



American Public Works Association
Emerging Leaders Academy
Class V

Sustainability in Public Works
Final Project Report

August 2012

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ELA Class V with Sue and Deana in Kansas City

Section 1 Project Background

Within the last five years, there has been a renewed emphasis on planning, building and operating sustainable Public Works infrastructure projects. In 2008, American Public Works Association (APWA) created the Center for Sustainability. This organization was established “to build a strong foundation and action plan to ensure APWA becomes a driving force in sustainability in Public Works management...” Last year, APWA also joined forces with the American Society of Civil Engineers (ASCE) and American Council of Engineering Companies (ACEC) to further reach its goal of promoting sustainable engineered solutions that are economically, environmentally, and socially responsible.

APWA's Center for Sustainability has four long term priorities, including the following:

- To establish a framework for sustainability to assist Public Works professionals in taking a systems approach to a situation.
- To develop professional development training and education opportunities for APWA members.
- To identify strategic partners at the federal, state, and local levels to leverage resources and promote change.
- To advocate for sustainability principals at the federal, state and local levels of government.

In 2010, the partnership between the ASCE, ACEC, and APWA formed the Institute for Sustainable Infrastructure. This non-profit organization was founded to develop a comprehensive widely-accepted rating and award system for sustainable infrastructure projects as part of an initiative to promote more effective and efficient engineered solutions. The organization has developed the Envision™ Rating Tool, which was released for commercial use in 2012.

Although there are many rating systems currently in place that score projects on their environmental sustainability, very few address the needs for infrastructure projects, including transportations projects. The United States Green Building Council's Leadership in Energy and Environmental Design (LEED) is one of the most utilized rating systems. LEED has made excellent progress in providing a rating system for buildings; however, the tool does not adapt as well to projects that do not include vertical construction. The Greenroads Rating System is available for use on roadway specific projects, but Public Works projects encompass more than just roads. The need has developed for a rating system specific to

Public Works projects, and ISI has developed the Envision™ tool with this in mind. Envision™ provides a holistic framework for evaluating and rating the community, environmental and economic benefits of all types and sizes of infrastructure projects. The Envision™ Rating System evaluates, grades, and gives recognition to infrastructure projects that use transformational, collaborative approaches to assess the sustainability indicators over the course of the project's life cycle. Envision™ can be used by infrastructure owners, design teams, community groups, environmental organizations, constructors, regulators, and policy makers. The tool is design to help professionals:

- Meet sustainability goals.
- Be publicly recognized for high levels of achievement in sustainability.
- Help communities and project teams to collaborate and discuss, "Are we doing the right project?" and, "Are we doing the project right".
- Make decisions about the investment of scarce resources.
- Include community priorities in civil infrastructure projects.

The Envision™ tool is versatile, as it can assist in evaluating projects from a planning and design perspective. The design team can utilize the Envision™ tool to:

- Assess costs and benefits over the project lifecycle.
- Evaluate environmental benefits.
- Use outcome-based objectives.
- Reach higher levels of sustainability achievement.

The Envision™ Sustainable Infrastructure Rating System is made up of 60 credits divided into five sections:

- Quality of Life
- Leadership
- Resource Allocation
- Natural World
- Climate and Risk.

Each Envision™ credit is described in a 2-page write-up that includes the intent, metric, levels of achievement, description, an explanation of how to advance to a higher achievement level, evaluation criteria and documentation, sources, and related credits.

Envision™ has assessment tools that can be used for infrastructure projects of all types, sizes, complexities, and locations. These tools are

broken in to four stages to better help the user implement the tool. Each stage is listed below:

Self-Assessment Checklist: The self-assessment checklist helps familiarize project teams implement sustainable aspects of infrastructure projects.

Envision™ Sustainable Infrastructure Rating System. This stage involves a scoring system and assessment criteria for project teams to document sustainability achievements. This stage also enables a project team to submit a project for recognition. This stage requires that someone trained in the use of the Envision™ rating system is an integral part of the project team. During this stage, an independent, third-party verifier validates the project team's assessment to make sure that it is correct and that the project is rated correctly. Included in the assessment are criteria to evaluate construction, operation, and maintenance aspects of a proposed project.

Stage 3 and Stage 4: These two stages are as of yet incomplete, but should be available after 2012. These stages will consist of the a tool for complex or multi-stage projects as well as an optimization support tool.

1. Project Goals and Mission Statement:

This section summarizes the mission statement, as well as the project goals for ELA V. The project goals were discussed and decided upon as a group during the class retreat in Kansas City in October 2011. The goals focus on increasing awareness of sustainability principals and methods to those in the Public Works profession. The project goals were determined to include the following:

- Investigate currently available tools such as the Center's Framework for Sustainable Communities (http://www2.apwa.net/documents/sust/framework_designFINAL.pdf) and ISI's Envision™ sustainability rating system (sustainableinfrastructure.org).
- Produce a packet of tools that can be distributed to Public Works professionals that would assist them in integrating sustainable practices and policies into their organizations and projects:
 - Guidance for creating sustainability-focused RFPs
 - Sample Board/Council letters to implement sustainable policies into local ordinances
 - Video explaining what sustainability means in Public Works and the Institute for Sustainable Infrastructure
- Develop a pilot program

- Develop a plan to distribute the packet to Public Works departments throughout the U.S.

Mission Statement: The following mission statement was created to summarize the goals and refine the project definition:

To provide public works professionals with resources that help them incorporate sustainable practices into Public Works projects.

As “sustainable practices” is part of our mission statement, our group had a discussion on what the definition of sustainability will be for the purpose of our project. The group has determined that our working definition of sustainability will be as follows:

“Sustainability is the continued development of environmental, economical and societal needs without exhaustion of natural resources.”

2. Expected Outcomes: The expected outcomes for the project were as follows:

- Distribute a packet to Public Works professionals that include tools to incorporate sustainable practices into their projects and organizations, including:
 - RFP/RFQ Guide: This RFP/RFQ Guide will help RFP initiators become more comfortable with the topic of sustainability and will show them how to incorporate sustainability principles into RFPs.
 - List of Sustainable Resources: This list will provide a quick and easy reference for local governments to locate and view sustainability resources. This facilitation of resources will increase the possibility of including these options in local mind-set, projects, standards, and specifications.
 - Example Board/Council Letters: One part of this component will include creating example letters that cities and counties can present to their Board or City Council in order to join ISI. Another component will be a letter that would commit cities, counties, and towns to consider sustainable practices throughout each project. These examples will create an opportunity for local government staff to approach their decision makers and increase awareness of the sustainable solutions available.
 - Assist with creation of a video that will discuss sustainable principles that will benefit Public Works professionals. This

video will help increase awareness of sustainability and resources available regarding sustainable solutions.

3. Project Definition: Based on the project goals, mission statement, and the expected outcomes previously stated in this document, the project was defined into the following elements:
 - a. Coordination with members of the APWA Center for Sustainability (Center). Close coordination with the Center to build on work already underway, as well as management of current and future sustainability efforts. The team will work with the Center members to complete the video component of the project, which will be shown in part during the ELA Congress presentation in August.
 - b. Coordination with the Institute for Sustainable Infrastructure (ISI). Organization of past, current, and future work in the sustainable infrastructure field by the ISI will continue, as well as management of the contribution of the APWA Emerging Leaders Academy V.
 - c. Coordination with organizations such as Green Cities California, which are promulgating sustainable policies among municipalities.
 - d. Formulation of a “how to guide” of implementation of sustainable practices for local city, and county governments, as well as consultants, Public outreach, professional organization initiatives, and technical committee coordination. ELA V will distribute this packet to select Public Works leaders to gain feedback and will make a recommendation regarding dissemination of the packet subsequent to completion of the class project.
 - e. Implementation of a small scale pilot programs and projects, including the evaluation of effectiveness. One pilot project will focus on implementation of the ISI rating system.

4. Project Team Roles/Responsibilities: ELA V consists of 16 members from the following locations throughout the country: California, Washington D.C, Iowa, Missouri, Washington, Georgia, Wisconsin, Texas, Utah, and South Carolina. Morgan Wazlaw was selected as the project lead at the class retreat in Kansas City in October 2011. After the retreat, the class was divided into five groups and a team lead was selected for each of the groups. Additionally, the team members that will present the class project at APWA Congress in August 2012 were selected. The groups are listed in Table 1. In addition, the center mentors who greatly assisted in the preparation of each of the work products are listed in Table 1.

Table 1
Class V Groups

Project Component	Team Members	Center Mentor(s)
RFP/RFQ	Matthew Spencer* Michael Campbell Nathan Hladky	Scott Whalen
Pilot Program	Tony Fietzer Brian Coopman* Erin Jones Tyler Smith	Howard LaFever Vicki Quiram
Board/Council Letters	Mary Powers* Todd Marti	Carl Quiram
Resource List/Database of Sustainability Professionals	Jeff Baxter* William Simon Ryan Welsing Greer Hill	Mary Anderson Keith Reester
Video	Ryan Gallagher Homa Mojtabai*	Jennifer Adams Vicki Quiram
Presenters	Erin Jones Nathan Hladky* Ryan Gallagher Jeff Baxter	Mary Pat Baldauf
Project Lead	Morgan Wazlaw	
*Indicates Team Lead		

Section 2 **Methodology**

Communication

Between October 2011 and July 2012, the ELA class members met for monthly conference calls. Additionally, each team met once a month and the team leads met once a month to coordinate. Team members stayed in touch via email constantly throughout the process and utilized a Google Groups sharing website to upload files, share links, and send messages to each other. Team leads were responsible for managing the workload among team members, making sure that reports were submitted on time, organizing team phone calls, and coordinating with other team leads throughout the project. APWA Center representatives were contacted as needed to provide guidance and review to the ELA team. A representative from the ELA group participated in the APWA Center monthly calls for updates and to stay informed on projects and progress.

Status Reports

Each month, a brief status report was sent to Sue, Deana, and Ann regarding the progress of the deliverables. The team leads were responsible for compiling information on their portion of the project and sending it to the project leader.

Project Plan

A first draft project plan was created in November 2011 and was subsequently updated three times, with the final project plan completed in March 2012. The project plan formed the basis for the team's efforts and an outline for the written report.

Outline

An outline for the written report was drafted in April 2012 and sent to the team leads. For consistency, the team leads agreed upon seven categories that each of the team leads would discuss in a summary of their project component: Goals/Objectives, Evaluation, Expected Outcomes, Roles/Responsibilities, Methodology, Results, and Recommendations.

Written Report

Once the deliverables were completed, the team began writing the written report. Each team lead was responsible for writing a summary of their portion of the project and recommending next steps. The draft written report was completed on July 27, 2012 and the final report was completed on August 10, 2012.

Research

The primary sources of research for the team were online sources, including articles, websites, and online rating tools (including the Envision™ tool). In addition, team members discussed the project with members of the Center, our mentors Sue, Deana, and Ann, and other professions.

Congress Presentation

Following completion of the project components, the presentation team began meeting on a regular basis. Each member of the team was responsible for creating PowerPoint slides after an initial presentation outline was formed. These slides were then converted to Prezi format.

Section 3 Project Components

3.1 RFP/RFQ

Group Goals/Objectives

The objectives for the RFP/RFQ portion of the project were to (1) develop a guide that would help RFP initiators become more comfortable with the topic of sustainability and (2) teach them how to incorporate sustainability principles into their RFP's. The goals of creating RFP language that would promote sustainability successfully are as follows:

- Consistency with sustainability principles, as established by categories in the ISI Envision™ checklist
- Specific to the organization developing the RFP
- Utilize the ISI rating tool
- Encourage sustainable solutions
- Are cost effective, and budget conscious.

The ultimate goal of this project component is to encourage every Public Works professional drafting an RFP to include a section devoted to sustainability. Not only should sustainability principles be included in the RFP, but sustainability principles should be used as criteria to score every proposal.

Evaluation

The Request For Proposal (RFP) process is used by many different organizations throughout the United States. This process allows municipalities, DOT's, grant foundations, and other organizations to incorporate principles, such as sustainability principles, prior to choosing consultants to carry out projects. The RFP process is a unique opportunity to focus consultants on sustainability from the planning phases, to environmental review, to final design and specification development, to construction.

Originally the team researched hundreds of sample RFPs that promoted sustainable practices. A simple Google search of the topic led to verification of the team's thesis that the topic is overwhelming for most Public Works professionals. There are numerous groups that provide advice and rating systems for sustainable projects. The team planned to sift through the RFPs available online and to choose a few of the samples as model examples of sustainability language in an RFP. However, it became clear early on in the process that a guidance document recommendations and strategies for crafting an RFP with a focus on sustainable practices would be far more beneficial to

Public Works professionals. The primary tool the group used to incorporate sustainable principles into RFPs was the ISI Envision™ tool.

Expected Outcomes

The expected outcome of this project component is for Public Works professionals to have access to strategies and recommendations that will help them incorporate sustainability principles into their projects.

It is expected that by streamlining recommendations for inclusion in RFP language, Public Works professionals will become comfortable with sustainability principles and will become more familiar with scoring a project for compliance with sustainable principles.

Roles/Responsibilities

Matt Spencer was responsible for leading the group. Michael Campbell and Nathan Hladky assisted in the research for the group.

Methodology

As discussed above, the team researched numerous examples of RFP language before determining that the best way to provide RFP language was through recommendations and strategies that target sustainability. The team worked with various individuals in order to achieve the final version of the RFP recommendations and strategies. Scott Whalen from ISI was contacted as an initial reference and to help guide the project. Patty Hilderbrand, Director at Large for Engineering and Technology, provided the team with insight regarding implementation of rating systems. Jan Reumker of HNTB was contacted to provide examples of RFP language with sustainable principles incorporated.

Results

The RFP guidance document presented in Appendix A includes a brief explanation of the Envision™ tool, an introduction to the tool, and an introduction to the Institute of Sustainable Infrastructure. In addition, the document provides guidelines, scoring, lifecycle costs, and tips for crafting RFP language with sustainability considered at the forefront.

The RFP guidance document recommends that sustainability principles should be added to all RFP's as criteria to be used to score proposals. Traditionally, RFP's contain a section on how the proposals will be rated, ranked, and a winner chosen. If percentages are used, it is recommended that at least 5% of the total points available be allocated toward sustainability. This will ensure that all

proposals have at least some aspect of sustainability. As a result, a more environmentally friendly and cost effective project will be a direct outcome.

While creating a project that is sustainably designed and constructed is important, focus should also be made on the life cycle of the project. The utilization of existing infrastructure where possible, as well as maintenance of facilities should be assessed when thinking about creating a sustainable project. Not only is the goal to integrate sustainability into evaluation criteria, but also encourage that the final outcome is sustainable well into the future. Integration of this idea in RFP's will provide proposals and projects that reduce costs, maintenance efforts, and the projects impact on the finite resources available.

Too often it is an organizations habit of requiring the same standards on every project. Although the necessity of standards is understood, allowing alternative standards can often lead to reduced cost and an increase in a projects' sustainability rating. When crafting RFP language it is important that the proposals have enough flexibility to provide solutions that are innovative, which can increase the sustainability of a project in ways that the RFP's authors might not have imagined.

