Construction Noise and Vibration Management Plan 2 – Undergrounding dated December 21, 2012.
- Environmental Management Plan dated April 30, 2013.
- Basin Bridge Project Volume 2 Assessment of Environmental Effects Report dated June 2013.
- <http://www.nzta.govt.nz/network/projects/project.html?ID=192>
- <http://www.nzta.govt.nz/projects/buckle-st-underpass/index.html>

### Additional Information Sources

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To supplement the documentation, Greenroads Staff also completed several web meetings and exchanged correspondence with the Project Team over email and in person. Some credits may have been verbally supported for purposes of this Assessment, which is adequate to achieve the stated Assessment objectives.

## SCORE SUMMARY

A Greenroads Scorecard is attached that reflects our understanding of the Project intent and potential achievement level in Greenroads. A minimum of 32 points is required for certification. The highlights of the Scorecard are summarized below:

Figure 1 shows the Greenroads Summary Scorecard and the highlights of the Scorecard are summarized below.



**Figure 1. Potential Summary Scorecard for Buckle Street Underpass.**

- The project has demonstrated intent to meet **7 of the 11 Project Requirements**. All 11 Project Requirements must be completed and documented for Certification.
- A total of **6 points do not appear to be practical** for the Project to achieve due to the scope of the Project and might be considered inappropriate design choices. The remaining **102 Voluntary Credit points** appear to be applicable. (An additional 10 points for Custom Credits may also be earned, noted below.)
- The Project has demonstrated intent to meet **14 Voluntary Credits totaling 36 points**, with additional points possible for a few of these credits and additional formal documentation or explanations required for Certification purposes. **This number of points is sufficient for a Bronze Rating** without including any points for Custom Credits, provided that the Project Requirements are met.
- **Seven credits were identified as economical opportunities to earn up to 14 additional points.** These credits are potentially feasible based on the documents provided and Greenroads believes are possible to implement with minimal to no additional construction cost, or will require minimal design team effort or time. These credits are in **boldface orange** in the scorecard. A few of these activities may actually have been or will be performed on the Project, but the extent of these activities was not clear in the key documents used in this Assessment. Implementing and documenting the activities required by some of these credits would **meet the minimum number of points needed for a Silver Rating** without including Custom Credits, provided that the Project Requirements are met.
- **Eight credits were identified as opportunities for the Project to earn an additional 22 points with moderate effort;** however, the majority of these activities are likely to add substantial cost or require significant scope changes due to the current stage of design and construction. A few of these activities may actually be

performed on the Project, but it was not clear in the reference documents for this report. It is likely that completion of these activities will be challenging if they are not already present on the Project by virtue of its design or construction specifications. Implementing and documenting the activities required by credits would **meet the minimum number of points needed for an Evergreen Rating without** including Custom Credits.

- The remaining credits not identified in the above groups are anticipated to pose a substantial challenge for the Project to earn points. Such activities could be considered earlier in the project development process for greater chance of successful, economical implementation on future projects of this scale.
- **One Custom Credit worth 1 point of the 10 possible was clearly identified for the Project based on Project Team discussions.** There is at least one Sustainable Transportation Professional (STP) on the Project team and there is potential to get an additional point by involving additional STPs. Several **other** Custom Credits have already been developed and are available for all Projects pursuing Certification. Several of these other Custom Credits may be achievable by the Project.

## CATEGORY SUMMARY

Figure 1 shows a summary of where points may be achieved based on the current intent that has been shown and where economical additions may be made. This does not represent all achievable points, as the Project may already be on track to achieve points for credits that Greenroads staff has not seen documentation for. Many Greenroads credits require very specific project documentation and even some post-construction as-built documents.

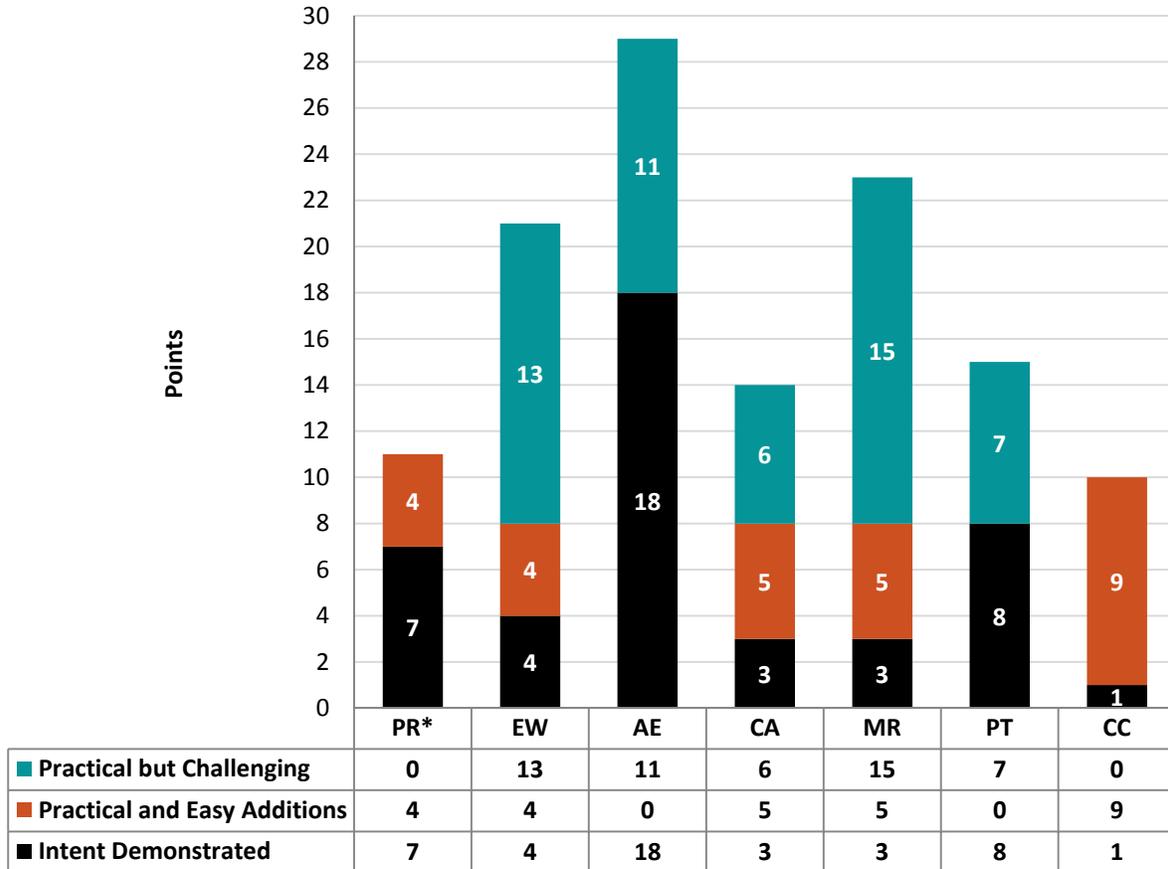


Figure 2. Potential Achievement by Credit Category

## PROJECT REQUIREMENTS

The Buckle Street Underpass project appears to intend to meet 6 of the 11 Project Requirements.

- For Certification, credit specific documentation would be required. Even for Project Requirements in which intent to achieve has been shown, additional credit specific documents may need to be submitted that were not provided for review in this Assessment. For Certification, each of the 11 PR items would need to be documented completely in order to qualify for Certification Award.
- For the credits in which intent was not shown, the Project Team may need to make changes to ensure that all the Project Requirements are completed on the Project. If all Project Requirements are not implemented early on the Project, Certification may be challenging.

- In particular, Greenroads is concerned that the environmental review process may not have been completed to the minimum requirements of PR-1 Environmental Review Process. An AEE was submitted for the Basin Bridge Project, but the team would need to show that this applies to the Buckle Street Project and meets the requirements of the credit.

## **ENVIRONMENT & WATER**

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The Buckle Street Underpass project demonstrated intent to achieve 4 points of a total 21 possible in the EW Category.

- The project showed the intent to achieve the AE-1 Environmental Management System by submitting ISO 14001:2004 certification.
- Drainage credits offer this Project a great opportunity to earn additional points. Documentation indicates Stormwater runoff will be treated, but it was unclear how treatment will occur or to what extent.
- EW-4 Stormwater Cost Analyses and EW-5 Site Vegetation should also be considered easy options for additional points.

## **ACCESS & EQUITY**

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The Buckle Street Underpass project demonstrated intent to meet 18 points of a total 30 possible in the AE Category.

- The Wellington Urban Development Code of Practice for Road Design & Construction states that at least one Safety Audit is required and that another may be required by the Council.
- A majority of the points come from the context sensitivity approach to installation of multiple modes, including new bicycle, pedestrian, and transit facilities.
- The project purpose is to improve the Memorial park and presumably provide access as well. It was unclear if art was also included in the project, but it is well positioned to achieve points for AE-8 Scenic Views and AE-9 Cultural Outreach.

## **CONSTRUCTION ACTIVITIES**

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The Buckle Street Underpass project demonstrated intent to meet 3 points of a total 14 possible in the CA Category.

- CA-2 Environmental Training, CA-3 Site Recycling Plan, CA-6 Paving Emissions Reduction, and CA-7 Water Use Tracking should be considered as an easy option for the Project to earn points.
- As an Alliance project, a warranty should be in place that would achieve credit CA-8 Contractor Warranty.

## **MATERIALS & RESOURCES**

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The Buckle Street Underpass project demonstrated intent to meet 3 points of a total 23 possible in the MR Category. Materials choices have an enormous impact on lifetime energy and emissions associated with the Project. Additional points are likely to be available for higher levels of effort in this category.

- As the project is moving the roadway underground, it is unlikely that the project could earn points for MR-2 Pavement Reuse.
- It could not be determined if the Project can achieve points for recycling, as calculations were not shown to determine how much of the new pavement materials will be from recycling.

- It is possible that many materials will already be sourced locally, since it is in an urban environment, but it could not be determined to what extent with the provided documentation. Additional calculations are necessary to determine how many points the project can earn.
- Diligent tracking of recycled content, reused materials, and materials suppliers and sources are important for the Project.

## **PAVEMENT TECHNOLOGIES**

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The Buckle Street Underpass project demonstrated intent to meet 8 points of a total 20 possible in the PT Category.

- PT-1 Long-life Pavement does not appear possible with the current pavement design. The Pavement Structures and Surfacing document states that pavements will have a design life of 30 years and structures will have a design life of 40 years, which does not meet the requirements of this credit.
- The Pavement Structures and Surfacing document also suggests that Open Graded Porous Asphalt (OGPA) may be used in several areas of the project and The Basin Bridge Project Proposed Road Surface Types shows that much of the Buckle Street project will be permeable. Calculations would need to be submitted showing that these pavement meet the requirements of credits PT-2 Permeable Pavement and PT-4 Cool Pavement.

## **CUSTOM CREDITS**

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One Custom Credit was identified or proposed for the Buckle Street Underpass project. Several Custom Credits have been recently developed that may or may not be appropriate for this Project. Some Custom Credits that may be applicable for this Project, or future similar projects, are:

- CC-1 Sustainable Transportation Professional
  - At least one STP is already involved in the project (1 point). An additional point can be achieved if at least one member of the Project Team representing the Construction Team passes the STP exam.
- CC-2 Workzone Safety
- CC-4 Roadside Revegetation (potentially an alternate to EW-6 Habitat Restoration)
  - The park work may involve revegetation that could achieve this credit.
- CC-7 Freight Access
  - The project may include some Freight Access features but it could not be determined from submitted documentation how many points the project could achieve.

## DISCUSSION

Based on our understanding of the intent of the Project Team, the Project appears positioned for a minimum rating of **Greenroads Bronze**. Since credit-specific documents were not expressly reviewed for this Assessment, Greenroads suspects a **Silver Rating** is also likely to be within reach of the Project. However, a Silver Rating on the Project will require additional effort by the Project Team to formally document, and possibly to implement. Bronze and Silver Ratings are typical for Projects of this type, scope, size and budget.

## PROJECT CLASSIFICATION

The Buckle Street Underpass is classified as a “complex project with a single segment” according to the *Greenroads Project Handbook* and is eligible to participate in Greenroads Certification if desired.

- **Primary route.** Buckle Street is the primary thoroughfare under investigation with less prominent local street improvements within the corridor and is effectively a single segment for rating purposes.
- **Vertical phasing.** NZTA has identified four phases for the construction of the underpass — site preparation, trenching for the tunnel, tunnel construction, and building the park. These phases are treated together as a single segment for rating purposes. However, phases are one indicator of a complex project.
- **Corridor phasing.** Future planned improvements along the SH1 corridor inclusive of Buckle Street (formerly called “Wellington Inner City Transport Improvements”). Corridor phasing is one indicator of a complex project.

Due to the larger corridor program that is planned for SH1 in Wellington, **a Certification Plan is recommended for this Project if Certification were to be pursued.**

Table 1 below highlights the classification that is appropriate for the Buckle Street Underpass Project.

**Table 1. Project classification chart showing common stages of Certification.**

Project Classification	Single Segment	Multiple Segments	
<b>Simple</b>	Preliminary Submittal Final Submittal	<i>As Needed:</i> Certification Plan Master Submittal	<i>Each Segment:</i> Preliminary Submittal Final Submittal
<b>Complex</b>	Certification Plan (As Needed) Preliminary Submittal Final Submittal	<i>Required:</i> Certification Plan Master Submittal	<i>Each Segment:</i> Preliminary Submittal Final Submittal

## HOW THIS PROJECT COMPARES

The Buckle Street Underpass project scores slightly above average compared to other typical highway projects, including similar projects reviewed during New Zealand’s Greenroads Pilot Program (Te Rapa Bypass, Peka Peka to Otaki Expressway) as well as projects in the U.S. and Canada.

Generally, most projects complete between 4-7 Project Requirements and earn between 15-25 points in Voluntary Credits. These statistics are based on a sample of about 120 projects from various locations in the U.S. and Canada that use current best practices and design standards and were built within the last 10 years. Table 2 shows how the Project compares to other projects within this sample set based on some of the descriptive characteristics of the project.