Although taking steps toward making more sustainable projects might seem complex, small steps can be taken that can generate major results. By following the guidelines included in Appendix A and summarized above, we hope that creating RFP's with sustainable guidelines will become easier, and more prevalent in Public Works. We live in a finite world and there will always be a struggle for the finite resources available. Our hope is that, in part through these RFP guidelines, Public Works professionals will create projects that extend these resources as much as possible.

Recommendations

We recommend that the RFP guidance document is disseminated with the rest of the ELA packet and sent to APWA Chapters. We also recommend that this document is posted on the APWA website.

3.2 Letters

Group Goals/Objectives

The objective for the Sample Board/Council Letters Group was to develop ways for governmental entities to implement sustainable policies in local ordinances. The documents developed in this section will be included in the packet of tools that will be distributed to Public Works professionals to help them explain to their governing Councils or Boards the benefits of joining ISI and how to join ISI.

Evaluation

The ISI rating tools were available commercially in 2012, so existing documents related to these tools were limited when the project began. There are a number of examples for other organizations, such as the APWA, that were used as the basis for these documents. The group looked for examples from these organizations, as well as other documents that have been used by governmental entities for similar purposes.

Expected Outcomes

The expected outcome was to develop two different documents; the first, a form letter that could be sent to governmental entities to explain the benefits of joining ISI, and the second an example proclamation that could be approved by a Council or Board.

Roles/Responsibilities

The two members of the group developing the sample Board/Council letters were Mary Powers and Todd Marti. Todd Marti conducted the search for examples from other organizations and developed the guidelines, and Mary Powers provided editorial support to the project.

Methodology

The group found examples of proclamations from the Jordan Valley Water Conservancy District, the Town of Westwood, the City of Thousand Oaks, and the American Public Works Association. These examples were used as the basis for the sample proclamation letter. The “Join ISI” section of the ISI website was used as the basis for the letter explaining the benefits of joining the organization, as well as the types of membership and where to get additional information.

Results

The group developed two documents. The first is a “How to Join ISI” letter that could be sent to interested governmental entities (Appendix B). This letter, which could also be posted to the ISI website, defines sustainability and outlines how ISI fills a current need in the Public Works community. It goes on to discuss the tools that ISI is developing, the benefits, and the types of membership. The second document developed by the group is a sample proclamation for a governmental entity to adopt to join ISI (Appendix C). Entities would pledge to join ISI, have their staff trained in the use of the Envision™ Rating System, have their staff utilize the Envision™ Rating System for new Public Works projects, and report these ratings to the public.

Two model Resolutions are attached to provide examples that have been adopted by boards. The first is a Resolution that was adopted by the City Council of the City of Thousand Oaks encouraging the use of a sustainable assessment checklist for infrastructure projects over \$500,000 in construction value and joining the Institute of Sustainable Infrastructure (Appendix D). Part of the Resolution was as follows:

NOW, THEREFORE, BE IT RESOLVED, that the City of Thousand Oaks will consider and document, by means of the sustainable assessment checklist provided by ISI, the feasibility of using sustainable methods for each Public Works project with a construction value over \$500,000. For all projects where the sustainable assessment checklist process demonstrates no negative economic impact, the recommended sustainable practices may be utilized in implementation of each project.

BE IT ALSO RESOLVED, that the City of Thousand Oaks will join the Institute of Sustainable Infrastructure at no cost, and that doing so will provides access to the assessment checklist and will position the City among the first of many progressive cities and towns in the nation to be designated as an ISI member.

Also included (Appendix E) is the staff report regarding the Resolution for membership to the Institute for Sustainable Infrastructure. The staff report recommends adopting the Resolution authorizing the City's membership to the Institute for Sustainable Infrastructure. It explains to the Council that the use of the Envision™ tool provides project managers with a standardized tool that will rate sustainable alternatives with minimal impact on staff time. The City's use of Envision™ will help advance ISI's mission to improve physical infrastructure nationwide, provide valuable feedback for future iterations of Envision™, and further the City's use of environmental practices in Public Works projects.

The Resolution above was prepared by Akbar Alikhan with the City of Thousand Oaks, who was assisted by members of the ELA class.

The second example (Appendix F) is from the Town of Westwood and provides a recommendation that the Board sign an application for Town membership to the Institute for Sustainable Infrastructure (ISI), which is complimentary to government agencies.

These documents will be helpful in showing government entities and public utilities the importance of membership in ISI and utilization of the Envision™ Rating System.

Recommendations

The group developed these documents with the expectation that they will encourage additional membership in ISI. As ISI develops more tools, updating these documents is recommended.

3.3 Pilot Project – Davenport, Iowa Roadway Project

Group Goals/Objectives

The objective of the pilot project was to identify a project that fit well with the goals developed by ISI. The team identified the Harrison Street Reconstruction project as a prime candidate since the City of Davenport had already taken steps to incorporate sustainability into the project. The goals of the project team were to measure the City's existing sustainability initiatives against those recommended by ISI and provide feedback regarding areas that could be improved as well as cost savings realized by implementing sustainable practices through the ISI checklist.

Evaluation

The team conducted research by evaluating the City's past practices, environmental assessment standards, and other operating procedures. At the time the ELA team began this pilot project, Envision™ had not been finalized or made available to the public; therefore little research on sample Envision™ assessments was feasible.

Expected Outcomes

The intent of the pilot project was to compare the project before and after the utilization of the Envision™ rating tool. It was expected that the project would be more cost effective and would incorporate further sustainable principles.

Roles/Responsibilities

Brian Coopman was the team lead for the pilot project team. Tony Fietzer, Erin Jones, and Tyler Smith provided support to this portion of the project through review, planning, and writing summaries of the results.

Results

As discussed above in Section 1, *Project Background*, the assessment tools are divided into four stages currently ranging from a self-assessment checklist to a third-party objective rating verification system, which upon completion would allow a project to be eligible for public recognition. Stage three and four are

anticipated to be available after 2012 and will consist of tools for multi-stage projects and support tools. For purposes of this pilot project the Public Works Staff in Davenport, Iowa utilized the Sustainable Infrastructure Rating System tool.

The project was already underway when the assessment was initialized, which shows that the Envision™ Rating System is a helpful tool in any stage of a project. In addition, the Sustainable Infrastructure Rating System tool can be tailored to fit any project. The tool allows a project team to state that a particular criterion is not applicable to that particular project.

The Davenport Reconstruction project involves reconstructing a 300 foot roadway. The original 300 feet of road was planned to be removed and replaced with two 17' roads divided by an 18' planting area and flanked by an 11-14' bioswale running the entirety of the new road. The City of Davenport was able to save approximately \$60,000.00 on their project by incorporating sustainable practices such as those found in the Sustainable Infrastructure Rating System.

The Sustainable Infrastructure Rating System tool that was completed for this roadway project is attached herein as Appendix G. In the Davenport assessment, many of the criteria were answered using information that was already available. Others items were more detailed and required additional resources.

Recommendations

Our team would recommend that municipalities join ISI and go through the Envision™ rating system prior to the design stage of any project. The team recommends that if a municipality seeks ISI recognition on a project, they should begin compiling documentation. Much of the scoring relies on providing documentation of neighborhood meeting minutes, stakeholder conversations, etc. When conducting the Sustainable Infrastructure Rating System tool for the Harrison Street Reconstruction pilot project, the City had completed many of the necessary requirements for a suitable ISI score; however, documentation of conversations or meeting minutes did not exist; therefore, the City was unable to pursue ISI recognition.

The team's broader recommendation is that this pilot project or a summary of the pilot project be sent to APWA Chapters to show Public Works professions that they can increase sustainability while reducing cost if they utilize the Envision™ rating system.

3.4 Video

Group Goals/Objectives

The APWA Center for Sustainability committed to developing and releasing a short video to inform, educate and inspire municipalities interested in learning more about practical and effective sustainable initiatives. The motivation in developing a video was twofold:

- Provide an informative and entertaining overview of sustainability and successful sustainable projects from a variety of municipalities and -
- Position the Center for Sustainability as a valuable resource for APWA communities and all Public Works professionals interested in learning more about environmental stewardship.

Expected Outcomes

It is anticipated that the video will assist municipalities in identifying programs to replicate in communities across the United States and Canada, as well as identify additional resources for support and expertise. Projects featured in the video were strategically selected to reflect a broad range of municipalities and solutions to different challenges in environmental stewardship.

Roles/Responsibilities

Homa Mojtabai was the team lead for this portion of the project and Ryan Gallagher provided support.

The following group leaders were instrumental in production of the video:

- Jennifer Adams, Deputy Public Works Manager, City of Tempe, AZ and member of the Center for Sustainability
- Vicki Quiram, Assistant Commissioner of New Hampshire's Department of Environmental Services and member of the Center for Sustainability
- Julia Anastasio, Director of Sustainability for the American Public Works Association

Video participants included Public Works Directors, environmental specialists, and emerging leader participants.

Methodology

The Center formed a working group of Public Works professionals representing a variety of organizations and career experiences to bring the project to fruition.

Project group members brainstormed and leveraged professional networks to identify exciting and appropriate sustainability initiatives from around the country to spotlight in the video. Professional relationships were key to winning support from municipalities as well as access to high level managers for the spotlighted projects.

Results

A video was completed in July 2012 and will be shown in part at Congress in Anaheim in August. Seven communities from the United States and Canada were featured in the video. The communities with projects featured in the video included the following:

- Goffstown, NH
- Thousand Oaks, CA
- Saanich, British Columbia
- Ventura, CA
- Tempe, AZ
- Laconia, NH
- Santa Monica, CA

The primary challenge was using the limited time allotted to the video to highlight as broad a range of projects and communities as possible. It was imperative that the video be informative as well as entertaining and visually pleasing. Also, the video was primarily targeted to APWA membership – meaning the projects had to represent feasible goals for APWA member communities. Interesting projects pertaining to sustainability (including a bicycle commuter center) were eliminated due to limited space.

Recommendations

The video project should be considered a living project – we recommend that the APWA Center for Sustainability revisit the featured communities to follow up on project impacts either on an annual or bi-annual basis. Updates can be disseminated via the APWA website and newsletters. This would help paint a more complete picture of the return on investment of sustainability initiatives. The follow-ups would also allow for more in-depth study of the project and any lessons learned. The time restraints on the video limited the ability to discuss project details – but this time limitation could be mitigated with one-on-one interviews, articles or even live chats and webinars. For example, the APWA could utilize students in the Donald C. Stone Center to draft case studies on the featured projects (or projects from other communities inspired by the video). This approach would provide a low-cost, high-impact method of sharing information and best practices, while also providing an educational opportunity for students.

3.5 List of Resources

Group Goals/Objectives

The objective of compiling a list of resources was to create one master list of many applicable sustainability resources. Part of the goal of this project was to research available tools and rating systems to determine how many were available and which were the most useful. The most useful rating systems were identified in the list of resources.

Evaluation

There are many, many resources available online these days. An online search for “sustainability” can quickly turn into information-overload, particularly if the researcher is not familiar with sustainability. At first, the group was considering focusing the list of resources regionally; however, with the expanse of research materials available, the team thought a broader approach would be more manageable, particularly for those who do not have a background in sustainability.

Expected Outcomes

The team anticipated an expansive list of research materials, journal articles, and sustainability professionals organized by region.

Roles/Responsibilities

Team members included Jeff Baxter, William Simon, Ryan Welsing, and Greer Hill. The team was assisted by Keith Reester, who is a member of the APWA Center for Sustainability.

Methodology

As discussed above, the team began by researching materials by region. Subsequently, the team broadened their search to materials that were applicable to a nationwide audience, since the packet is intended to be distributed to APWA Chapters across the nation. After formulating an outline of what the group was hoping to research, it was easier to narrow down specific materials. The research was exclusively conducted online.

Results

The compiled list of resources is contained in Appendix H. Included in the list are the following categories of resources: Sustainable Systems, Sustainable Communities, University Sustainability Organizations, National and International Sustainability

Organizations, Government Sustainability Organizations, and Sustainability Rating Systems.

Recommendations

The team recommends that this list is improved upon with further resources and professionals who would be willing to speak about sustainability. Another recommendation is that after each resource, a short description of the resource and usefulness of the resource is added.

Section 4 Project Recommendations

Our team recommends distribution of the packet, including each of the project components, to APWA Chapters.

Section 5 Project Presentation Overview

A summary of the history, conclusions and recommendations from the class project will be presented at APWA Congress in August 2012. The presenters will be Erin Jones, Nathan Hladky, Jeff Baxter, and Ryan Gallagher, with an introduction by Morgan Wazlaw and with support from the rest of the team, particularly during the question and answer portion. The allotted time for the presentation is anticipated to be approximately 50 minutes. The presentation itself will be about 40 minutes and then the audience will have an opportunity to ask questions of the team for approximately 10 minutes.

Section 6 Conclusion

In conclusion, our team has produced six components for implementing sustainability principles into Public Works projects: RFP guidelines, sample Board/Council letters, a pilot project example, a video, and a list of resources. We sincerely hope that our efforts and work products will be a valuable asset to APWA and to Public Works professionals across the Country.

It has been an absolute privilege to be part of the Emerging Leaders Academy Class V and we would like to extend our utmost thanks to the leaders of the ELA program: Sue, Deana, and Ann.

Appendix A
RFP Guidance Document

APWA Emerging Leaders Class V Project Report

RFP Guidance

The Request For Proposal (RFP) process is used by many different organizations throughout the United States. This process allows municipalities, DOT's, grant foundations, and other organizations to incorporate principles, such as sustainability principles, prior to choosing consultants to carry out projects. The RFP process is a unique opportunity to focus consultants on sustainability from the planning phases, to environmental review, to final design and specification development, to construction. The goals of creating RFP language that would promote sustainability successfully are as follows:

- Consistency with sustainability principles, as established by categories in the ISI Envision checklist
- Specific to the organization developing the RFP
- Utilize the ISI rating tool
- Encourage sustainable solutions
- Are cost effective, and budget conscious.

By establishing these criteria, and formulating RFP's with sustainable requirements, our hope is that every project involves sustainability in some form.

Guidelines

Our goal is that every RFP produced has a section devoted to sustainability. In addition to becoming more comfortable with sustainability, RFP initiators should become more familiar with scoring RFP's utilizing sustainability as a measuring tool. The ISI Envision tool is the exact tool to assist them in this effort. The following strategies have been developed as a suggested for use in RFP's.

Scoring

Sustainability should be added to all RFP's as criteria to be used to score proposals. Traditionally RFP's contain a section on how the proposals will be rated, ranked, and a winner chosen. If percentages are used it is recommended that at least a 5% of the total points available be allocated towards sustainability. This will ensure that all proposals have at least some aspect of sustainability in them, and a more environmentally friendly project will be a direct outcome.

Lifecycle costs

Although creating a project that is sustainably designed and constructed is important, focus should also be made on the life cycle of the project. The utilization of existing infrastructure where possible, as well as the maintenance of the facility should be assessed when creating a sustainable project. Not only is the goal to integrate sustainability into evaluation criteria, but also add encouragement for the final outcome to remain sustainable in the future. Integration of this idea in the RFP's will provide proposals and projects that

reduce costs, maintenance efforts, and the projects impacts on the finite resources available.