**Table 2. Project's Rating Position Compared to Other Projects**

<b>Your Project</b>	<b>Score (w/o CC)</b>	<b>Rating</b>
Buckle Street Underpass	37	Bronze
<b>Your Project's Reasonable Potential</b>		
Buckle Street Underpass	51	Silver
<b>Your Project's Moderate Potential</b>		
Buckle Street Underpass	73	Evergreen

	<b>No. Projects</b>	<b>Score (w/o CC)</b>	<b>Rating</b>	<b>Rating Range</b>
<i>Typical US Projects</i>	120	25 ± 1	None	None
<i>US Projects Reasonable Potential</i>	120	59 ± 17	Gold	Bronze – Evergreen
<i>Greenroads Projects Certified to Date</i>	7	40 ± 5	Bronze	Bronze – Silver
<i>DBB Projects</i>	98	25 ± 1	None	None
<i>Alternative Delivery Projects</i>	22	31 ± 2	None	None – Bronze
<i>Urban Projects</i>	40	28 ± 1	None	None
<i>Projects with Budgets &gt;\$100 mil</i>	18	32 ± 2	Bronze	None – Bronze
<i>Projects with Sustainability Emphasis</i>	37	29 ± 1	None	None

Based on other project experience, Buckle Street Underpass has four characteristics that are commonly helpful to position the project to be successful at sustainability:

- **Large budget projects (more than \$10 million USD)** typically have significant financial leverage to do more sustainable activities. Much of this has to do with the amount of social capital required to move the Project forward in a community.
- **Alternative delivery.** Alternatively financed or delivered projects are characterized by an integrated project team. This structure often results in a higher Greenroads Rating.
- **Projects located in urban areas,** where multiple modes of surface transportation are more widely available, tend to outperform rural projects.
- **Sustainability as a project goal.** Early commitment to sustainable design and construction, e.g. a key performance indicator, desired, often results in a higher level of sustainability performance that is recognizable with a rating system tool like Greenroads.

## RECOMMENDATIONS

Based on the results of this Pilot Assessment, it is our opinion that the Project could, if desired, take the next step and be eligible to participate in formal Greenroads Certification. At this time, **Greenroads conditionally recommends that Certification is pursued for the Buckle Street Underpass Project.** This section provides our recommendations to the Project Team that may assist the project being successful in this endeavor and also presents some action items and special conditions for this Project.

This Detailed Pilot Assessment has been completed under the existing contract with NZTA for the Pilot Program. The Project has been Registered under Greenroads v1.5 by URS New Zealand independent of the Pilot Program, but the Certification Agreement has not yet been signed. **Registration will expire after October 29, 2014 if no further action is taken.**

## REASONABLE EXPECTATIONS FOR FUTURE CERTIFICATION

**A Greenroads Bronze Rating is a reasonable and cost-effective Certification target for this Project.** This rating appears to be easily achievable by the Project. Then, a **Silver Rating** would demonstrate substantial effort has been invested into the overall sustainability performance of the Project. **A Silver Rating appears to be reasonably achievable by the Project with some additional effort.**

Due to the current stage of the Project's construction, it might be challenging to pursue further recognition. There are several reasons for this difficulty; the two most common hurdles include 1) staff turnover on the Project Team since the start of work and 2) loss of communication with subconsultants or subcontractors that are no longer engaged with the project since their portion of work is over. As a result, collecting documents to provide Greenroads with an accurate record of the Project can be more difficult than if the Greenroads had been engaged with all parties earlier in the Project's development stages.

## SPECIAL DOCUMENTATION FOR THIS PROJECT

Projects in New Zealand should be able to meet the standards presented in the *Greenroads Manual v1.5* with minimal to no extra effort to demonstrate compliance because regulatory requirements are comparable. However, in some cases alternative documentation may need to be provided to Greenroads in support of a particular goal or requirement and in some provinces the requested document required by the *Manual* may not exist by that name or term locally.

Alternative documentation may be submitted where language in the *Greenroads Manual v1.5* implies a specific U.S. standard or regulatory requirement as a referenced standard.

- For example, the Assessment of Environmental Affects (AE) may be used as a substitute for the National Environmental Policy Act process in Project Requirement PR-1, Environmental Review Process.

**However, please note all Greenroads Projects participating in Certification must demonstrate compliance with or exceedance of the standards in the U.S. Environmental Protection Agency's Construction General Permit stated in Project Requirement PR-7, Pollution Prevention Plan, regardless of location.**

- The CGP clearly provides the requirements that construction projects must meet for pollution prevention during construction.
- An actual permit from the USEPA is NOT required; instead the Project Team is responsible for demonstrating that the USEPA's criteria are met for the Project's Pollution Prevention Plan.
- In some areas, **we recognize that the CGP discharge quality guidelines may be more stringent than local requirements** and the EPA is constantly updating the standards. The CGP guidelines in effect at start time of

construction shall apply. For this Project, they are explained in the resources here:  
<http://water.epa.gov/scitech/wastetech/guide/construction/index.cfm>

For other credits, specific alternatives where local jurisdictions have separate requirements will be reviewed and considered on a case-by-case basis. Otherwise, many credits in the *Manual* already suggest alternative means to meet the stated credit requirements, such as a reference document or template that can be used and completed with the specific project conditions in mind.

## ACTION ITEMS

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To achieve a formal certification award, all activities must be formally documented according to the current version of the *Greenroads Manual*. Importantly, all of the Project Requirements must be completed and documented.

For the Project to reach the **minimum 43 points required** for a **Silver Certification** award, additional effort by the Project Team is needed.

Specifically:

1. Completion of four (4) Project Requirements,
2. Collection of additional documentation for seven (7) Project Requirements, and
3. Completion and documentation of any combination of the following for a total of **six (6) additional points**:
  - a. Any activities denoted as “practical and easy” Voluntary Credits on the Basic Scorecard, and/or
  - b. Any nine (9) existing Custom Credits.
4. Collection of all required documentation for any other Voluntary Credit for which intent was demonstrated by NZTA in this Assessment.

**For Bronze Certification, the Project Team would need to complete only Items #1, 2, and 4 above.**

## TERMS AND TIMING

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Greenroads recommends a customized approach for this Project on the road to formal Certification. This approach involves a Project Team commitment to the end goal with special timing for submittals and payment schedules that is not within the normal procedure stated in the *Greenroads Project Handbook*. Greenroads suggests this approach due to the status of construction for the reasons noted above and the need to verify the 11 Project Requirements have been (or still can be) completed at this stage.

We propose the following submittal schedule for Buckle Street.

1. **Certification Plan.** A Certification Plan is developed by Greenroads and then reviewed and approved by the Project Team **prior to formally committing to Certification**. A Certification Plan can be completed under the terms and conditions of an Assessment Agreement and will require a fee.
2. **Project Requirements Review.** At the same time the Certification Plan is developed, documentation for all Project Requirements should be submitted to Greenroads for formal review (all 11 are required to successfully certify). Action Items #1 and #2 above should be completed prior to the start of this work.
3. **Kickoff Training.** Kickoff Training that is required as a part of Certification is completed after the Certification Plan is developed and before the Project Team proceeds with the Master Submittal.
4. **Master Submittal.** Master Submittal occurs no later than 1 month after the first segment pursuing Certification has reached final completion, or within 6 months of the date of the final Certification Plan, whichever is later.