Thinking outside the Box

Too often it is an organizations habit of requiring the same standards on every project. Although the necessity of standards is understood, allowing alternative standards can often lead to reduced cost and an increase in a projects sustainability rating. When crafting RFP language, it is important that the proposals have enough flexibility to provide solutions that are innovative, and that can increase the sustainability of a project in ways that the RFP's authors might not have imagined.

Rating System

Although there are many rating systems currently in place that score projects on their environmental sustainability, very few address the needs for infrastructure projects, including transportations projects. The United States Green Building Council's Leadership in Energy and Environmental Design (LEED) is one of the most utilized rating systems. LEED has made excellent progress in providing a rating system for buildings; however, the tool does not adapt as well to projects that do not include vertical construction. The Greenroads Rating System is available for use on roadway specific projects, but Public Works projects encompass more than just roads. The need has developed for a rating system specific to Public Works projects, and ISI has developed the Envision™ tool with this in mind. Envision™ provides a holistic framework for evaluating and rating the community, environmental and economic benefits of all types and sizes of infrastructure projects. The Envision™ Rating System evaluates, grades, and gives recognition to infrastructure projects that use transformational, collaborative approaches to assess the sustainability indicators over the course of the project's life cycle. Envision™ can be used by infrastructure owners, design teams, community groups, environmental organizations, constructors, regulators, and policy makers. The tool is design to help professionals:

- Meet sustainability goals.
- Be publicly recognized for high levels of achievement in sustainability.
- Help communities and project teams to collaborate and discuss, "Are we doing the right project?" and, "Are we doing the project right".
- Make decisions about the investment of scarce resources.
- Include community priorities in civil infrastructure projects.

The Envision™ tool is versatile, as it can assist in evaluating projects from a planning and design perspective. The design team can utilize the Envision™ tool to:

- Assess costs and benefits over the project lifecycle.
- Evaluate environmental benefits.
- Use outcome-based objectives.
- Reach higher levels of sustainability achievement.

The Envision™ Sustainable Infrastructure Rating System is made up of 60 credits divided into five sections:

- Quality of Life
- Leadership
- Resource Allocation
- Natural World
- Climate and Risk.

Each Envision™ credit is described in a 2-page write-up that includes the intent, metric, levels of achievement, description, an explanation of how to advance to a higher achievement level, evaluation criteria and documentation, sources, and related credits.

Envision™ has assessment tools that can be used for infrastructure projects of all types, sizes, complexities, and locations. These tools are broken in to four stages to better help the user implement the tool. Each stage is listed below:

Self-Assessment Checklist: The self-assessment checklist helps familiarize project teams implement sustainable aspects of infrastructure projects.

Envision™ Sustainable Infrastructure Rating System. This stage involves a scoring system and assessment criteria for project teams to document sustainability achievements. This stage also enables a project team to submit a project for recognition. This stage requires that someone trained in the use of the Envision™ rating system is an integral part of the project team. During this stage, an independent, third-party verifier validates the project team's assessment to make sure that it is correct and that the project is rated correctly. Included in the assessment are criteria to evaluate construction, operation, and maintenance aspects of a proposed project.

Stage 3 and Stage 4: These two stages are as of yet incomplete, but should be available after 2012. These stages will consist of the a tool for complex or multi-stage projects as well as an optimization support tool.

Conclusion

Although taking steps toward making more sustainable projects might seem complex, small steps can be taken that can generate major results. By following the guidelines above we

hope that creating RFP's with sustainable guidelines will become easier, and more prevalent in Public Works. We live in a finite world and there will always be a struggle for the finite resources available. Our hope is that through organizations such as ISI we can make a difference and help create projects that extend these resources as much as possible.

Citations:

- "Greenroads Rating System | The Greenroads Rating System." *Greenroads Rating System | The Greenroads Rating System*. N.p., 13 June 2011. Web. 15 July 2012. <<http://www.greenroads.org/1/home.html>>.
- "Institute For Sustainable Infrastructure (ISI): Welcome." *Institute For Sustainable Infrastructure (ISI): Welcome*. N.p., n.d. Web. 21 July 2012. <<http://sustainableinfrastructure.org/>>.
- "USGBC: LEED." *USGBC: LEED*. USBGC, n.d. Web. 14 July 2012. <<http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>>.

Appendix B
'How to Join ISI' Letter to Council/Board

APWA Emerging Leaders Class V Project Report

How to join ISI (Letter to Council/Board)

Do you want to learn more about providing sustainable infrastructure in your community? It seems like “sustainable” is the buzzword these days, but what does it really mean and how can your community ‘go green’ and save money at the same time? The Institute for Sustainable Infrastructure (ISI) defines sustainability as *“addressing environmental, economical and societal needs without exhaustion of natural resources.”*

ISI is a new non-profit corporation created to address the need for sustainable infrastructure. After all, the infrastructure we design and build today not only needs to be cost-effective now but also have a long service life.

ISI provides tools for rating infrastructure, including the envision™ rating system. The rating system is the first of its kind offering a way to measure, assess, manage, and improve the delivery of sustainable infrastructure such as roads, bridges, pipelines, railways, and the public spaces in our cities, towns and local communities.

By joining ISI you can build your knowledge base regarding implementing sustainable infrastructure in your community. It can help policymakers make sound decisions based on verifiable information. What we build in our communities today needs to pass the test of time and deliver results for several generations to come. It’s an investment in your community.

Membership is open to anyone who has an interest in sustainable infrastructure. There are two types of memberships. A **Sustaining Member** gains online information sharing, networking, invitation to the ISI Annual Meeting, discounts on training, electronic newsletter subscription, products and programs, and special pricing for publications, certification materials and other products. A **Charter Member** gains a seat on the ISI Council, the key advisory body of the organization. In addition, Charter Members will have direct input into the rating system features and upgrades, and will have first exposure to all ISI products and services. Charter Members will also have first access to education and training programs in order to certify professionals as Assessors of project sustainability. Whether you are new to this concept or a seasoned veteran, you won’t be disappointed. All government agencies and public utilities can join ISI for free.

The primary focus of ISI is on the needs and regulatory settings of the United States and Canada, however the applications and benefits are transferrable to other locations if user discretion is applied.

More information, including application forms, is at <http://www.sustainableinfrastructure.org/>

Appendix C
Sample Proclamation

APWA Emerging Leaders Class V Project Report

PROCLAMATION

WHEREAS, Public Works infrastructure, facilities, and services are a vital part of
our community; and

WHEREAS, the sustainable use of resources is important to the health, safety,
and general welfare of our citizens; and

WHEREAS; sustainable public works infrastructure, facilities, and services can be
constructed and provided to meet environmental, social, and economic needs
and benefits; and

WHEREAS; public works infrastructure that is constructed sustainability will
achieve greater performance and resiliency than previous models; and

WHEREAS, ____ [Organization] _____ is committed to the sustainable
provision of public works infrastructure, facilities, and services

NOW, THEREFORE, BE IT RESOLVED by the ____ [Organization's
Leadership] _____ as follows:

1. [Organization] will become a member of the Institute of Sustainable
Infrastructure
2. [Organization] staff will become trained in the use of the Rating System
3. [Organization] will utilize the Rating System for all new public works projects
4. [Organization] will report these ratings to the public

Given under my hand and Seal of the [Organization]
[State], this {Day} of [Month], [Year]

Appendix D
City of Thousand Oaks Sample ISI Resolution
APWA Emerging Leaders Class V Project Report

RESOLUTION NO.

**RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF THOUSAND OAKS ENCOURAGING THE USE OF
A SUSTAINABLE ASSESSMENT CHECKLIST FOR
INFRASTRUCTURE PROJECTS OVER \$500,000 IN
CONSTRUCTION VALUE AND JOINING THE
INSTITUTE OF SUSTAINABLE INFRASTRUCTURE**

WHEREAS, the City of Thousand Oaks recognizes that Public Works infrastructure, facilities and services are a vital part of our community; and

WHEREAS, facilities constructed using sustainable methods can result in lower construction costs, lower operating costs, local green jobs, improved working environments, reduction of total energy usage, increased energy efficiency and reduction of fossil fuel emissions; and

WHEREAS, the City of Thousand Oaks understands sustainable practices are key to remaining one of California's most desirable places to live, work, visit, recreate and raise a family; and

WHEREAS, publicly available sustainable tools are available, such as the EnvisionTM rating tool developed by the Institute for Sustainable Infrastructure (ISI), a non-profit organization co-founded by the American Society of Civil Engineers, the American Council of Engineering Companies and the American Public Works Association; and

WHEREAS, the EnvisionTM program offers assessment tools that can be used to assess costs and benefits over a project lifecycle, evaluate environmental benefits, help achieve higher levels of sustainability, and can be completed with limited staff time during the preliminary project phase; and

NOW, THEREFORE, BE IT RESOLVED, that the City of Thousand Oaks will consider and document, by means of the sustainable assessment checklist provided by ISI, the feasibility of using sustainable methods for each Public Works project with a construction value over \$500,000. For all projects where the sustainable assessment checklist process demonstrates no negative economic impact, the recommended sustainable practices may be utilized in implementation of each project.

BE IT ALSO RESOLVED, that the City of Thousand Oaks will join the Institute of Sustainable Infrastructure at no cost, and that doing so will provides access to the assessment checklist and will position the City among the first of many progressive cities and towns in the nation to be designated as an ISI member.

PASSED AND ADOPTED THIS

Jacqui V. Irwin, Mayor
City of Thousand Oaks, California

ATTEST:

Linda D. Lawrence, City Clerk

APPROVED AS TO FORM:
Office of the City Attorney

Christopher G. Norman, Assistan City Attorney

APPROVED AS TO ADMINISTRATION:

Scott Mitnick, City Manager

Appendix E
City of Thousand Oaks Staff Report

APWA Emerging Leaders Class V Project Report

TO: Scott Mitnick, City Manager

FROM: Jay T. Spurgin, Public Works Director

DATE: July 10, 2012

SUBJECT: Resolution for Membership to the Institute for Sustainable Infrastructure

RECOMMENDATION:

Adopt Resolution authorizing the City's membership to the Institute for Sustainable Infrastructure.

FINANCIAL IMPACT:

No Additional Funding Requested. Minimal cost of staff time required to prepare and file the application is included in the Adopted FY 2012/2013 Public Works General Fund Budget.

BACKGROUND:

The City's Public Works Department has consistently demonstrated its commitment to environmental stewardship through its use of alternative fuel vehicles, generation and procurement of renewable energy through direct access, development of Ventura County's first Green Business Program, and the nearly two-year effort to become an American Public Works Association (APWA) Accredited Agency.

While the City considers, and frequently uses, sustainable alternatives in construction projects, there has been no industry standard practice for considering sustainable alternatives. Recently, the Institute for Sustainable Infrastructure (ISI), a non-profit organization founded by the American Society of Civil Engineers and APWA, developed a sustainability rating tool called Envision. Envision can be used to assess the costs and benefits of sustainable alternatives over the life cycle of the project. More specifically, Envision provides project managers with a sustainable assessment checklist to ensure all sustainable alternatives have been considered.

Resolution for Membership to the Institute for Sustainable Infrastructure

July 10, 2012

Page 2

Through the widespread use Envision, ISI seeks to provide a tool that will become the industry standard for evaluating the economic, social, and environmental components of construction projects. The success of Envision is largely dependent on private and public organizations becoming early adopters of the tool. The attached Resolution (see Attachment #1) authorizes the City's membership to ISI and encourages project managers to use the Envision sustainability checklist for construction projects over \$500,000 and employ sustainable practices where no negative economic impact is demonstrated.

DISCUSSION/ANALYSIS:

Use of the Envision tool will provide project managers a standardized tool from which to consider sustainable alternatives with minimal impact on staff time. More importantly, the City's use of Envision will help advance ISI's mission of improving physical infrastructure nationwide, provide valuable feedback for future iterations of Envision, and further the City's continued use of environmental practices in public works projects.

COUNCIL GOAL COMPLIANCE:

Meets Council Goal:

- E. Provide and enhance essential infrastructure as City transitions from a "growth" to a "maintenance" community, to ensure that the goals and policies of the Thousand Oaks General Plan are carried out and the City retain its role and reputation as a leader in protecting the environment and preserving limited natural resources.

Submitted by:

Prepared by:

Jay T. Spurgin
Public Works Director

Akbar Alikhan
Assistant Analyst

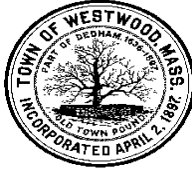
DPW:\150-40\jds\Council\2012\July 10\ISI Staff Report.doc

Attachments:

#1 – Resolution for Membership to the Institute for Sustainable Infrastructure

Appendix F
Town of Westwood Sample Letter

APWA Emerging Leaders Class V Project Report



TOWN OF WESTWOOD
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

VICKI VICKREYQUIRAM, *DIRECTOR*
TODD KORCHIN, *HIGHWAY SUPERINTENDENT*

CHRISTOPHER F. GALLAGHER, *DEPUTY DIRECTOR*
ROBERT J. ANGELO, *SEWER SUPERINTENDENT*

Date:

To:

From:

Subject: Institute for Sustainable Infrastructure Membership

RECOMMENDED ACTION

The Board sign the attached application for Town membership to the Institute for Sustainable Infrastructure (ISI). ISI membership is complimentary to government agencies.

INFORMATION

As "Town" continues to make public investments in our infrastructure; our roads, highways, sidewalks, trails, drainage systems, water distribution systems, wastewater collection systems, park and recreational facilities, and much more; the decisions we make will have a significant effect on the future economic prosperity, environmental preservation and quality of life in our community. The Institute for Sustainable Infrastructure (ISI) is a non-profit organization co-founded by the American Society of Civil Engineers, the American Council of Engineering Companies and the American Public Works Association.

ISI's main product, the Envision™ rating tool, was developed in conjunction with the Zofnass Program for Sustainable Infrastructure at the Harvard University Graduate School of Design. This rating tool is similar to the LEED process for buildings, but applied to civil infrastructure projects. The Envision tool lays out an easy process to assure that environmental, social, and economic variables are included in infrastructure decisions.

Joining ISI gives the Town the ability to access the new rating tool, associated manuals and a sustainability knowledge base that will benefit us in the design and construction of our projects. If we choose, we will be able to use the assessment checklists and independent third-party ISI project verification, followed by project recognition for high levels of achievement. We will also be among the first of many progressive cities and towns in the nation to be designated as an ISI member.

The Envision™ System can serve as a decision making guide for design teams, community groups, environmental organizations, constructors, regulators and policy

makers to help them collaborate and discuss projects, meet sustainability goals, be recognized for achievement, make decisions about the investment of our scarce resources, and meet and exceed community priorities and goals. For more information, visit the ISI web site; www.sustainableinfrastructure.org.

Appendix G
Envision Sustainable Infrastructure Rating System
Davenport Roadway Project

APWA Emerging Leaders Class V Project Report



Envision™ Sustainable Infrastructure Rating System

Davenport Roadway Pilot Project

Members of ELA Class V conducted the following analysis of a roadway project that was proposed by the Davenport Public Works Department in 2012 in accordance with the Envision™ Sustainable Infrastructure Rating System to determine whether the analysis would create a more sustainable and cost-effective project. Between the time that the project was proposed and the time that the City completed the Envision™ Sustainable Infrastructure Rating System, the City saved approximately \$60,000 through implementation of sustainable principles.

Project Description: The project involves reconstruction of a 300-foot roadway in the City of Davenport, Iowa. As part of the project, the original roadway will be removed and replaced with two 17-foot roads divided by an 18-foot planting area and flanked by an 11-14-foot bioswale throughout the length of the roadway. The project site plan is included at the end of the following assessment.

The summary below shows each criterion within the Envision™ Sustainable Infrastructure Rating System as it applies to the Davenport Roadway Project, including (1) Quality of Life, (2) Leadership, (3) Resource Allocation, (4) Natural World, and (5) Climate and Risk.

Subsequent to the initial assessment based on the Envision™ Sustainable Infrastructure Rating System, the ELA team used a list of Envision credits and scores to determine what percentile this project would achieve in each of the categories. Based on the list of credits and scores, the Harrison Street Reconstruction Project rated 89% in the Quality of Life category, which was the highest rating for the project.

Table of Contents:

Quality of Life..... 6

Leadership..... 14

Resource Allocation 21

Natural World 27

Climate..... 34

QUALITY OF LIFE
Purpose. Community. Wellbeing.

QL1.1 IMPROVE COMMUNITY QUALITY OF LIFE

INTENT:

Improve the net quality of life of all communities affected by the project and mitigate negative impacts to communities.

METRIC:

Measures taken to assess community needs and improve quality of life while minimizing negative impacts.

Has the project team identified and taken into account community needs, goals, plans, and issues?

The project involves replacement/rehabilitation of a strip of two-lane, seal-coat road to create conformity with the adjacent planter-divided, two-lane, PCC street section to the north and south.

The project team is completing the proposed roadway project in an effort to improve City streets and create conformity between roadways. Therefore, the project would be beneficial with regard to community needs and goals because it would improve City facilities.

Stakeholders in the area (other than municipal employees) are few in number. Informal discussions with the 2-3 business representatives in the area were held. However, there are no documents pertaining to “minutes of meetings with stakeholders, community leaders and decision-makers, letters and memoranda.”

Has the project team sought to align the project vision and goals to the needs and goals of the host and affected communities as well as address potential adverse impacts?

An impact assessment was conducted by Natural Resource division staff and staff engineers to determine the benefit of implementing the proposed roadway project and other similar projects. Staff utilized equations and models as outlined in the Iowa Stormwater Management Manual 2B-1 for assessments. However, all assessments for this project were done ad hoc and not retained in permanent files for future use. For this particular project, no adverse impacts were observed and thus no mitigation is necessary.

To what extent has the affected communities been meaningfully engaged in the project design process?

Because of the site’s location, the only affected community is the City of Davenport so no other communities were consulted in the project design process. Informal conversations were held with the 2-3 businesses adjacent to the site and the airport management staff; although no documentation of these conversations exists.

Has the project owner and the project team designed the project in a way that improves existing community conditions and rehabilitates infrastructure assets?

The current 300 feet of road is proposed to be removed and replaced with two 17’ roads divided by an 18’ planting area and flanked by an 11-14’ bioswale running the entirety of

Harrison Street Reconstruction Project

the approximately 300' of new road. As new businesses begin to enter this area, local ordinance will require installation of 4' wide sidewalks to improve pedestrian access. Existing sewer lines will be salvaged and reused within the project site area wherever possible; salvaged storm lines will allow existing wetlands to be expanded.

The project would improve existing community conditions and would rehabilitate infrastructure in the City since it would involve improving an existing roadway and incorporating a bioswales.

QL1.2 STIMULATE SUSTAINABLE GROWTH AND DEVELOPMENT

INTENT:

Support and stimulate sustainable growth and development, including improvements in job growth, capacity building, productivity, business attractiveness and livability.

METRIC:

Assessment of the project's impact on the community's sustainable economic growth and development.

Does the project create a significant number of jobs during its design and construction?

As with any street construction project, a number of jobs will be created in the actual construction phase. At its peak, 20-25 people are anticipated to be employed during construction of the project based on construction of similar projects in the past.

Does the delivered works create new, or increase the quality of existing, operating, recreational or cultural capacity for business, industry, or the public?

Rehabilitating this stretch of road will increase facilities adjacent to existing business, industry, and will improve public access. New businesses will be attracted to the proposed industrial areas as they are developed and the existence of a well designed road connecting major thoroughfares to these businesses will already be in place to facilitate growth.

Does the delivered works significantly improve community productivity?

As this is a developing area, significant impacts to reducing congestion, lowering operating costs, increasing efficiency, etc. will not be significantly impacted at this time.

Does the project improve community attractiveness for compatible businesses and industries, improves recreational opportunities, and generally improves the economic and social condition of the community?

The 300' of bioswales on either side of the road is a new concept in street design and will allow businesses and industries a "talking-point" and open doors to implement other sustainability measures into their campuses and piggy-back off the initiative. There is an expressed interest in adding significant aviation-related businesses to the area due to its proximity to the airport. The Davenport Municipal Airport is ranked the highest among all Iowa General Aviation Airports in economic impact to the community per the Iowa Department of Transportation. Adding more businesses related to the operational capacity of the airport will benefit the economy in the area.

Harrison Street Reconstruction Project

Additionally, the proposed roadway and bioswales would improve the area aesthetically and will create a more pedestrian-friendly environment, which is anticipated to improve the social condition of the community.

As part of the delivery of the constructed works, does the project rehabilitate, restore, create or repurpose existing community infrastructure assets in the natural and/or built environment, and in doing so, improves community prospects for sustainable economic growth and development?

The project involves reconstruction an existing seal-coat road. The existing road would be replaced with a road of better integrity and bioswale wetland expansion measures would be incorporated to decrease stormwater runoff.

QL1.3 DEVELOP LOCAL SKILLS AND CAPABILITIES

INTENT:

Expand the knowledge, skills and capacity of the community workforce to improve their ability to grow and develop.

METRIC:

The extent to which the project will improve local employment levels, skills mix and capabilities.

What is the expected degree to which the project will contribute to local employment, training and education, with emphasis on the most needy and/or disadvantaged groups through project planning, design, and construction?

The City of Davenport is committed to providing opportunities for disadvantages business enterprise (DBE). As part of this commitment, all City contractors are encouraged to contact DBE vendors. For specific bid proposals, bidders will be required to submit evidence of a good faith effort to contact and solicit bids from DBE vendors for subcontract work and/or materials and supplies.

QL2.1 ENHANCE PUBLIC HEALTH AND SAFETY

INTENT:

Take into account the health and safety implications of using new materials, technologies or methodologies above and beyond meeting regulatory requirements.

METRIC:

Efforts to exceed normal health and safety requirements, taking into account additional risks in the application of new technologies, materials and methodologies.

Have the project owner and the project team assessed the exposures and risks created by the application of new and/or standard technologies, materials, equipment, and methodologies on the project?

There are no new technologies, materials, equipment, and methodologies in this project that would require additional assessments of exposures and risks beyond that of typical OSHA regulations.

Have the project owner and the project team assessed and made the appropriate changes to the project design to reduce the risk to public and worker health and safety to acceptable levels, and

Harrison Street Reconstruction Project

received approval and signoff by the appropriate environmental and public health and safety officials?

As with all City projects, health and safety issues are addressed contractually and all contractors and subcontractors are required to abide by all licensing and permitting requirements as determined by the City of Davenport, Scott County, and State of Iowa. As with the first question under QL2.1 above, there are no risks beyond those typically covered under OSHA regulations.

Have the project owner and project team instituted the appropriate health and safety methodologies and protocols during construction?

For all City construction projects, a Construction Inspector from the Engineering Division of Davenport Public Works is on-site each day construction takes place to ensure appropriate health and safety methodologies and protocols during construction.

QL2.2 MINIMIZE NOISE AND VIBRATION

INTENT:

Minimize noise and vibration generated during construction and in the operation of the constructed works to maintain and improve community livability.

METRIC:

The extent to which noise and vibration will be reduced during construction and operation.

Have appropriate studies been carried out to predict the levels of air-borne, ground-borne, and structure-born noise and vibration that will be present during construction and when the completed works is in operation?

The project will follow construction management guidelines set forth by the City of Davenport Municipal code and all activity will be under supervision by a City of Davenport Construction Inspector to ensure adherence to ordinance. After construction is completed, there will be a zoning change from R-1 Low Density Residential to a minimum of M-1 Light Industrial with a potential for M-2 Heavy Industrial classification. Thus, the noise generated from vehicular traffic will not impact surrounding businesses or homes.

Have proposals for ambient noise and vibration mitigation and monitoring been made and incorporated into the project design to reduce noise and vibration to accepted standard target levels?

The Federal Highway Administration (FHWA) Title 23 CFR (23 CFR 772) has developed noise abatement criteria for assessing potential noise impacts. Additionally, guidelines are identified in Guidance for Preparing and Processing Environmental and Section 4(f) Documents, Technical advisory... The Iowa Department of Transportation (DOT) also protects the public from noise through Policy 500.07 Highway Traffic Noise Analysis and Abatement. Per these guidelines, decibel levels are capped at 67 decibel (dBA) for a residence and 72 dBA for a business. Though no additional studies were conducted for this reconstruction, similar studies of this area and similar areas do not approach the maximum threshold with the exception of those directly adjacent to a major interstate. In

Harrison Street Reconstruction Project

all recent studies conducted for similar projects, sound levels in excess of the 67 dBA were the direct result of interstate traffic activity.

Has the project been designed to markedly reduce ambient noise and vibration down to levels that substantially improve community livability?

There are no specific designs to reduce ambient noise and vibration in relation to community livability as the project is located in an industrial area of the city.

QL2.3 MINIMIZE LIGHT POLLUTION

INTENT:

Prevent excessive glare, light at night, and light directed skyward to conserve energy and reduce obtrusive lighting and excessive glare.

METRIC:

Lighting meets minimum standards for safety but does not spill over into areas beyond site boundaries, nor does it create obtrusive and disruptive glare.

Has the project team conducted an overall assessment of lighting needs for the project?

All lighting projects are designed separately from the reconstruction process. The Davenport Public Works Department maintains an engineer on staff who specifically addresses lighting concerns. Due to its undeveloped nature at this time, no lighting plans have been developed.

Has the project team designed the lighting components of the project in a way that reduces lighting energy requirements?

There is currently a project underway to convert all city-owned/used street lights to LED lighting. Due to height requirements imposed on areas adjacent to the Municipal Airport, special lighting in this area will be necessary. This roadway will be a prime candidate for early adopted LED lighting as a test model for future street corridors.

Has the project team designed the lighting components of the project in a way that reduces or eliminates light spillage into sensitive environments and preserves the night sky?

Due to its close proximity to a general aviation airport with intentions of expansion, there are no identifiable "sensitive environments" and preservation of the night sky in this area is not possible.

QL2.4 IMPROVE COMMUNITY MOBILITY AND ACCESS

INTENT:

Locate, design and construct the project in a way that eases traffic congestion, improves mobility and access, does not promote urban sprawl, and otherwise improves community livability.

METRIC:

Extent to which the project improves access and walkability, reductions in commute times, traverse times to existing facilities and transportation. Improved user safety considering all modes, e.g., personal vehicle, commercial vehicle, transit, and bike/pedestrian.

Harrison Street Reconstruction Project

Have the impacts of the project on community access and mobility during construction and operation been properly and comprehensively addressed?

The location of the project is fairly remote but will improve access to current industrial and aviation-related businesses. The design of the road and inclusion of sidewalk requirements for all incoming businesses adjacent to the area will improve all aspects of user safety.

Has the project team coordinated with owners and operators of adjacent facilities, amenities and/or transportation hubs to address issues of mobility and access during operation of the constructed works?

*There are very few businesses impacted at this time but there will be as many special accommodations as necessary to ensure employee and customer access to the affected businesses will be impeded as little as possible. Per the bid specifications: "The Contractor shall conduct the work so as to create a minimum amount of inconvenience to traffic...**There must be one lane of access to the Police Firing range from June 18-21 inclusive. Access must be maintained as much as is practicable to the Isaac Walton Facility and the farm driveway directly opposite the police firing range.**"*

Has the project team considered and incorporated when feasible, the use of alternate modes of transport?

Assessments have not been conducted at this time but this area is the center of a multi-modal transportation hub including access to railway, air, and interstate travel within one mile. Currently, a special Citibus bus transit route shuttles employees of a local customer service call center to-and-from the City-wide routes to this area. A special stop to the businesses of the project area can easily be bolted on to the current route.

Has the project team developed plans to reduce traffic disruption during construction, including monitoring, and corrective action?

Though there is minimal traffic through the area, there will be minimal traffic interruptions during the entire construction period. Crews will focus on one half of the road at a time; at no point will the entire road be closed off to thru traffic.

Has the project team incorporated design strategies to address access and mobility concerns during operation, e.g., congestion, usage rates of existing transit infrastructure, access to public transit, and non-motorized transportation?

Where there is currently a two-lane seal-coat road there will be an improved, divided, two-lane road with landscaped boulevards and traffic calming measures installed to reduce speed. Current traffic volumes are low but will increase as more businesses locate to the area; however, congestion levels are not of concern and the improved street surfaces will improve public transit access.

Has the project team expanded mobility and access consideration to include improvements to the long-term transportation infrastructure efficiency, walkability, and livability?

All long-term transportation planning is conducted by the Bi-State Regional Commission and plans adhere to the current 2040 Quad Cities MPO Long Range Transportation

Plan. An online version of the plan is available at <http://www.bistateonline.org/ser/tra/lon.shtml>

QL2.5 ENCOURAGE ALTERNATIVE MODES OF TRANSPORTATION

INTENT:

Improve accessibility to non-motorized transportation and public transit. Promote alternative transportation and reduce congestion.

METRIC:

The degree to which the project has increased walkability, use of public transit, non-motorized transit.

Is the constructed works located within walking distance and is it pedestrian accessible to multi-modal transportation facilities?

The area is not within walking distance of any City of Davenport residential areas. It is located within 1.5 miles of multi-modal transportation facilities including air, interstate, and rail lines. At this point, those lines are business-centric but could be adopted for mass transit needs in the future.

Does the constructed works and associated infrastructure restrict the parking of motorized vehicles?

No on-street parking will be provided or allowed on this street. Parking requirements will fall solely to the incoming businesses adjacent to the project.

Is the constructed works and associated infrastructure designed for convenience in access to multi-modal transportation facilities?

Space for required sidewalks is included in the design plans. Access to the multi-modal will be difficult as there is a general aviation airport located in-between the project site and the facility and security regulations will not allow for a pedestrian walkway through the airport.

Is the constructed works configured and located so that users are encouraged to use non-motorized transportation?

The overall elevation change is a slight decline as the road moves from north-to-south as the entire City is on a slow downward slope to the Mississippi River (750 feet at northern city limits to 558.9 feet at the River). Elevation changes from a major cross-street (W. 90th Street) to the next cross street (Research Parkway) are approximately 13 feet (745.5-723.2). Thus, non-motorized transportation through this area ought not to be too much of a challenge.