## LIMITATIONS OF ASSESSMENT

- Documents provided were not formally reviewed for detailed compliance with specifications in the *Greenroads Manual*. Under no circumstances shall any Project Team member claim that this project has been Certified by Greenroads Foundation as a result of this Assessment.
- The results and recommendations provided in this study are only applicable to the version of the Rating System used to complete this assessment: *Greenroads Manual v1.5* (dated February 4, 2011).
- The Project is part of a larger corridor improvements program. The resulting scores of this Assessment may not apply to the whole corridor and may not accurately reflect actual Certification scores for certain parts of the Project where features are discontinuous. For Certification of Buckle Street Underpass, a Certification Plan would be required.
- The reported score is not intended to be interpreted as an actual earned Rating, completed Certification review, or Registration of this project. Rather, the score reflects the current potential score of the Project based on the documents provided for our review and verbal conversation with the Project Manager and other representatives of the Project Team. Successful completion of a Pilot Project Assessment does not indicate that the Project is Certified.
- The Project Team may promote the completion of this Assessment as a “Pilot Project” according to the terms of the Greenroads Trademark & Copyright Policy. The aggregated category scores (Figure 2) may be published on the Greenroads Website with approval of the Project Team as part of the terms of the Pilot Project Assessment. Greenroads may also feature specific practices used by this Project in future versions of the Greenroads Manual as examples for other projects, for educational and technical presentations, or for other academic purposes in accordance with the charitable mission of Greenroads Foundation.
- The completed Scorecards and this Report are intended to serve as guidance and as learning tools for the Project Team and may NOT be publicized or distributed.
- Greenroads respects reasonable requests for confidentiality, and reserves the right to publish, distribute or otherwise use such confidential project data to assess the Project in aggregate with other projects, without exposing any distinguishing information about the Project’s identity. This means the Project information used for or created as a result of this Assessment may be used for internal business development and/or quality control purposes.

## REFERENCES

Due to the limited scope of the Pilot Assessment, a majority of the documentation provided to Greenroads by NZTA was not necessary to achieve the stated objectives nor was it examined for detailed compliance with credit documentation required by the *Greenroads Manual v1.5*. Some of these documents may contain information that is needed to meet specific credit criteria or may serve as supporting information for Certification purposes, if Certification were pursued.

- Construction Environmental Management Plan dated May 10, 2013.
- Construction Noise and Vibration Management Plan 2 – Undergrounding dated December 21, 2012.
- Wellington Inner City Improvements National War Memorial Park (Pukeahu) Noise and Vibration (CNVMP1 TR) Certification Review dated November 26, 2012.
- Construction Noise and Vibration Management Plan 1 – Temporary Road dated December 21, 2012.
- Memorial Park Project Alliance Agreement. Appendix A13: Environmental dated February 22, 2013.
- Memorial Park Project Alliance Agreement. Design Requirements Appendix A9: Pavement Structure and Surfacing dated March 6, 2013.
- Memorial Park Project Alliance Agreement. Design Requirements Appendix A1: Standards, Manuals, Publications, and Guidelines dated February 28, 2013.
- Memorial Park Project Alliance Agreement. Design Requirements Appendix A6: Stormwater dated February 28, 2013.
- Memorial Park Project Alliance Agreement. Design Requirements Appendix A12: Urban Design dated February 22, 2013.
- Environmental Management Plan dated April 30, 2013.
- National War Memorial Park (Pukeahu) Empowering Act 2012.
- Stakeholder and Communications Management Plan dated March 22, 2013.
- Stakeholder and Communications Actions Plan dated March 22, 2013.
- ISO 14001:2004 Certificate of Registration for Downer dated January 19, 2011.
- Construction Air Quality (Dust) Management Plan – Temporary Road (CAQMP1-TR) dated November 21, 2012.
- Construction Air Quality (Dust) Management Plan – Undergrounding dated February 11, 2013.
- Wellington Inner City Improvements National War Memorial Park (Pukeahu) Noise and Vibration (CNVMP2 U) Certification Review dated January 15, 2013.
- Wellington Inner City Improvements National War Memorial Park (Pukeahu) Air Quality (Dust) [CAQMP1-TR] Certification Review dated November 22, 2012.
- RMA Forms
- Basin Bridge Project Volume 2 Assessment of Environmental Effects Report dated June 2013.
- <http://www.nzta.govt.nz/network/projects/project.html?ID=192>
- <http://www.nzta.govt.nz/projects/buckle-st-underpass/index.html>

# APPENDIX A

About the Greenroads Rating Program



## BACKGROUND

The Greenroads® Rating System is a collection of sustainability best practices, called “credits,” that apply to roadway design and construction, much like the Leadership in Energy and Environmental Design (LEED®) Rating Systems for green buildings. Completing these activities can earn points toward a total score, called a “Rating,” that can be used as an indicator of the overall sustainability of the project.

A **Greenroad** is defined as roadway project that has been designed and constructed to a level of sustainability that is substantially higher than current common practice.

The Greenroads Project Rating Program is one of three charitable programs for transportation infrastructure administered by the 501(c)(3) non-profit organization, Greenroads Foundation. The Project Rating Program includes two core services for projects to get a Greenroads Rating: Project Certification and Project Assessment.

Certification is a rigorous, independent, third-party review of project documentation according to the standard in the most current *Greenroads Manual*. The Certification process is intended to be somewhat challenging in order to recognize projects that go far beyond the conventional practice for sustainable design and construction. Projects that successfully complete the Certification process are eligible for Certification Award and recognition as a “Greenroad.”

Greenroads Assessments are less stringent and shorter turnaround: they rely on standard project documentation at-hand and are used most often as stepping stones on the path to certify a project in the future. Assessments are also used for completed projects as a benchmarking tool and for all projects located outside of the United States as part of Greenroads Pilot Program efforts.

Since 2007, Greenroads has been tested on over 125 design and construction projects around the world of various types, shapes, sizes and stages of design and construction. Projects from all over the United States and internationally are participating in the Greenroads Project Rating Program and joining the Foundation in its efforts toward making our transportation infrastructure more sustainable.

## RATING SYSTEM DETAILS

Greenroads sustainability credits are divided into two types: mandatory and voluntary. Projects pursuing Certification must complete 11 mandatory credits (Project Requirements) in order to qualify for a Certification Award. There are 37 other Voluntary Credits that when complete, earn points toward one of four Certification Awards: Bronze, Silver, Gold and Evergreen.



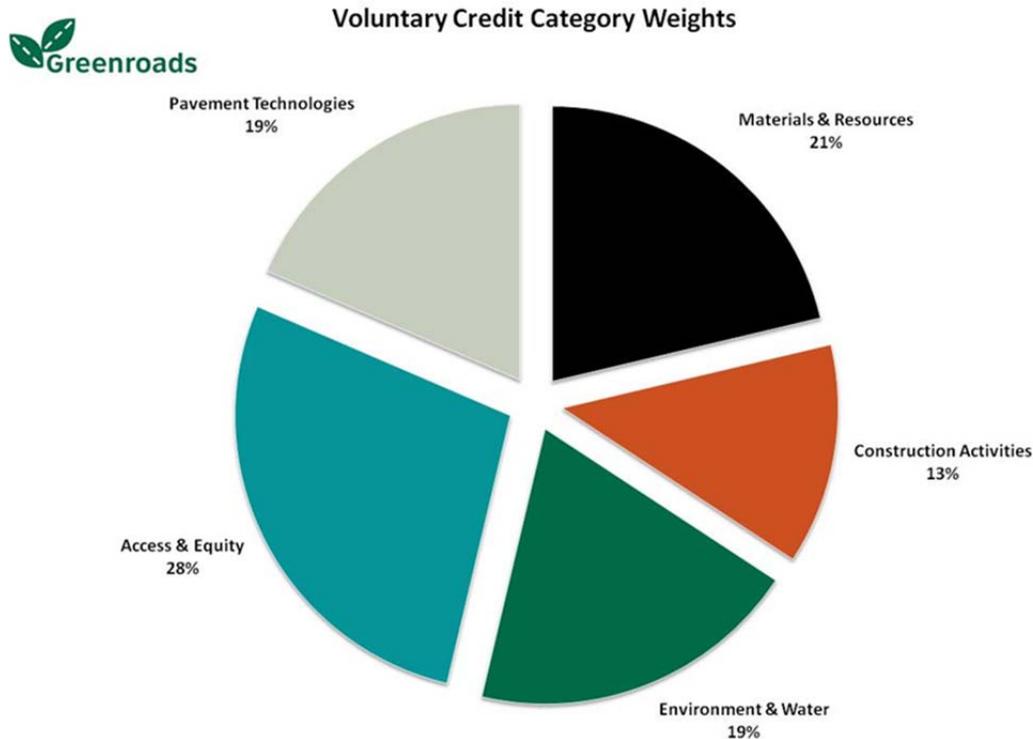
Credits are grouped into six Categories, with one additional Category that allows projects to earn points for innovative activities that are currently not recognized in the Rating System.