Has the project owner and the project team, working with the community developed programs to encourage the use of alternative modes of transportation?

No bus stops or alternate transportation stops have been built in to the current plan.

Has the project owner and the project team identified under-used pathways, bikeways, rail and/or water modes of transportation that are unused, in disrepair, and/or have barrier to safe use? Has

the team sought to upgrade these elements and integrate them into the existing transportation infrastructure?

There is an under-utilized rail line north of the site that is currently being upgraded to accommodate a new rail-spur project. We anticipate this new rail-spur project will spur development in the area.

QL3.1 PRESERVE HISTORIC AND CULTURAL RESOURCES

INTENT:

Preserve or restore significant historical and cultural sites and related resources to preserve and enhance community cultural resources.

METRIC:

Summary of steps taken to identify, preserve or restore cultural resources.

To what extent has the project team worked with the community and required regulatory and resources agencies to identify cultural resources?

Surveys of the area were conducted during original construction and at the time, no lands or buildings were considered to possess any cultural value; aerial photos indicate the road has been in place since prior to 1930 but no records relating to any cultural significance were located. As the land has been relatively clandestine for approximately 90 years, little time was invested in maintaining the cultural aspect of project as there is none to preserve.

QL3.2 PRESERVE VIEWS AND LOCAL CHARACTER

INTENT:

Design the project in a way that maintains the local character of the community and does not have negative impacts on community views

METRIC:

Thoroughness of efforts to identify important community views and aspects of local landscape, including communities, and incorporate them into the project design.

To what extent has the project team demonstrated an understanding of local character of the project setting, in terms of landform or levels, views, natural landscape features, materials, planting, style/detailing, scale, and landscape/townscape pattern?

A number of provisions are in place and written into the design specifications relating to preserving current landscape features. Also, a natural wetland area will be improved as a result of this project but will be discussed in QL3.3 Enhance Public Space. Where plantings must be removed to accommodate the construction limits, all cleared and grubbed plants will be hauled to the City of Davenport Compost Facility for conversion to high-grade compost and mulch. Trees and plantings outside the construction limits must be protected during the entire construction process; silt fencing must be installed to prevent soil runoff, inlet filters must be used to prevent intrusion in storm drains, positive drainage techniques must be adhered to at all times, and all disturbed areas shall be seeded, fertilized, and mulched as shown on the design plans.

Harrison Street Reconstruction Project

Has the project team developed or adopted existing public view plans and design guidelines to preserve important view sheds and local character?

Stormwater runoff is a hot topic in the community and the City anticipates inclusion of additional non-permeable surfaces to enter the area as development occurs. Thus, many aspects of this project are designed to offset stormwater runoff in the future.

To what extent does the final design address views and local character?

We are limiting the degree of stormwater runoff entering local waterways and our treasured Mississippi River even though the site is approximately five miles away from the River. As part of all new infrastructure projects, we seek to reduce the severity of stormwater runoff

To what extent has the project team worked with local official, communities, and decision makers?

Bioswales are a new concept in stormwater runoff protection but we have already installed them in parking lots of two prominent city buildings, Davenport Public Works and Davenport City Hall. The success of these projects will make mandatory stormwater runoff mitigation litigation a distinct possibility.

Does the contract include clauses on the preservation of high value landscapes and landscape features, including stated penalties for non-compliance and programs to inspect outcome and enforce?

All construction related activities are subject to Davenport Municipal Code Chapter 13.38 Construction Site Erosion and Sediment Control which includes permit requirements, inspection procedures, and stated penalties ranging from \$100-750 depending on severity and frequency.

Has the project team aided local communities in developing or improving local policies and regulations regarding views and fit with local character for future projects?

As we are a river-centric community, we have undertaken many opportunities to aid local communities to develop and improve local policies and regulations. Education and outreach is a required component of the Iowa MS4 Stormwater Permit. As such, the Davenport Public Works staffs a full-time Program Coordinator to run community awareness and education programs in relation to stormwater among other duties. Our Natural Resources Manager has given speeches at local and state water conferences, and the City of Davenport partners with many NGO's in the area including Partners of Scott County Watersheds, Living Lands and Waters, and Scott Soil and Water Conservation.

QL3.3 ENAHNCE PUBLIC SPACE

INTENT:

Improve existing public space including parks, plazas, recreational facilities, or wildlife refuges to enhance community livability.

METRIC:

Plans and commitments to preserve, conserve, enhance and/or restore the defining elements of the public space.

What effect will the project have on public space (e.g., parks, plazas, recreational facilities, or accessible space in wildlife refuges) that enhance community livability?

There exists an approximately 136,000 sq. ft. wetland area to the west of the project site spanning the first 300 feet of the road. By removing an existing stormwater line running these 300 feet and allowing the stormwater line to empty into the wetlands area, the City expects to enhance the capacity of the wetland and local wildlife population.

Furthermore total stormwater runoff will be improved in other areas which has many more tertiary benefits.

Are the public agencies and other stakeholders satisfied with the project plans involving public space?

Though other City divisions are dedicated to preservation of public spaces, there remains a safety and security issue at the Municipal Airport to take into account. Additional foot traffic attempting to enter the secure areas of the airport or additional wildlife flying into airspace can cause significant security and safety problems. At this time, there is support for the plans but there remains a key interest in the development of the plans.

Will meaningful and beneficial restoration efforts be undertaken?

The Mississippi River is the heart of the City of Davenport and here is the only portion of the River where it runs east-to-west instead of north-to-south. By reducing the amount of stormwater runoff and pollutants entering our local waterways, we are truly undertaking meaningful and beneficial efforts. Though this is a small section of roadway 5 miles away from the river, it will set precedent for the financial feasibility of sustainable practices in infrastructure construction.

LEADERSHIP
Collaboration. Management.
Planning.

LD1.1 PROVIDE EFFECTIVE LEADERSHIP AND COMMITMENT

INTENT:

Provide effective leadership and commitment to achieve project sustainability goals.

METRIC:

Demonstration of meaningful commitment of the project owner and the project team to the principles of sustainability and sustainable performance improvement.

To what level and extent have the project owner and the project team made public commitments, both organizational and project specific, to improving sustainable performance?

The City of Davenport has made numerous public commitments, both organizational and project specific, to improve sustainable performance. Each year, we publish accomplishments in relation to improvements in natural resources, economy, and social equity in a program referred to as Green City Initiatives. This program has been in effect for the last 5 years and the 2011/2012 Accomplishments will be published soon.

LD1.2 ESTABLISH A SUSTAINABILITY MANAGEMENT SYSTEM

INTENT:

Create a project management system that can manage the scope, scale and complexity of a project seeking to improve sustainable performance.

METRIC:

The organizational policies, authorities, mechanisms and business processes that have been put in place and the judgment that they are sufficient for the scope, scale and complexity of the project.

Are the project roles, responsibilities, and authorities for addressing the issues of sustainability for the project clearly assigned and sufficiently delegated?

The Davenport Public Works is becoming the final oversight authority for all capital improvement projects and as such. We have built extensive standard operating procedures including detailed organizational charts and documents outlining all important persons in place during the CIP process. In December 2011, several of these standard operating procedures were recognized as “model practices” by the American Public Works Association including project/construction mobilization, construction inspection, construction inspection, excavation clearance requirements, and the tree planting program. To improve these practices even more, we are developing a standardized Project Planning Concept Sheet.

Has the project team created a sustainability management policy commensurate with the scope, scale and complexity of the project?

The City of Davenport Public Works is in the planning phase of developing a Project Planning Concept Sheet mentioned above. In it, nine separate criteria are required for submission such as project location, costs, property acquisition requirements, design elements, and natural resources impacts. Engineering staff will be including additional fields addressing applicable sustainability measurements. Additionally, there are currently seven standard operating procedures in place, all in full compliance with the

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American Public Works Association accreditation standards, for infrastructure maintenance (improvement or replacement).

Have the project owner and the project team assessed and prioritized the environmental, economic, and societal aspects of the project, and set project sustainability goals, objectives and targets appropriate for the affected communities?

Assessments in relation to this ISI evaluation have been informally conducted. Specific goals, objectives, and targets outside of the standard infrastructure rehabilitation SOP have not been considered for this project.

Is the system sufficient in scope and does it contain an adequate set of mechanisms and business processes to manage the project and achieve the project's objectives and targets?

All business processes and management controls are detailed in the City of Davenport Standard Operating Procedures and all have been accredited by the American Public Works Association.

Is the project sustainability management system sufficient to manage extraordinary change in environmental operating conditions, or key design variables?

The project has gone through the standard design process which rarely leads to extraordinary changes or variances. Furthermore, the SOP pertaining to change orders for CIP projects has been awarded a "model practice" designation from the APWA.

LD1.3 FOSTER COLLABORATION AND TEAMWORK

INTENT:

Eliminate conflicting design elements, and optimize system by using integrated design and delivery methodologies and collaborative processes.

METRIC:

The extent of collaboration within the project team and the degree to which project delivery processes incorporate whole systems design and delivery approaches

To what extent has the project team incorporated the principles of collaboration, teamwork and whole systems design in the execution of the project?

All capital improvement projects are facilitated by the City of Davenport Engineering staff to eliminate the possibility of conflicting designs and other complications. This project alone included input and collaboration with no less than 7 divisions of Davenport Public Works (Streets Maintenance, Sewer Maintenance, Natural Resources, Engineering, Construction Code Enforcement, PW Administration, and Airport Operations).

To what extent has meaningful risk and reward sharing been made part of the contract between the project owner and the project team?

Risk and reward sharing has not been made part of the contract between the project owner and the project team as this is a municipal capital improvement project.

LD1.4 PROVIDE FOR STAKEHOLDER INVOLVEMENT

INTENT:

Establish sound and meaningful programs for stakeholder identification, engagement and involvement in project decision making.

METRIC:

The extent to which project stakeholders are identified and engaged in project decision making. Satisfaction of stakeholders and decision makers in the involvement process.

What is the scope and extent to which key stakeholders have been identified and characterized, and key concerns and issues identified?

Key stakeholders were very few at the time of project design and most were internal City divisions. Names of property and business owners potentially affected by the project have been maintained.

To what extent has the project team solicited and assessed stakeholder issues and concerns through meetings and information exchanges?

As this project is a rehabilitation and improvement to an existing road, no incidence of public meeting has been necessary to address issues and concerns.

To what extent has the project owner and the project team provided opportunities for stakeholder input into project plans and decision-making?

All applicable internal City divisions have been included in development of project plans and decision-making and during the ISI assessment.

Have stakeholder participation and communication programs been established on the project to facilitate stakeholder communication and feedback?

There have been no special accommodations on this project but the City does staff a full-time Neighborhood Relations Specialist through the Community, Planning, & Economic Development department to facilitate citizen-City communication and feedback.

LD2.1 PURSUE BY-PRODUCT SYNERGY OPPORTUNITIES

INTENT:

Reduce waste, improve project performance and reduce project costs by identifying and pursuing opportunities to use unwanted by-products or discarded materials and resources from nearby operations

METRIC:

The extent to which the project team identified project materials needs, sought out nearby facilities with by-product resources that could meet those needs and capture synergy opportunities

To what extent did the project team search for and identify unwanted by-products or discarded materials located in nearby facilities?

Unwanted by-products and discarded materials were not considered for this particular project with the exception of a reclaimed storm water pipe already existent at the site.

How detailed was the assessment of their potential for use on the project, either in the design and construction stage, or in operations?

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The initial design plans called for replacement of the entire stormwater line. When the project was resubmitted for sustainability/money saving consideration, it was determined significant cost savings could be realized by salvaging the current pipe system.

To what extent did the project team pursue promising by-product synergy opportunities?

As the area is sparsely populated, there are few nearby facilities to which the project team could pursue by-product synergy opportunities.

Did the project team achieve success in making use of unwanted by-products or discarded materials on the project, either in the design and construction stage, or in operations?

The project has not yet made it to the construction stage but initial estimates place the overall savings at approximately \$40,000 by salvaging and reclaiming the existing stormwater service line.

LD2.2 IMPROVE INFRASTRUCTURE INTEGRATION

INTENT:

Design the project to take into account the operational relationships among other elements of community infrastructure which results in an overall improvement in infrastructure efficiency and effectiveness.

METRIC:

The extent to which the design of the delivered works integrates with existing and planned community infrastructure, and results in a net improvement in efficiency and effectiveness.

To what extent did the project team seek to improve project sustainability performance through project-wide systems integration?

The entirety of the project is to rehabilitate an existing section of N. Harrison Street so as to integrate with the adjacent completed improvements.

Has the project team sought to improve sustainable performance of infrastructure through community-wide infrastructure systems integration?

The project design centers on the integration of the project into the adjacent infrastructure.

Has the project team sought to restore existing community infrastructure assets for the purpose of achieving higher performance through community-wide infrastructure systems integration?

Removal and installation plans are specifically addressed in the FY2012 Harrison Street Reconstruction Project Davenport, IA design specifications.

LD3.1 PLAN FOR LONG-TERM MONITORING AND MAINTENANCE

INTENT:

Put in place plans and sufficient resources to ensure as far as practical that ecological protection, mitigation and enhancement measures are incorporated in the project and can be carried out.

METRIC: Comprehensiveness and detail of long-term monitoring and maintenance plans, and commitment of resources to fund the activity.

Is there a clear and comprehensive plan in place for long-term monitoring and maintenance for the constructed works?

The Davenport Public Works will require long-term modeling of infrastructure life to be integrated with its new asset management software. The project will be subjected to the same infrastructure assessment and rating systems as all other assets.

Have sufficient resources been allocated for the monitoring and maintenance of the constructed works?

Inspection and maintenance of the constructed works will be maintained by a well-staffed and trained workforce in the City of Davenport Natural Resources Division and Streets Maintenance Division funded by Road Use Tax funds and Clean Water funds.

LD3.2 ADDRESS CONFLICTING REGULATIONS AND POLICIES

INTENT:

Work with official to identify and address laws, standards, regulations or policies that may unintentionally create barriers to implementing sustainable infrastructure.

METRIC: Efforts to identify and change laws, standards, regulations and/or policies that may unintentionally run counter to sustainability goals, objective and practices.

What is the scope and extent of search and assess negative impacts from conflicting regulations and policies?

No existing regulations or policies run counter to the sustainability goals, objectives, and practices of this project.

What is the extent to which the project team worked with regulators to mitigate the negative effects?

No existing regulations or policies run counter to the sustainability goals, objectives, and practices of this project.

LD3.3 EXTEND USEFUL LIFE

INTENT:

Extend a project's useful life by designing the project in a way that results in a completed works that is more durable, flexible, and resilient.

METRIC: The degree to which project team incorporates full life cycle thinking in improving the durability, flexibility and resilience of the project.

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To what extent have the owner and project team considered ways to extend the durability and resilience of the project early in the planning and design stage to reduce future maintenance and waste?

Construction plans have not included ways to extend the durability and resilience of the project. However, construction SOP's are set at a high standard so as to reduce future maintenance and waste.

To what extent have the owner and the project team considered the ability for future expansion or reconfiguration?

This area is not very developed and the ability to allow for future expansion or reconfiguration is feasible.

Have the owner and project team conducted a feasibility study to determine areas for potential long term cost savings in regards to designing for future expansion, reconfiguration, durability, reduced maintenance, etc.?

A feasibility study to determine these criteria has not been conducted.

RESOURCE ALLOCATION

Materials. Energy. Water.

RA1.1 REDUCE NET EMBODIED ENERGY

INTENT:

Conserve energy by reducing the net embodied energy of project materials over the project life.

METRIC:

Percentage reduction in net embodied energy from a life cycle energy assessment.

Has the project team considered estimations of materials embodied energy assessed by means of streamlined LCA?

The project team does not consider estimations of material embodied energy assessed by means of a streamlined LCA and no demonstrable energy savings are achieved as compared to industry norms.

To what extent have the owner and the project team reduced the net embodied energy of the project?

The project team does not consider estimations of material embodied energy assessed by means of a streamlined LCA and no demonstrable energy savings are achieved as compared to industry norms.

RA1.2 SUPPORT SUSTAINABLE PROCUREMENT PRACTICES

INTENT:

Obtain materials and equipment from manufacturers and suppliers who implement sustainable practices.

METRIC:

Percentage of materials sourced from manufacturers who meet sustainable practices requirements.

Has the project team defined a sound and viable sustainable procurement program?

All mulch and compost for the bioswale addition of the project will be supplied by the City of Davenport in-house Compost Facility. The facility recycles yard, garden, and tree trimmings from the City of Davenport and surrounding Scott County, Iowa. Each year the facility diverts an estimated 130,000 cubic yards of organic materials from the landfill. All other materials come from suppliers with excellent sustainability practices.

To what extent has the project team specified materials from sources been considered?

Rock: 471 tons, Sand: 380 tons, Compost: 155 CY, Mulch: 44CY, Cobles: 7 tons, Plants: 3492

How much of purchased materials and supplies will be certified by reputable third-party accreditation and standard-setting organizations?

The analysis of the compost is available on the Compost Facility website at http://www.cityofdavenportiowa.com/egov/docs/1300820036_989105.pdf

*Per the **Material Guarantee** in the bid specifications: Before any contract is awarded, the Bidder may be required to furnish a complete statement of origin, composition or manufacture of any or all materials proposed to be used in the construction of the work. Samples may also be required, which may be subjected to the test provided for in these*

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specifications and such other tests that may be necessary to determine their quality and fitness for the work.

What efforts does the project team intend to make to ascertain supplier integrity?

The purchasing of equipment, supplies, and services required by City departments for their operations are handed by the Purchasing Division, the central purchasing office for all City Departments. Included on the Purchasing Division webpage are a number of documents requiring supplier integrity.

RA1.3 USE RECYCLED MATERIALS

INTENT:

Reduce the use of virgin materials and avoid sending useful materials to landfills by specifying reused materials, including structures, and material with recycled content.

METRIC:

Percentage of project materials that are reused or recycled.

To what extent has the project team identified the appropriate reuse of existing structure and materials on site and incorporated them into the project?

Trees and shrubs removed from the site will be processed at the Davenport Compost Facility for use as compost and mulch on the project. Existing stormwater piping will be preserved and reused. Information regarding salvaged materials can be found in the design specifications.

To what extent has the project team specified materials with recycled content?

The project will use 155 CY of compost and 44 CY of mulch from the Davenport Compost Facility.

RA1.4 USE REGIONAL MATERIALS

INTENT:

Minimize transportation costs and impacts and retain regional benefits through specifying local sources.

METRIC:

Percentage of project materials by type and weight or volume sourced within the required distance.

To what extent has the project team specified locally sourced materials, plants, aggregates, and soil?

Quantities:

Excavation= 971CY

Rock= 471 Tons

Sand= 380 Tons

Compost= 155CY

Mulch= 44 CY

Cobles= 7 Tons

Plants= 3,492

Materials and Installation Costs:

Excavation= \$15,000

Rock= \$14,130

Sand= \$5,700

Compost= \$6,200

Mulch= \$2,200

Cobles=\$1,100

Plants= \$41,904

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By virtue of statutory authority, a preference will be given to products and provisions grown and coal produced within the State of Iowa and to Iowa domestic labor. A preference will be given to resident Bidders in Accordance with Chapter 73 of the Code of Iowa. Thus, it is more beneficial to use locally sourced materials. Of the materials listed above, it is estimated all will be sourced locally with the plants being germinated less than 100 miles away from the Davenport city limits.

RA1.5 DIVERT WASTE FROM LANDFILLS

INTENT:

Reduce waste, and divert waste streams away from disposal to recycling and reuse.

METRIC:

Percentage of total waste diverted from disposal.

Has the project team developed a management plan to decrease project waste and divert waste from landfills and incinerators during operation?

Select construction material and onsite trees/shrubs will be recycled. The project involves a roadway, which would not generate any waste during operation. Therefore, a management plan is not necessary.

Has the project team identified potential destinations for waste generated on site?

Construction materials will be recycled or disposed of by the City of Davenport at appropriate landfill facilities. The project involves a roadway and would not generate solid waste during operation.

To what extent has the project team diverted waste from landfills?

With exception of the tree and shrub recycling mentioned above, the benchmark applies to this project: waste minimization, waste recycling and reuse are done if cost reductions can be easily obtained, most likely as end-of-pipe decisions. Some recycling of waste is done, but it is done mostly ad hoc.

RA1.6 REDUCE EXCAVATED MATERIALS TAKEN OFF SITE

INTENT:

Minimize the movement of soils and other excavated materials off site to reduce transportation and environmental impacts.

METRIC:

Percentage of excavated material retained on site.

To what extent has the project team designed the project to balance cut and fill to reduce the excavated material taken off site?

All excavated materials are allowable for reuse in the construction process. At this time, all 3760 cubic yards of roadway excavation can be reused instead of being carried off site.

RA2.1 REDUCE ENERGY CONSUMPTION

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INTENT:

Conserve energy by reducing overall operation and maintenance energy consumption throughout the project life cycle.

METRIC:

Percentage of reductions achieved.

To what extent have the owner and project team conducted planning or design reviews to identify and analyze options for reducing energy consumption in the operation and maintenance of the constructed works?

Have the owner and project team conducted feasibility and cost analysis to determine the most effect methods for energy reduction and incorporated them into the design?

To what extent does the project reduce energy consumption over industry norms?

The project is a reconstruction of an existing roadway and will not consume any energy once completed.

RA2.2 USE RENEWABLE ENERGY

INTENT:

Meet energy needs through renewable energy sources.

METRIC:

Extent to which renewable energy resources are incorporated into the design, construction and operation.

To what extent is the project's energy needs met through renewable energy?

There will be no additional energy consumptions on this project.

RA2.3 COMMISSION AND MONITOR ENERGY SYSTEMS

INTENT:

Ensure efficient functioning and extend useful life by specifying the commissioning and monitoring of the performance of energy systems.

METRIC:

Third party commissioning of electrical/mechanical systems and documentation of system monitoring equipment in the design.

The scope of the project does not require integration of this section into design and construction.

RA3.3 MONITOR WATER SYSTEMS

INTENT:

Implement programs to monitor water systems performance during operations and their impacts on receiving waters.

METRIC:

Documentation of system in the design.

The scope of the project does not require integration of this section into design and construction.

NATURAL WORLD

**Siting. Land and Water.
Biodiversity.**

NW1.1 PRESERVE PRIME HABITAT

INTENT:

Avoid placing the project — and the site compound/temporary works — on land that has been identified as of high ecological value or as having species of high value.

METRIC:

Avoidance of high ecological value sites and establishment of protective buffer zones.

Does the project avoid development on land that is judged to be “prime habitat” by a third party?
There are no lands designated a “prime habitat” by any third party. An existing wetland adjacent to the property will be preserved and expanded as a result of this project.

Does the project preserve, at minimum, an appropriately sized buffer zone of undeveloped land or other habitat protection and connectivity according to the specified width around all prime habitat area?

While there is the adjacent wetland, incorporation of the bioswales and relocation of the reclaimed stormwater piping will enhance the wetland and increase the stability of the buffer zone.

Does the project significantly increase the area of prime habitat through the restoration of the vegetation and habitat connectivity to a degree suitable as a habitat (as determined by a qualified habitat restoration professional), either as part of the protective buffer zone or adjacent to the site?

The project will significantly improve the adjacent wetland and the inclusion of an additional 3400 plantings will increase the functionality of said wetland.

NW1.2 PROTECT WETLANDS AND SURFACE WATER

INTENT:

Protect, buffer, enhance and restore areas designated as wetlands, shorelines, and waterbodies by providing natural buffer zones, vegetation and soil protection zones.

METRIC:

Size of natural buffer zone established around all wetlands, shorelines, and waterbodies.

Is the project located on a site that neither contains nor is located within the specified distance of vernal pools, wetlands, shorelines, or water bodies unless located on a previously developed site?

The project is located on a previously developed site.

If the site contains wetlands or water bodies, has the project team established a vegetation and soil protection zone (VSPZ) to provide a natural zone unaffected by development that maintains a buffer equal to the specified distance?

The project team will be installing nearly 3500 native plantings in the area in addition to the existing buffer zone.

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Has the project team restored previously degraded buffer zones to a natural state on a previously developed site?

All creek stabilization projects conducted by the City of Davenport Natural Resources Division include restoration of previously degraded buffer zones to a minimum of 60 feet (30 feet per side) of native plantings in addition to any other restorative action.

NW1.3 PRESERVE PRIME FARMLAND

INTENT:

Identify and protect soils designated as prime farmland, unique farmland, or farmland of statewide importance.

METRIC:

Percentage of prime farmland avoided during development.

There are no significant soils on the site and the improvement of the road will greater increase the access to an existing farmstead.

NW1.4 AVOID ADVERSE GEOLOGY

INTENT:

Avoid development in adverse geologic formations and safeguard aquifers to reduce natural hazards risk and preserve high quality groundwater resources.

METRIC:

Degree to which natural hazards and sensitive aquifers are avoided and geologic functions maintained.

There are no earthquake prone areas and over karst formation at the site.

NW1.5 PRESERVE FLOODPLAIN FUNCTIONS

INTENT:

Preserve floodplain functions by limiting development and development impacts to maintain water management capacities and capabilities.

METRIC:

Efforts to avoid floodplains or maintain predevelopment floodplain functions.

Does the project avoid or limit new development within the design frequency floodplain for waterways of all sizes, unless water dependent infrastructure that must cross a waterway, or is the water dependent infrastructure designed to minimize floodplain impact waterway crossings.

The project is designed to not only increase traffic capabilities in the area, but also mitigate stormwater runoff from all existing infrastructure and impervious areas adjacent to the site.

Does the project maintain pre-development floodplain infiltration and water quality?

All impervious surfaces, established vegetation and soil protection zones, and other strategies that allow for natural floodwater infiltration and filtration of pollutants in the City of Davenport are recorded and catalogued by the Natural Resources division of the

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Public Works Department. Estimates of pre-development and post-development infiltration capacity are calculated per industry standards.

Does the project maintain or enhance riparian and aquatic habitat and the maintenance or enhancement of the riparian and in-channel physical and vegetative habitat to support threatened and endangered or otherwise desirable species? Has a flood emergency plan been prepared for all infrastructures in the floodplain accounting for emergency operation and/or evacuation?

While there are efforts to re-establish native plantings in the area, the location of the work site is far enough from bodies of water flood emergency planning is not necessary.

NW1.6 AVOID UNSUITABLE DEVELOPMENT ON STEEP SLOPES

INTENT:

Protect steep slopes and hillsides from inappropriate and unsuitable development in order to avoid exposures and risks from erosion and landslides, and other natural hazards.

METRIC:

The degree to which development on steep slopes is avoided, or to which erosion control and other measures are used to protect the constructed works as well as other downslope structures.

Does the project follow best management practices to manage erosion and prevent landslides?

Is the Project sited optimally and managed to avoid excessive erosion?

Does the project avoid high risk hillsides or steep slopes?

The entire project is located in a relatively flat area with a minimal topographical change. No high risk hillsides or steep slopes are present in the area.

NW1.7 PRESERVE GREENFIELDS

INTENT:

Conserve undeveloped land by locating projects on previously developed greyfield sites and/or sites classified as brownfields.

METRIC:

Percentage of site that is a greyfield or the use and cleanup of a site classified as a brownfield.

Is the project located on a site that was previously developed, and what percentage of the project site was previously developed?

Is the project located on a site where all or part of it is documented as contaminated according to a ASTM E1309-11 Phase II Environmental Assessment or on a site deemed a brownfield by local, state, or federal government agencies?

Has a brownfield remediation plan been prepared according to the ASTM report?

Though the project is on a previously developed site, it does not classify as a brownfield or greyfield site.

NW2.1 MANAGE STORMWATER

Harrison Street Reconstruction Project

INTENT:

Minimize the impact of infrastructure on stormwater runoff quantity and quality.

METRIC:

Infiltration and evapotranspiration capacity of the site and return to pre-development capacities.

What percentage improvement for a greyfield or brownfield site does the site's proposed water storage, infiltration, evapotranspiration, and/or water harvesting capacity achieve, or does the site maintain a Greenfield site water storage capacity?

The project is designed to handle all stormwater runoff from the project and reduce runoff from the impervious surfaces adjacent to the project as well as remove over 90% of all pollutants, hydrocarbons, and bacteria entering this area.

Is 100% of the target water storage capacity achieved for greyfield and brownfield sites, or does the Greenfield site exceed 100% target water capacity so as to mitigate the impact of adjacent developed sites?

100% target water capacity is exceeded at this site.

NW2.2 REDUCE PESTICIDE AND FERTILIZER IMPACTS

INTENT:

Reduce non-point source pollution by reducing the quantity, toxicity, bioavailability and persistence of pesticides and fertilizers, or by eliminating the need for the use of these materials.

METRIC:

Efforts made to reduce the quantity, toxicity, bioavailability and persistence of pesticides and fertilizers used on site, including the selection of plant species and the use of integrated pest management techniques.

What operational policies will be put in place to control the application fertilizers and pesticides?

Seven pages relating to seeding, fertilizers and flexible growth mediums are included in the bid specifications.

What runoff controls will be installed to minimize groundwater and surface water contamination?

During the construction process, the contractor shall use "Dandy Curb" curb inlet filters (compost sock) or its equivalent for the inlet sediment barriers located at the inlets and the stone flume curb openings. The contractor shall be responsible for keeping adjacent streets and property free of excessive buildup of soil and/or granular material. After construction, the bioswale addition will be responsible for filtering out over 90% of all pollutants, hydrocarbons, and bacteria.

Has the project team selected pesticides and fertilizers that have low toxicity, persistence and bioavailability?

Fertilizer is addressed in the bid specifications as follows:

Apply a 13-13-13 or approved equal chemically-combined commercial fertilizer at a rate of 400 pounds per acre.