### Important Notes

- Mandatory activities (Project Requirements) are not worth points
- All 11 Project Requirements must be completed to be eligible for a Certification Award
- Voluntary activities (all other credits) are worth between 1 to 5 points based on lifecycle impact

**Table 1. Greenroads Credit Categories and Intent**

Category Name	Intent
<b>Project Requirements</b>	Encourage environmentally responsible decision-making processes, have management plans in place for construction, establish a minimum baseline for every project that applies for certification.
<b>Environment &amp; Water</b>	Promote best practices related to stormwater management and ecological resources within the project boundary
<b>Access &amp; Equity</b>	Promote safety, access, and mobility improvements and features for users and operations of the roadway
<b>Construction Activities</b>	Promote responsible construction management, reduce use of fossil fuels and improve health and safety of construction workers
<b>Materials &amp; Resources</b>	Promote responsible materials and energy management by combinations of recycling, reusing, and reducing both virgin and waste materials
<b>Pavement Technologies</b>	Highlight specific pavement engineering innovations and ideas or broad types of technologies or techniques which are well-established in practice and have direct sustainability benefits
<b>Custom Credits</b>	Recognize the implementation of sustainable or innovative ideas not included in the current version of the Rating System.


**Figure 1. Relative Weights of Greenroads Credit Categories (108 Points Possible, Does Not Show Custom Credits)**

## MORE INFORMATION

More detailed information, including the full and abridged versions of the *Greenroads Manual*, which details the activities that are part of the Rating System, and the Project Handbook, which describes the details of the Project Rating Program, can be found on the Greenroads Website: <http://www.greenroads.org>.

## CREDIT SUMMARY

The Greenroads Rating System v1.5 *Manual* has:

- 11 Project Requirements.
- 37 Voluntary Credits. 1 to 5 points each, 108 maximum possible.
- 118 total maximum points including 10 points for optional Custom Credit activities.

## PROJECT REQUIREMENTS

To be eligible for a Certification Award, all 11 Project Requirements must be completed and documented. There are no points for any of these activities.

No.	Title	Pts.	Description
PR-1	Environmental Review Process	Req	Complete a comprehensive environmental review
PR-2	Lifecycle Cost Analysis (LCCA)	Req	Perform LCCA for pavement/bridge section
PR-3	Lifecycle Inventory (LCI)	Req	Perform LCI of pavement/bridge materials
PR-4	Quality Control Plan	Req	Have a formal contractor quality control plan
PR-5	Noise Mitigation Plan	Req	Have a construction noise mitigation plan
PR-6	Waste Management Plan	Req	Have a plan to divert C&D waste from landfill
PR-7	Pollution Prevention Plan	Req	Have a TESC/SWPPP
PR-8	Low Impact Development (LID)	Req	Complete a LID feasibility study
PR-9	Pavement Management System	Req	Have a pavement/bridge management system
PR-10	Site Maintenance Plan	Req	Have a roadside maintenance plan
PR-11	Educational Outreach	Req	Publicize sustainability information for project

## ENVIRONMENT & WATER

No.	Title	Pts.	Description
EW-1	Environmental Management System	2	ISO 14001 certification for general contractor
EW-2	Runoff Flow Control	1-3	Reduce runoff quantity
EW-3	Runoff Quality	1-3	Treat stormwater to a higher level of quality
EW-4	Stormwater Cost Analysis	1	Conduct an LCCA for stormwater elements
EW-5	Site Vegetation	1-3	Use native low/no water vegetation
EW-6	Habitat Restoration	3	Restore habitat beyond what is required
EW-7	Ecological Connectivity	1 or 3	Connect habitat across roadways
EW-8	Light Pollution	3	Discourage light pollution

## ACCESS & EQUITY

No.	Title	Pts.	Description
AE-1	Safety Audit	1-2	Perform roadway safety audit
AE-2	Intelligent Transportation Systems (ITS)	2-5	Implement ITS solutions
AE-3	Context Sensitive Solutions	5	Plan for context sensitive solutions
AE-4	Traffic Emissions Reduction	5	Reduce emissions with quantifiable methods
AE-5	Pedestrian Access	1-2	Provide/improve pedestrian accessibility
AE-6	Bicycle Access	1-2	Provide/improve bicycle accessibility
AE-7	Transit Access	1-5	Provide/improve transit accessibility
AE-8	Scenic Views	1-2	Provide views of scenery or vistas
AE-9	Cultural Outreach	1-2	Promote art/culture/community values

**For credit details, including documentation requirements, visit [greenroads.org/manual](http://greenroads.org/manual).**

## CONSTRUCTION ACTIVITIES

No.	Title	Pts.	Description
CA-1	Quality Management System	2	ISO 9001 certification for general contractor
CA-2	Environmental Training	1	Provide environmental training
CA-3	Site Recycling Plan	1	Have a plan to divert waste from landfill
CA-4	Fossil Fuel Reduction	1-2	Use alternative fuels in construction equipment
CA-5	Equipment Emissions Reduction	1-2	Meet EPA Tier 4 standards for non-road equip.
CA-6	Paving Emissions Reduction	1	Use pavers that meet NIOSH requirements
CA-7	Water Tracking	2	Develop data on water use in construction
CA-8	Contractor Warranty	3	Warranty on the constructed pavement

## MATERIALS & RESOURCES

No.	Title	Pts.	Description
MR-1	Life Cycle Assessment (LCA)	2	Conduct a detailed LCA of the entire project
MR-2	Pavement Reuse	1-5	Reuse existing pavement sections
MR-3	Earthwork Balance	1	Use native soil rather than import fill
MR-4	Recycled Materials	1-5	Use recycled materials for new pavement
MR-5	Regional Materials	1-5	Use regional materials to reduce transportation
MR-6	Energy Efficiency	1-5	Improve energy efficiency of operational systems

## PAVEMENT TECHNOLOGIES

No.	Title	Pts.	Description
PT-1	Long-Life Pavement	5	Design pavements for long-life
PT-2	Permeable Pavement	3	Use permeable pavement as a LID technique
PT-3	Warm Mix Asphalt (WMA)	3	Reduce production energy at plant for binders
PT-4	Cool Pavement	5	Contribute less to urban heat island effect (UHI)
PT-5	Quiet Pavement	3	Use a quiet pavement to reduce noise
PT-6	Pavement Performance Tracking	1	Relate construction to performance data

## CUSTOM CREDITS

Up to 10 submittals for Custom Credits are allowed for all projects. Points for each credit range from 1 to 5 points, up to a maximum of 10 points possible to be earned on any project.