- 1. Apply fertilizer after shaping and fine grading and prior to the combined tillage and rock removal operations. On areas inaccessible to machinery, the fertilizer should be spread prior to tillage and cultivated seedbed preparation and uniformly mixed into the one and one-half inches (1-1/2") of topsoil*

Harrison Street Reconstruction Project

- Fertilizer shall be spread with a mechanical spreader or sprayer uniformly to all areas to be seeded at the minimum rate specified. The fertilizer shall be tilled into the soil to a minimum depth of three inches (3").*

Has the project team designed the landscaping to incorporate plant species that require no pesticides, herbicides and fertilizers, or use integrated pest management approaches?

The nearly 3500 native plantings incorporated into the bioswales will not require pesticide, herbicides, or fertilizers.

NW3.1 PRESERVE SPECIES BIODIVERSITY

INTENT:

Protect biodiversity by preserving and restoring species and habitats.

METRIC:

Degree of habitat protection.

Does the project demonstrate that it does not impact natural habitat and movement corridors or will mitigate adverse impacts of development?

Does the project facilitate movement between habitats, provide new connections, or otherwise improve existing habitat?

Does the project increase available habitat, increase connectivity between habitat area by providing new connections that were not available before, or by removing existing barrier to movement and habitat?

The overall project will improve the hydrological condition of the emergent wetland adjacent to the project site. It will not increase connectivity between habitat areas or provide new connections but will allow for expansion of the wetlands.

NW3.2 CONTROL INVASIVE SPECIES

INTENT:

Use appropriate non-invasive species and control or eliminate existing invasive species.

METRIC:

Degree to which invasive species have been reduced or eliminated.

Does the project use only locally appropriate and non-invasive plants on the site?

The project will use only native-Iowa prairie plants in the bioswale area. Approved grasses and plantings will be planted in the boulevard separating each lane of traffic; what is installed will be decided at a later time.

Does the project control invasive species already on the site?

Plantings currently on the site will be removed to make way for construction and improvements.

Does the project actively eliminate existing invasive species and ensure that invasive species stay off the site?

Care of the site will be handled in-house by Natural Resources division staff or contracted out to a licensed contractor selected to handle all natural planting sites owned and maintained by the City of Davenport.

NW3.3 RESTORE DISTURBED SOILS

INTENT:

Restore soils disturbed during construction and previous development to bring back ecological and hydrological functions.

METRIC:

Percentage of disturbed soils restored.

At this time, there has been no soil disruption and no specific provisions exist in the bid specifications for 100% restoration of disturbed soil.

NW3.4 MAINTAIN WETLAND AND SURFACE WATER FUNCTIONS

INTENT:

Maintain and restore the ecosystem functions of streams, wetlands, waterbodies and their riparian areas.

METRIC:

Number of functions maintained and restored.

Does the project maintain or enhance hydrologic connection?

The project will enhance the hydrologic connection to the adjacent emergent wetland.

Does the project maintain or enhance water quality?

The project will remove at least 90% of all pollutants, hydrocarbons, and bacteria present in water flowing into the area.

Does the project maintain or enhance habitat?

The project will at a minimum, maintain the habitat of the emergent adjacent wetland.

Does the project maintain or restore sediment transport?

Per the bid specifications, sediment control must be maintained during construction through the use of compost socks and silt fencing. After construction, any sediment from the project should be captured by the bioswales.

Does the project maintain all four ecosystem functions and fully restore any disturbed functions?

See above.

CLIMATE
Emission. Resilience.

CR1.1 REDUCE GREENHOUSE GAS EMISSIONS

INTENT:

Conduct a comprehensive life-cycle carbon analysis and use this assessment to reduce the anticipated amount of net greenhouse gas emissions during the life cycle of the project, reducing project contribution to climate change.

METRIC:

Life-cycle net carbon dioxide equivalent (CO₂e) emissions.

Has the project team performed a life-cycle carbon assessment on the project, using recognized and accepted methodologies, data sources and software?

Has the project team worked to design the project so that it reduces carbon emissions to meet the designated reduction compared to the emissions calculated in the life cycle carbon assessment?

Life-cycle carbon assessments have been considered but not conducted.

CR1.2 REDUCE AIR POLLUTANT EMISSIONS

INTENT:

Reduce the emission of six criteria pollutants; particulate matter (including dust), ground level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, lead, and noxious odors.

METRIC:

Measurements of air pollutants as compared to standards used.

The federal Clean Air Act regulate the emission of airborne pollutants from various mobile and stationary sources. The United States Environmental Protection Agency (USEPA) is the federal agency designated to administer air quality regulation. This agency has established ambient air quality standards for the protection of public health. Federal standards have been established for six criteria pollutants, including ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulates less than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}), and lead (Pb) (see Table 1).

Table 1
Current Federal Ambient Air Quality Standards

Pollutant	Federal Standard
Ozone	0.075 ppm (8-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)
Nitrogen Dioxide	0.10 ppm (1-hr avg) 0.053 ppm (annual avg)
Sulfur Dioxide	0.5 ppm (3-hr avg) 0.075 ppm (1-hr avg)

Harrison Street Reconstruction Project

Lead	1.5 $\mu\text{g}/\text{m}^3$ (3-month avg)
Particulate Matter (PM ₁₀)	150 $\mu\text{g}/\text{m}^3$ (24-hr avg)
Particulate Matter (PM _{2.5})	15 $\mu\text{g}/\text{m}^3$ (annual avg) 35 $\mu\text{g}/\text{m}^3$ (24-hr avg)

ppm= parts per million

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Source: California Air Resources Board,

<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, June 6, 2012.

No additional measures were taken to minimize adverse impacts on air quality other than those required by regulation. Compliance with local laws and regulations regarding the control of dust and odors during construction; however, Construction Inspectors will be on site at all times to ensure compliance.

CR2.1 ASSESS CLIMATE THREAT

INTENT:

Develop a comprehensive Climate Impact Assessment and Adaptation Plan.

METRIC:

Summary of steps taken to prepare for climate variation and natural hazards.

No comprehensive climate threat assessment done

CR 2.2 AVOID TRAPS AND VULNERABILITIES

INTENT:

Avoid traps and vulnerabilities that could create high, long-term costs and risks for the affected communities.

METRIC:

The extent of the assessment of potential long-term traps, vulnerabilities and risks due to long-term changes such as climate change and the degree to which these were addressed in the project design and in community design criteria.

Only related regulations and design standards are considered

CR2.3 PREPARE FOR LONG-TERM ADAPTABILITY

INTENT:

Prepare infrastructure systems to be resilient to the consequences of long-term climate change, perform adequately under altered climate conditions, or adapt to other long-term change scenarios.

METRIC:

The degree to which the project has been designed for long-term resilience and adaptation.

Has the project team selected the site and designed the infrastructure project and its related systems to be resilient and adaptive to these changes and function under altered climate

Harrison Street Reconstruction Project

conditions, supply shortfalls, or other significant changes in operation or environmental conditions?

Has the project team made substantial efforts to restore or rehabilitate any existing effects of long-term change, e.g., desertification, beach erosion, loss of wetlands, etc.?

No comprehensive climate change consequences preparation has been done in relation to long-term adaptability.

CR2.4 PREPARE FOR SHORT-TERM HAZARDS

INTENT:

Increase resilience and long-term recovery prospects of the project and site from natural and man-made short-term hazards.

METRIC:

Steps taken to improve protection measures beyond existing regulation

Has the project team considered which types of natural and man-made hazards are possible in the region, and researched how the frequency and severity of these disasters may change over the life of the project?

The most common natural disaster occurring in this area is floods and tornadoes. Tornadoes occur on an average frequency of 48 per year across the state of Iowa; however, there is a wide variation from year-to-year (i.e., 2003 had 28 tornadoes; 2004 had 120). Flooding is also another major concern but the project is located far enough from a water source to warrant little concern.

Has the project team incorporated design strategies into the project to safeguard against these natural hazards?

The project will reduce stormwater runoff, a major cause of localized flooding. Though the project is located far enough from a water source so as not to be a concern for flooding, runoff from impervious surfaces can impact those water sources. The project is designed to mitigate much of the runoff in the area.

Does the project restore habitats in a way that reduces the impacts of future short-term disasters?

The project will increase the capacity of the emergent wetland adjacent to the project site which will in turn, reduce localized flooding.

CR2.5 MANAGE HEAT ISLAND EFFECTS

INTENT:

Minimize surfaces with a high solar reflectance index (SRI) to reduce localized heat accumulation and manage microclimates.

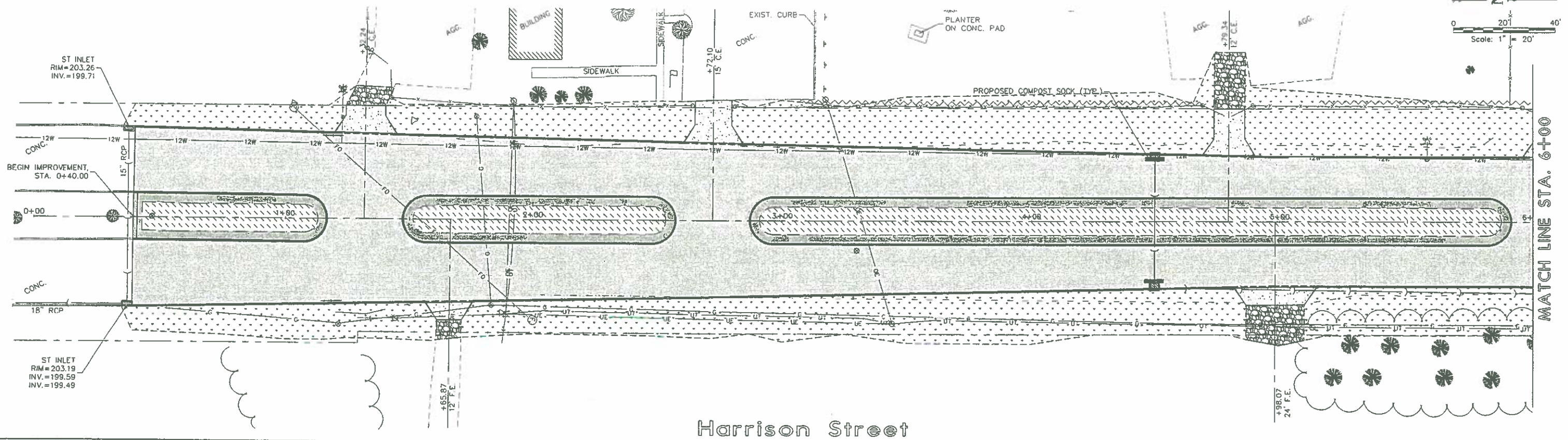
METRIC:

Percentage of site area that meets SRI Criteria.

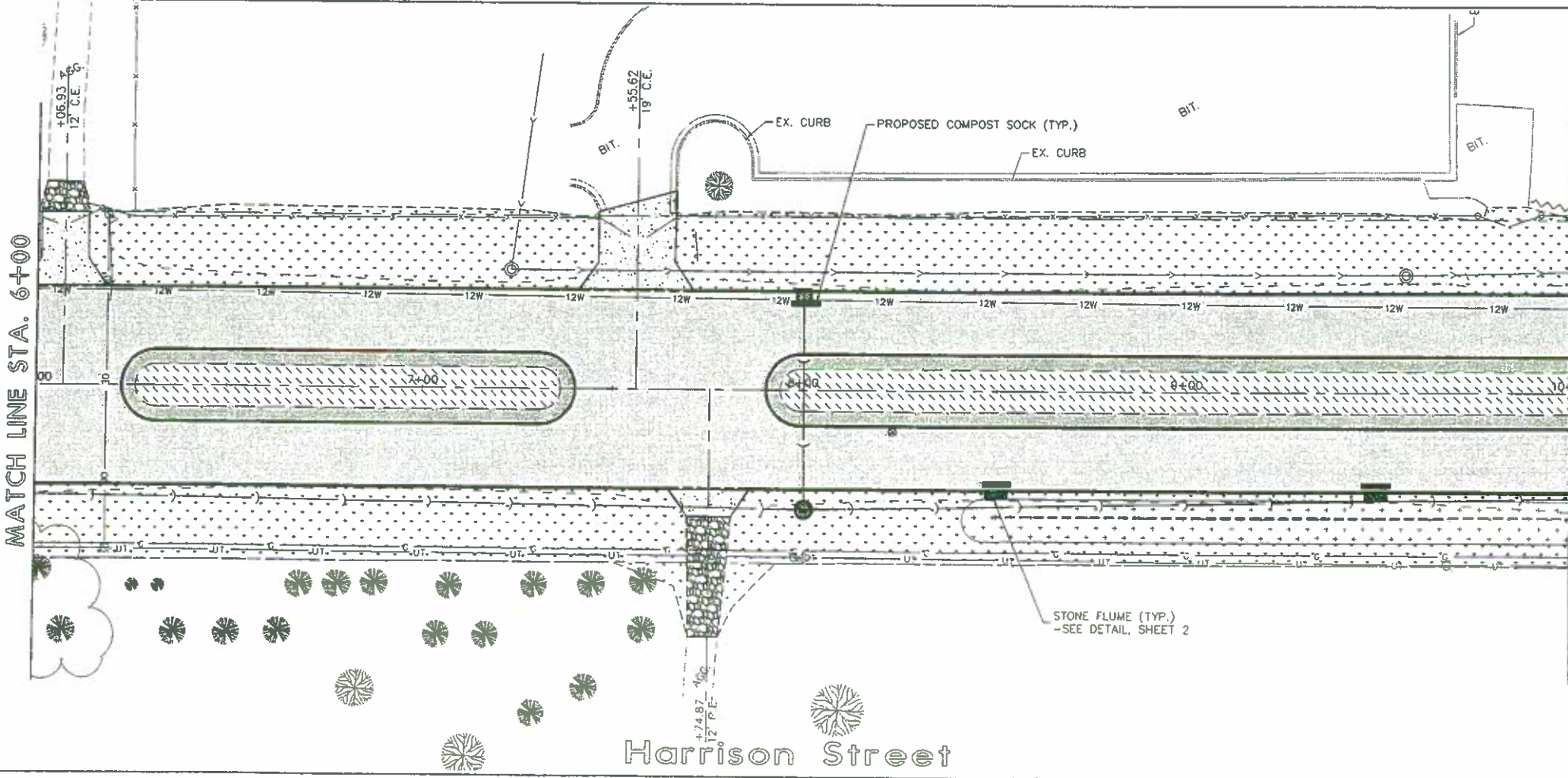
Does the project meet heat island requirements through shading or minimum SRI requirements for the designated percentage of hardscapes?

Harrison Street Reconstruction Project

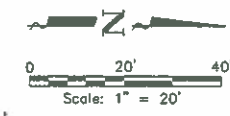
The design specifications include plans for median planters to be completely planted with trees and other shading by an outside contractor upon the completion of the construction project. SRI requirements are not typically considered in the design process.



Harrison Street



Harrison Street



LEGEND

NOTE: THIS IS A STANDARD LEGEND, NOT ALL ITEMS SHOWN MAY BE ON DRAWINGS.

- PROPOSED SILT FENCE (EC-201)
- PROPOSED EROSION CONTROL BLANKET (INCLUDED IN COST OF EMBANKMENT)
- PROPOSED SEED, FERTILIZE AND MULCH
- PROPOSED BIOSWALE
- PROPOSED SODDING
- PROPOSED PLANTING AREA (BY OTHERS)
- DRAINAGE SWALE
- PROPOSED COMPOST SOCK
- PROPOSED DITCH CHECK

FY 2012 HARRISON STREET
RECONSTRUCTION PROJECT

REVISIONS		
NO.	ITEM	DATE

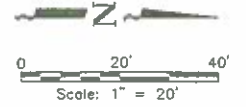
PLOTTING SCALE: 1" = 20'
DRAWN BY: JDU
CHECKED BY: SAS
DATE: JANUARY, 2012



CITY OF DAVENPORT, IOWA
ENGINEERING DIVISION
1200 East 46th Street Davenport, Iowa 52807
(563) 326-7729 FAX (563) 327-5182










EROSION CONTROL PLAN
STA. 0+40 - STA. 10+00
ROADWAY IMPROVEMENTS DAVENPORT, IOWA
FILE NAME: ?:\icd\11.069\DWG\11-069-MDL-PLN temp.dwg JOB NUMBER: 01-26-11-069

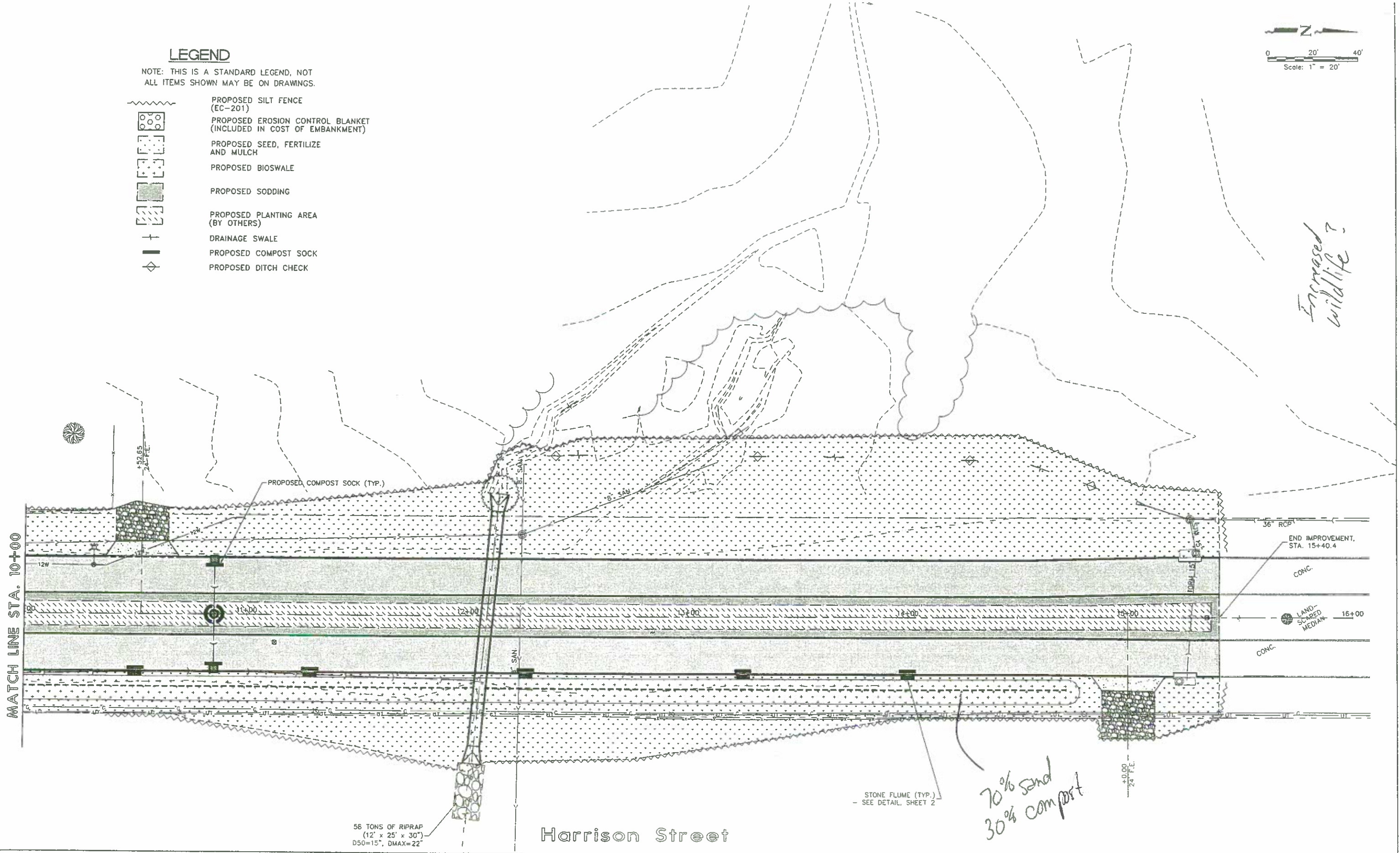
SHEET NO.
9
OF 18



LEGEND

NOTE: THIS IS A STANDARD LEGEND, NOT ALL ITEMS SHOWN MAY BE ON DRAWINGS.

-  PROPOSED SILT FENCE (EC-201)
-  PROPOSED EROSION CONTROL BLANKET (INCLUDED IN COST OF EMBANKMENT)
-  PROPOSED SEED, FERTILIZE AND MULCH
-  PROPOSED BIOSWALE
-  PROPOSED SODDING
-  PROPOSED PLANTING AREA (BY OTHERS)
-  DRAINAGE SWALE
-  PROPOSED COMPOST SOCK
-  PROPOSED DITCH CHECK



MATCH LINE STA. 10+00

Increased wildlife?

*70% sand
30% compost*

FY 2012 HARRISON STREET
RECONSTRUCTION PROJECT

REVISIONS		
NO.	ITEM	DATE

PLOTTING SCALE:	1" = 20'
DRAWN BY:	JDU
CHECKED BY:	SAS
DATE:	JANUARY, 2012



CITY OF DAVENPORT, IOWA
ENGINEERING DIVISION
1200 East 46th Street Davenport, Iowa 52807
(563) 326-7729 FAX (563) 327-5182

GRADING & EROSION CONTROL PLAN
STA. 10+00 - STA. 15+40.4
ROADWAY IMPROVEMENTS DAVENPORT, IOWA
FILE NAME: F:\ada\11.059\DWG\11-059-MDL-PLN temp.dwg JOB NUMBER: 01-28-11-069

SHEET NO.
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OF 18

Appendix H
List of Resources

APWA Emerging Leaders Class V Project Report

American Public Works Association
Emerging Leaders Academy
Class V

Sustainability in Public Works
List of Sustainability Resources 2012

APWA Sustainable Systems:

- APWA Center for Sustainability: <http://www.apwa.net/centerforsustainability>
- APWA Center for Sustainability Framework for Sustainable Communities: http://www2.apwa.net/documents/sust/framework_designFINAL.pdf
- APWA Commitment to Climate Protection: <http://www2.apwa.net/documents/sust/climate.pdf>
- APWA Center for Sustainability Principles of Sustainability: <http://www.apwa.net/centerforsustainability/Process/Principles-of-Sustainability>
- APWA Center Sustainability Works Blog: <http://www.apwa.net/centerforsustainability/blog/Posts>
- Members of the APWA Center for Sustainability: <http://www.apwa.net/centerforsustainability/about/who-leads-the-center-for-Sustainability>

Sustainable Communities:

- Institute for Sustainable Infrastructure: <http://www.sustainableinfrastructure.org/>
- Join ISI: <http://www.sustainableinfrastructure.org/membership/index.cfm>
- Interagency Partnership for Sustainable Communities: <http://www.sustainablecommunities.gov/>
- National Complete Streets Coalition: www.completestreets.org
- Community Research Connections: <http://crrresearch.org/sustainable-infrastructure/sustainable-infrastructure>

- Sustainable Infrastructure Society: <http://www.sustainis.org/>

University Sustainability Organizations:

- Harvard University Graduate School of Design Zofnass Program for sustainable infrastructure: http://www.gsd.harvard.edu/research/research_centers/zofnass/
- Cornell University David R. Atkinson Center for a Sustainable Future News: <http://www.sustainablefuture.cornell.edu/news/>
- Carnegie Mellon Green Design Institute Research on Sustainable Infrastructure and ongoing projects: <http://www.ce.cmu.edu/greendesign/research/sustinf.html>
- Stanford University Leadership in Sustainability and Department of Sustainability and Energy Management Contacts: http://sustainablestanford.stanford.edu/program_staff#water
- Oxford University Research on Resilient and Sustainable Infrastructure: <http://www-fif.construction.cam.ac.uk/FIF1Presentations/fif113universityofoxfordpart2>
- University of California Berkeley Transportation Sustainability Research Center: <http://tsrc.berkeley.edu/>
- Cornell University Sustainability Research Facility: <http://cusd.cornell.edu/srf/>

National& International Sustainability Organizations:

- National Association of Regional Councils: www.narc.org
- American Planning Association: www.planning.org
- International City Manager's Association (ICMA) Knowledge Network. http://icma.org/en/icma/knowledge_network/home
- National League of Cities (NLC): www.nlc.org
- National Association of Counties (NACo): www.naco.org
- National Complete Streets Coalition: www.completestreets.org
- American Institute of Architects: www.aia.org
- Sustainable Urban Forest Coalition (SUFC): <http://www.urbanforestcoalition.com/>
- American Society of Landscape Architects: www.asla.org
- Greenroads Foundation: www.greenroads.org
- Sustainable Sites Initiative: <http://www.sustainablesites.org/>
- American Academy of Environmental Engineers: <http://www.aeee.net/>
- American Society of Civil Engineers: <http://www.asce.org/>
- American Council of Engineering Companies: <http://www.acec.org/>
- The Center for Climate and Energy Solutions—C2ES: www.C2ES.org
- Australian Green Infrastructure Council: <http://www.agic.net.au/ISratingscheme1.htm>

- World Bank Group Sustainable Infrastructure Action Plan:
<http://siteresources.worldbank.org/INTSDNETWORK/Resources/SIAPfinal.pdf>
- Sustainable Research Group: <http://www.sustainableresearchgroup.com/>
- National Science Foundation Sustainability Research Networks:
- Alliance for Research on Corporate Sustainability: <http://www.corporate-sustainability.org/>
- Alcoa Foundation Advancing Sustainability Research:
<http://www.iie.org/Programs/Alcoa-Foundation-Advancing-Sustainability-Research>
- Sustainalytics: <http://www.sustainalytics.com/>
- Sustainability Research and Policy Network: <http://www.ssrn.com/srpn/index.html>
- United States Business Council for Sustainable Development: <http://usbcsd.org/>
- ICLEI –US Local Governments for Sustainability:
<http://www.icleiusa.org/sustainabilitytoolkit>
- List of U.S. Cities and Counties With Sustainability Plans or Climate Action Plans:
<http://www.icleiusa.org/action-center/planning/List%20of%20U.S.%20Sustainability%20and%20Climate%20Plans.pdf>
- Local Governments for Sustainability USA: <http://www.icleiusa.org/>
-

Government Sustainability Organizations:

- US EPA Smart Growth Announcements: <http://www.epa.gov/smartgrowth/>
- US EPA’s Sustainable and Healthy Communities Research:
<http://www.epa.gov/research/priorities/sustainablecommunities.htm>
- US EPA’s Safe and Sustainable Water Resources Research:
<http://www.epa.gov/research/priorities/waterresources.htm>
- US EPA’s Green Infrastructure (basics, tools, case studies, research, and library):
<http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>
- US EPA’s Water Infrastructure: Moving Toward Sustainability:
<http://water.epa.gov/infrastructure/sustain/index.cfm>
- US EPA’s Water Resource Adaptation Program (WRAP):
<http://www.epa.gov/nrmrl/wswrd/wq/wrap/>
- US Army Sustainability: <http://www.sustainability.army.mil/>
- US Partnership for Education for Sustainable Development
- U.S. Department of Housing and Urban Development Office of Sustainable Housing and Communities:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/sustainable_housing_communities/

- U.S. Department of Transportation DOT Livability: <http://www.dot.gov/livability/>
- U.S. Department of Energy Municipal Solid-State Street Lighting Consortium www.ssl.energy.gov/consortium.html
- US Department of Energy Berkeley Lab News Center: <http://newscenter.lbl.gov/feature-stories/2009/03/27/sustainability-and-energy/>
- 2010 US Department of State Agency Sustainability Plan: <http://www.state.gov/m/pri/rls/plans/146301.htm>
- Sustainability at the National Academies: <http://sites.nationalacademies.org/PGA/sustainability/index.htm>
- US Department of Commerce Sustainable Manufacturing Initiative: <http://www.trade.gov/competitiveness/sustainablemanufacturing/index.asp>
- US EPA SmartWay Resource Center: <http://www.epa.gov/smartway/partner-resources/summit.htm>
- US Government Sustainability Performance: <http://sustainability.performance.gov/>

Sustainability Rating Systems:

- US Green Building Council Leadership in Energy and Environmental Design (LEED) Rating Systems: <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>
- New York State Department of Transportation Green Leadership in Transportation and Environmental Sustainability (GreenLITES): <https://www.dot.ny.gov/programs/greenlites>
- Washington DOT/University of Washington Greenroads: <http://www.ce.washington.edu/research/construction/greenroads.html>
- Illinois DOT Livable and Sustainable Transportation Rating System and Guide Guidebook: <http://www.dot.il.gov/green/documents/I-LASTGuidebook.pdf>
- Portland (Oregon) Bureau of Transportation; Santa Cruz County Regional Transportation Commission Sustainable Transportation Access Rating System (STARS): <https://www.portlandonline.com/transportation/index.cfm?&login=1&a=330336&c=34749>
- Wisconsin DOT, University of Wisconsin Building Environmentally and Economically Sustainable Transportation Infrastructure Highways (BE2ST): http://www.cte.ncsu.edu/EEConference/sessions/documents/08-3_Edil.pdf
- Federal Highway Administration Sustainable Highways Self Evaluation Tool: <http://www.sustainablehighways.org/>

- US EPA (Region 3), FHWA:, State Maryland DOT, District of Columbia DOT, Virginia DOT Green Highway Partnerships:
<http://www.fhwa.dot.gov/publications/publicroads/06nov/07.cfm>
- American Society of Landscape Architects The Sustainable Sites Initiative (SITES):
<http://www.sustainablesites.org/>
- Institution of Civil Engineer Research and Development Enabling Fund Civil Engineering Environmental Quality Assessment and Award Scheme (CEEQUAL):
<http://www.ceequal.com/about.html>
- Australia DOT, Vic Roads Integrated VicRoads Environmental Sustainability Tool (INVEST):
<http://www.vicroads.vic.gov.au/Home/AboutVicRoads/AnnualReports/VicRoads201011AnnualReport/201011AnnualReport+IntegrationAndSustainability.htm>
- Envision Sustainability Rating System Introduction:
<http://www.sustainableinfrastructure.org/rating/index.cfm>
- Envision Rating System: The need for Sustainable Infrastructure Design and Development:
<http://www.sustainableinfrastructure.org/rating/infrastructure/whatistheneed.cfm>