No.	Title	Pts.	Description
CC-1	Custom Credit 1	1-5	Design a new voluntary credit
CC-2	Custom Credit 2	1-5	Design a new voluntary credit

## CERTIFICATION AWARD LEVELS

Level	Project Requirements	Minimum Pts.	Maximum Pts.	% of Voluntary Credits Achieved
Bronze	11	32	42	30-39
Silver	11	43	53	40-49
Gold	11	54	63	50-59
Evergreen	11	64	118	60+

For credit details, including documentation requirements, visit [greenroads.org/manual](http://greenroads.org/manual).

# APPENDIX B

Scoring Method



## BASIC ASSESSMENT – STANDARD SCORECARD

The Greenroads Standard Scorecard (simply “Scorecard”) is completed using the approaches described below for Project Requirements, Voluntary Credits and Custom Credits.

### PROJECT REQUIREMENTS

**Project Requirements** are evaluated based on the intent shown by actual Project documents or by verbal confirmation of intent. If clear intent is present, the Scorecard shows an “x” in the “Y(es)” column. If not, the “x” is placed in the “?” column. By design, it is *possible* to complete all 11 Project Requirements, so none will receive an “x” in the “N(o)” column. We recognize that this perspective is optimistic and that special constraints or local requirements may make some activities more difficult or onerous to document if certification is pursued.

- Demonstrating intent to complete a Project Requirement is sufficient for the purposes of this review. Most, if not all, Project Requirements can be addressed early in project decision-making. However, the complete documentation for all Project Requirements would be required if any future certification is to be pursued.
- For projects that are finalizing design or in construction at the time Greenroads is considered, it may be difficult or simply cost-prohibitive to meet the documentation requirements for certification (if desired). However, the goal of this review is to demonstrate the maximum project potential so that credits can be considered next time.
- Project Requirements carry no point value and do not add or subtract from the total score.

### VOLUNTARY CREDITS

**Voluntary Credits** are evaluated based on the intent shown by actual Project documents or by verbal confirmation of intent. If clear intent is present, the Scorecard shows a number in the “Y(es)” column for the number of points achieved. If not, a number is placed in the “?” column, meaning that many points could be considered as feasible for the Project. A number for the remaining points is placed in the “N(o)” column only if those points would not be reasonable or practical for the Project based on known constraints and scope.

- Demonstrating intent alone to complete Voluntary Credits is sufficient for purposes of this review. This is because the elected Voluntary Credits can often change throughout the design and construction process and the purpose of this assessment is to demonstrate a potential score. Again, the approach used makes the required documentation needs very transparent for future certification efforts while also highlighting notable opportunities.
- Credits marked as “Y” or “?” in bolded text could potentially reduce cost or be completed at minimal or no additional cost to the initial construction price.
- Voluntary Credits carry a variety of values and range from 1 to 5 points. Please refer to the *Greenroads Manual* for further details on how Voluntary Credits are weighted.

### CUSTOM CREDITS

Potential **Custom Credits** are evaluated similarly to the Voluntary Credits, but typically these are verbally described activities instead of documented activities. Custom Credits are submitted by registered projects pursuing certification and subjected to rigorous review prior to their approval for broad use in other projects. For purposes of this assessment, the Scorecard shows short titles that represent the basic concept of proposed Custom Credits as well as an estimated number of points. Points for Custom Credits are assigned according to the existing weighting scheme used in the *Greenroads Manual*.

## DETAILED ASSESSMENT – ANNOTATED SCORECARD

An annotated version of the Standard Scorecard is provided for Detailed Assessments and Detailed Pilot Projects. The purpose of the Annotated Scorecard is to add depth to the information provided in the Standard Scorecard.

### EFFORT TO COMPLETE

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Greenroads estimates the level of effort that is anticipated or perceived to be needed to complete and document the credit given the context of the Project. The “Effort to Complete” section on the Annotated Scorecard reflects this estimate of effort the credit were to be pursued during Project Certification.

Specifically, Greenroads defines “effort” needed in the context of Project Certification by any of the following.

- Amount of documentation required by Greenroads
- Amount of time to provide and generate documentation that is in addition to standard project documentation
- Amount of resources that may or may not be physically available or accessible to complete a task, implement a technology or practice, or to document them
- Amount of money involved in earning and documenting a Greenroads credit
- Conflicts with existing regulatory standards, if any
- Conflicts with implementing Greenroads credits in the design process, if any
- Conflicts with implementing Greenroads credits in the construction process, if any
- Any learning curve that might be associated with a particular credit, requiring additional time investment

### Scale

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Effort is evaluated on a scale of low to high, and credits which were not appropriate or applicable to a particular project are marked as “N/A”. For Project Requirements, an “X” is used to indicate associated effort. For Voluntary Credits, points are shown according to their relative difficulty to achieve and their applicable point spread according to the *Greenroads Manual*.

### Educated Estimate

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The estimate of effort is based on our understanding of the Project, the existing research for a particular credit, experience with other projects, and the demonstrated intent to complete the credit based the stated goals of the Project Team in conversation or as otherwise demonstrated in documents provided for the Assessment.

However, estimated points in the Annotated Scorecard or the Standard Scorecard may not reflect actual Project conditions or its position for successful certification because documentation reviewed for Assessment purposes is limited. The estimates provided by Greenroads in no way imply that the Project *will* earn any particular credit and the information shown in the Scorecards should not be presumed to be a guarantee or statement of future approval under any circumstances.

### NOTES

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Specific comments about each credit are provided by the Greenroads Reviewer indicating where the intent was identified in the provided documents (if any) and some special comments regarding the credit for the Project Team to consider. This section does not influence the final computation of Greenroads Rating.

## APPENDIX C

Greenroads Scorecards





**Project Name**  
**Location (City, State)**  
**Project Manager**  
**Project Budget**  
**Current Status (Circle)**

12NZ00003 Wellington Inner City Improvements - Buckle Street Underpass  
 Wellington, New Zealand  
 Vanessa Browne  
 70.0 million (USD)  
 Construction

**Project Requirements (PR) PR Max: 11 7 4 0**

No.	Title		Y	?	N
PR-1	Environmental Review Process	Req	x		
PR-2	Lifecycle Cost Analysis	Req		x	
PR-3	Lifecycle Inventory	Req		x	
PR-4	Quality Control Plan	Req		x	
PR-5	Noise Mitigation Plan	Req	x		
PR-6	Waste Management Plan	Req		x	
PR-7	Pollution Prevention Plan	Req	x		
PR-8	Low-Impact Development	Req	x		
PR-9	Pavement Management System	Req	x		
PR-10	Site Maintenance Plan	Req	x		
PR-11	Educational Outreach	Req	x		

**Environment & Water (EW) EW Max: 21 4 17 0**

No.	Title		Y	?	N
EW-1	Environmental Management System	2	2		
EW-2	Runoff Flow Control	1 - 3	1	2	
EW-3	Runoff Quality	1 - 3	1	2	
<b>EW-4</b>	<b>Stormwater Cost Analysis</b>	<b>1</b>		<b>1</b>	
<b>EW-5</b>	<b>Site Vegetation</b>	<b>1 - 3</b>		<b>3</b>	
EW-6	Habitat Restoration	3		3	
EW-7	Ecological Connectivity	1 - 3		3	
EW-8	Light Pollution	3		3	

**Access & Equity (AE) AE Subtotal: 30 18 11 1**

No.	Title		Y	?	N
AE-1	Safety Audit	1 - 2	2		
AE-2	Intelligent Transportation Systems	2 - 5		5	
AE-3	Context Sensitive Solutions	5	5		
AE-4	Traffic Emissions Reduction	5		5	
AE-5	Pedestrian Access	1 - 2	2		
AE-6	Bicycle Access	1 - 2	2		
AE-7	Transit & HOV Access	1 - 5	4		1
AE-8	Scenic Views	2	2		
AE-9	Cultural Outreach	1 - 2	1	1	

**Construction Activities (CA) CA Max: 14 3 11 0**

No.	Title		Y	?	N
CA-1	Quality Management System	2		2	
<b>CA-2</b>	<b>Environmental Training</b>	<b>1</b>		<b>1</b>	
<b>CA-3</b>	<b>Site Recycling Plan</b>	<b>1</b>		<b>1</b>	
CA-4	Fossil Fuel Reduction	1 - 2		2	
CA-5	Equipment Emission Reduction	1 - 2		2	
<b>CA-6</b>	<b>Paving Emission Reduction</b>	<b>1</b>		<b>1</b>	
<b>CA-7</b>	<b>Water Use Tracking</b>	<b>2</b>		<b>2</b>	
CA-8	Contractor Warranty	3	3		

**Materials & Resources (MR) MR Max: 23 3 20 0**

No.	Title		Y	?	N
MR-1	Lifecycle Assessment	2		2	
MR-2	Pavement Reuse	4 - 5		5	
MR-3	Earthwork Balance	1		1	
<b>MR-4</b>	<b>Recycled Materials</b>	<b>1 - 5</b>		<b>5</b>	
MR-5	Regional Materials	1 - 5	3	2	
MR-6	Energy Efficiency	5		5	

**Pavement Technologies (PT) PT Max: 20 8 7 5**

No.	Title		Y	?	N
PT-1	Long-Life Pavement	5			5
PT-2	Permeable Pavement	3	3		
PT-3	Warm Mix Asphalt	3		3	
PT-4	Cool Pavement	5	5		
PT-5	Quiet Pavement	2 - 3		3	
PT-6	Pavement Performance Tracking	1		1	

**Custom Credit (CC) CC Max: 10 1 6 3**

No.	Title		Y	?	N
CC-1	STP	1 - 2	1	1	
<b>CC-2</b>	<b>Workzone Safety</b>	<b>1 - 2</b>		<b>2</b>	
<b>CC-4</b>	<b>Roadside Revegetation</b>	<b>1 - 3</b>		<b>3</b>	
<b>CC-7</b>	<b>Freight Access</b>	<b>1 - 5</b>		<b>5</b>	

<b>All 11 PR Met?</b>	<b>No</b>		
<b>Greenroads Total (Max 118)</b>	<b>37</b>	<b>72</b>	<b>9</b>



Project Name  
 Location (City, State)  
 Team Manager  
 Project Budget  
 Current Status

Buckle Street Underpass  
 Wellington, New Zealand  
 Vanessa Browne  
 \$70.0 million (USD)  
 Construction

The "Intent" columns shows if documents or verbal confirmation was provided that demonstrates the project intends to meet the goal of a credit.  
 The "Effort" columns indicates the amount of effort (in time or documentation) the reviewer believes will be required for the project achieve a credit.  
 The "Verbal" column indicates if intent was demonstrated based on supplemental interviews, discussions or correspondence with the Project Team.

Project Requirements (PR)			Intent		Effort to Complete				Verbal	Notes
No.	Title		Yes	No	Low	Med	High	N/A		
PR-1	Environmental Review Process	Req	X		X					Assessment of the Environmental Effects (AEE) was submitted for Basin Bridge Project, and demonstrates intent. The project team would need to clarify how this report meets the project requirements for the Buckle Street Project.
PR-2	Lifecycle Cost Analysis	Req		X	X					Project team has provided no documentation for this credit for review. This credit can be completed retroactively to meet the credit requirements.
PR-3	Lifecycle Inventory	Req		X	X					Project team has provided no documentation for this credit for review. This credit can be completed retroactively to meet the credit requirements.
PR-4	Quality Control Plan	Req		X	X					Intent to complete was not evident from the provided documents. Project Team would need to show how quality is being controlled on the project by the Contractor for certification.
PR-5	Noise Mitigation Plan	Req	X		X					Noise Management Plans for Temporary Road and the Underground were provided.
PR-6	Waste Management Plan	Req		X	X					Intent to complete was not evident from the provided documents. CWMP would need to be provided by the Contractor demonstrating how waste was managed throughout construction for certification.
PR-7	Pollution Prevention Plan	Req	X		X					Documentation states that the contractor will be required to provide and monitor an Erosion and Sediment Control Plan (E&SCP). It is unclear if this plan meets requirements for the USEPA CGP which is the referenced standard for this credit.
PR-8	Low-Impact Development	Req	X		X					Submitted Stormwater Design Requirements describe LID technologies to be implemented.
PR-9	Pavement Management System	Req	X		X				X	Evidence of a PMS was shown on Wellington City website. Alliance contract structure may also meet this requirement but would need further explanation for certification.
PR-10	Site Maintenance Plan	Req	X		X				X	Documents suggest there is a master Construction Management Plan that will cover site maintenance. Alliance contract structure may also meet this requirement but would need further explanation for certification.
PR-11	Educational Outreach	Req	X		X					Stakeholder and Communications Management Plan and Stakeholder and Communications Action Plan suggest that this will be completed. Documentation of 3 Educational Outreach items would need to be submitted to achieve this requirement.
PR Max: 11					11	0	0	0		



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 The "Effort" columns indicates the amount of effort (in time or documentation) the reviewer believes will be required for the project achieve a credit.  
 The "Verbal" column indicates if intent was demonstrated based on supplemental interviews, discussions or correspondence with the Project Team.

Environment & Water (EW)			Intent		Effort to Complete				Verbal	Notes
No.	Title	Pts.	Yes	No	Low	Med	High	N/A		
EW-1	Environmental Management System	2	X		2					Documentation of ISO 14001:2004 certification was submitted.
EW-2	Runoff Flow Control	1-3	X		1		2			The Stormwater Design Requirements document suggests that new stormwater drainage and treatment structures will be installed. Calculations would need to be submitted to determine the level of Runoff Flow Control and Runoff Quality achieved.
EW-3	Runoff Quality	1-3	X		1		2			The Stormwater Design Requirements document suggests that new stormwater drainage and treatment structures will be installed. Calculations would need to be submitted to determine the level of Runoff Flow Control and Runoff Quality achieved.
EW-4	Stormwater Cost Analysis	1		X	1					Intent to complete was not evident from the provided documents.
EW-5	Site Vegetation	1-3		X	3					Intent to complete was not evident from the provided documents.
EW-6	Habitat Restoration	3		X			3			Intent to complete was not evident from the provided documents.
EW-7	Ecological Connectivity	1-3		X			3			Documentation suggests that all culverts and bridges will be replaced but it is unclear if this has anything to do with wildlife.
EW-8	Light Pollution	3		X		3				Intent to complete was not evident from the provided documents.
EW Max: 21					8	3	10	0		



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 The "Effort" columns indicates the amount of effort (in time or documentation) the reviewer believes will be required for the project achieve a credit.  
 The "Verbal" column indicates if intent was demonstrated based on supplemental interviews, discussions or correspondence with the Project Team.

Access & Equity (AE)			Intent		Effort to Complete				Verbal	Notes
No.	Title	Pts.	Yes	No	Low	Med	High	N/A		
AE-1	Safety Audit	1-2	X		2					The Wellington Urban Development Code of Practice for Road Design & Construction states that at least one Safety Audit is required and that another may be required by the Council.
AE-2	Intelligent Transportation Systems	2-5		X			5			Intent to complete was not evident from the provided documents.
AE-3	Context Sensitive Solutions	5	X		5					Design Requirements: Urban Design document describes CSS options analyzed
AE-4	Traffic Emissions Reduction	5		X			5			Intent to complete was not evident from the provided documents.
AE-5	Pedestrian Access	1-2	X		2					Project website states that project will "create additional green-space making walking and cycling to work easier for the city's residents".
AE-6	Bicycle Access	1-2	X		2					Project website states that project will "create additional green-space making walking and cycling to work easier for the city's residents".
AE-7	Transit & HOV Access	1-5	X		4			1		Urban Landscape and Design Framework document says "new dedicated bus lanes are proposed on Ellice Street, Dufferin Street and Buckle Street, and the southbound bus stop is proposed to be relocated from Adelaide Road onto Rugby Street."
AE-8	Scenic Views	2	X		2				X	The project provides access to park space.
AE-9	Cultural Outreach	1-2	X		1	1			X	Many of the documents indicate that there may be culturally significant sites nearby, but it is not clear to what extent the project will highlight these features with art or cultural installations.
AE Max: 30					18	1	10	1		



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The "Intent" column shows if documents or verbal confirmation was provided that demonstrates the project intends to meet the goal of a credit.  
 The "Effort" column indicates the amount of effort (in time or documentation) the reviewer believes will be required for the project achieve a credit.  
 The "Verbal" column indicates if intent was demonstrated based on supplemental interviews, discussions or correspondence with the Project Team.

Construction Activities (CA)			Intent		Effort to Complete				Verbal	Notes
No.	Title	Pts.	Yes	No	Low	Med	High	N/A		
CA-1	Quality Management System	2		X		2				Intent to complete was not evident from the provided documents.
CA-2	Environmental Training	1		X	1					Intent to complete was not evident from the provided documents.
CA-3	Site Recycling Plan	1		X	1					Intent to complete was not evident from the provided documents. This credit can often be combined with PR-6 Waste Management Plan.
CA-4	Fossil Fuel Reduction	2		X			2			Intent to complete was not evident from the provided documents.
CA-5	Equipment Emission Reduction	2		X			2			Intent to complete was not evident from the provided documents.
CA-6	Paving Emission Reduction	1		X	1					Intent to complete was not evident from the provided documents. This credit is often achievable with standard paving procedures depending on contractor.
CA-7	Water Use Tracking	2		X	2					Intent to complete was not evident from the provided documents.
CA-8	Contractor Warranty	3	X		3				X	Alliance contract structure may also meet this requirement but would need further explanation for certification.
CA Max: 14					8	2	4	0		



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The "Intent" column shows if documents or verbal confirmation was provided that demonstrates the project intends to meet the goal of a credit.  
 The "Effort" column indicates the amount of effort (in time or documentation) the reviewer believes will be required for the project achieve a credit.  
 The "Verbal" column indicates if intent was demonstrated based on supplemental interviews, discussions or correspondence with the Project Team.

Materials & Resources (MR)			Intent		Effort to Complete				Verbal	Notes
No.	Title	Pts.	Yes	No	Low	Med	High	N/A		
MR-1	Lifecycle Assessment	2		X			2			Intent to complete was not evident from the provided documents.
MR-2	Pavement Reuse	1-5		X		5				The project is creating a new roadway, so it is unlikely that much of the pavement can be reused.
MR-3	Earthwork Balance	1		X		1				Intent to complete was not evident from the provided documents.
MR-4	Recycled Materials	1-5		X	2		3			Intent to complete was not evident from the provided documents. Use of Recycled Asphalt Pavement (RAP) often accounts for 20% of a mix design for 2 points.
MR-5	Regional Materials	1-5	X		3	2			X	It appears likely that the project will source many of the materials locally on the North Island.
MR-6	Energy Efficiency	5		X		5				Intent to complete was not evident from the provided documents.
MR Max: 23					5	13	5	0		



Project Name  
 Location (City, State)  
 Team Manager  
 Project Budget  
 Current Status

Buckle Street Underpass  
 Wellington, New Zealand  
 Vanessa Browne  
 \$70.0 million (USD)  
 Construction

The "Intent" columns shows if documents or verbal confirmation was provided that demonstrates the project intends to meet the goal of a credit.  
 The "Effort" columns indicates the amount of effort (in time or documentation) the reviewer believes will be required for the project achieve a credit.  
 The "Verbal" column indicates if intent was demonstrated based on supplemental interviews, discussions or correspondence with the Project Team.

Pavement Technologies (PT)			Intent		Effort to Complete				Verbal	Notes
No.	Title	Pts.	Yes	No	Low	Med	High	N/A		
PT-1	Long-Life Pavement	5		X				5		The Pavement Structures and Surfacing document suggest pavements will be designed for 30 years and structures for 40 years. This does not meet the requirements of this credit.
PT-2	Permeable Pavement	3	X		3					The Pavement Structures and Surfacing document suggests that structural pavements and intersections, approaches, and high stress areas may be paved with an Open Graded Porous Asphalt (OGPA) which would likely meet the requirements of this credit. The Basin Bridge Project Proposed Road Surface Types indicates that much of the Buckle Street project will be permeable. Stormwater calculations would need to be provided to show the requirements are met.
PT-3	Warm Mix Asphalt	3		X		3				Intent to complete was not evident from the provided documents. It is unclear if this material is available in New Zealand.
PT-4	Cool Pavement	5	X		5					The Basin Bridge Project Proposed Road Surface Types indicates that much of the Buckle Street project will be permeable. For Certification calculations would need to be submitted showing that more than 50% of the exposed project pavements are open graded.
PT-5	Quiet Pavement	2-3		X			3			Intent to complete was not evident from the provided documents.
PT-6	Pavement Performance Tracking	1		X			1			This credit is very difficult to achieve due to lack of available technology. A custom system would need to be created and implemented for the project, requiring substantial effort.
PT Max: 20					8	3	4	5		



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Custom Credit (CC)			Intent		Effort to Complete				Verbal	Notes
No.	Title	Pts.	Yes	No	Low	Med	High	N/A		
CC-1	STP	1-2	X		1	1				The project can easily earn 2 points for having Sustainable Transportation Professionals involved with the project. URS Corporation, that participated on this project, has at least 1 STP.
CC-2	Workzone Safety	1-2		X	2					Project would need to show that JHAs are in place and/or there is a Site Safety Officer.
CC-3	Pavement Smoothness	1-5		X		5				Intent to complete was not evident from the provided documents.
CC-4	Roadside Revegetation	1-3		X	1	1	1			This credit is more applicable than EW-6 Habitat Restoration for urban environments. This may be achieved due to the park work.
CC-5	Electric Vehicle Infrastructure	1-5		X			5			Intent to complete was not evident from the provided documents.
CC-6	Alternative Energy	1-5		X			5			Intent to complete was not evident from the provided documents.
CC-7	Freight Access	1-5		X	2		3			Intent to complete was not evident from the provided documents. The project may be on track to complete up to 2 points.
CC-8	Design for Disassembly	1-5		X			5			Intent to complete was not evident from the provided documents.
CC-9	VOC Reduction	1-2		X		2				Intent to complete was not evident from the provided documents.
CC Max: 10					6	9	19	0		