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A CRITICAL EVALUATION OF THE SUSTAINABLE SITES INITIATIVE'S
GUIDELINES AND PERFORMANCE BENCHMARKS 2009 AS
APPLIED TO THE DESIGN AND DEVELOPMENT OF
THE OREM, UTAH INTERMODAL CENTER

by

Jeffrey E. Dzikowski

A report submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF LANDSCAPE ARCHITECTURE
(PLAN B)

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UTAH STATE UNIVERSITY
Logan, Utah

2012

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ABSTRACT

A Critical Evaluation of the Sustainable Sites Initiative's
Guidelines and Performance Benchmarks 2009 as
Applied to the Design and Development
of the Orem, Utah Intermodal Center

by

Jeffrey E. Dzikowski, Master of Landscape Architecture
Utah State University, 2012

Major Professor: Dr. Keith M Christensen
Department: Landscape Architecture and Environmental Planning

In 2006 the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center, the United States Botanical Garden, and additional stakeholders joined together to form the Sustainable Sites Initiative™ (SITES™), an organization dedicated to the promotion of sustainable land development and management practices. As part of this effort SITES recently released its *Guidelines and Performance Benchmarks 2009*, a document which provides a voluntary guideline and rating system for the development, operation, and maintenance of sustainable landscapes.

This guideline and rating system is currently being tested through the Sustainable Sites Initiative pilot program, in which a select group of approximately 150 projects are

participating in an initial trial of the SITES certification process. In an effort to provide SITES with in-depth feedback from one of its pilot program participants, the following study involved an interview of a group of key informants who were responsible for development of the SITES pilot application for the Orem Intermodal Center. Through inductive analysis of the data collected from the interviews, this study evaluated the effectiveness of the *SITES Guidelines and Performance Benchmarks 2009* as applied to the design and development of the Orem Intermodal Center project. The results and implications of this evaluation are discussed within the study. The study's findings have also been forwarded to SITES, with the expectation that this information will help inform refinement of the *Guidelines and Performance Benchmarks* prior to the widespread release of SITES in 2013.

(117 pages)

Public Abstract
A Critical Evaluation of the Sustainable Sites Initiative's Guidelines and Performance
Benchmarks 2009 as Applied to the Design and Development
of the Orem, Utah Intermodal Center

by
Jeffrey E. Dzikowski

In an effort to promote sustainable land development and management practices, the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center, the United States Botanical Garden, and additional stakeholders joined together in 2006 to form the Sustainable Sites Initiative™ (SITES™). Since that time SITES has been working to develop a set of standards and measures for the voluntary certification of sustainable landscapes. This effort recently culminated in the publication of the *SITES Guidelines and Performance Benchmarks 2009*, a document that presents the nation's first guideline and rating system for sustainable land development, operation, and maintenance.

SITES is currently testing this guideline and rating system through its pilot program, during which a select group of approximately 150 projects are participating in an initial trial of the SITES certification process. SITES anticipates that feedback from these pilot projects will help it to refine the *Guidelines and Performance Benchmarks* prior to the widespread release of the SITES certification program in 2013.

In an effort to provide the Sustainable Sites Initiative with in-depth feedback from one of its pilot program projects, the following study involved an interview of the group of individuals who were responsible for the development of a SITES application for the Orem Intermodal Center project. Through analysis and interpretation of the responses gathered from the interview, this study evaluated the effectiveness of the *SITES Guidelines and Performance Benchmarks 2009* as applied to the design and development of the Orem Intermodal Center. The results and implications of this evaluation are presented as part of the study.

ACKNOWLEDGEMENTS

I would like to thank all the members of my thesis committee, Keith Christensen, David Anderson, Roslyn Brain, and Bo Yang for their time, effort, and feedback regarding my master's project. Their assistance was critical to the development and completion of this study.

Additionally, I would like to thank the Utah Transit Authority and Psomas Engineering for providing me with the opportunity to participate in the Sustainable Sites Initiative™ pilot program. In particular, I appreciate the patience, input, and guidance offered by Sharen Hauri, Gerry Tully, Travis Perry, Brook Oswald, and Janelle Ericson. Without the help of these individuals, this evaluation of the *Sustainable Sites Initiative Guidelines and Performance Benchmarks 2009* would not have been possible.

Lastly, I would like to thank Kate Spears for her unwavering support throughout the course of my MLA studies. Her insights, encouragement, and support have been invaluable during the past three years.

Jeffrey E. Dzikowski

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VI.

CHAPTER I

PROJECT NEED AND PURPOSE

The Sustainable Sites Initiative™ (SITES™) is a partnership of the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center, the United States Botanic Garden, and a diverse group of stakeholder organizations. Since its inception in 2006, SITES has been developing a series of criteria for sustainable landscape design, construction, operations and maintenance.

This process recently culminated with the publication of *The Sustainable Sites Initiative: Guidelines and Performance Benchmarks 2009*, which establishes a guideline and rating system for sustainable land development. This guideline and rating system is composed of a series of 15 prerequisites and 51 credits for measuring sustainability on a 250 point scale. The Sustainable Sites Initiative is currently using its *Guidelines and Performance Benchmarks 2009* to guide a select group of pilot projects through the SITES certification process, with the expectation that feedback from pilot program participants will inform a final refinement of the *SITES Guidelines and Performance Benchmarks* prior to the widespread implementation of the Sustainable Sites Initiative in 2013.

Despite its need to collect participant feedback, SITES currently has no formalized means of surveying its pilot program participants. Therefore the purpose of this study is to provide in-depth feedback to SITES regarding the effectiveness of its

Guidelines and Performance Benchmarks 2009 in the development and design of one of its pilot projects, the Orem Intermodal Center.

Through provision of this feedback, SITES will be able to gather information about how its *Guidelines and Performance Benchmarks 2009* have performed in the unique context of an small, publicly-funded, transit-oriented development. Since the Orem Intermodal Center is the only pilot project located in the Wasatch Front region of Utah, the study will also provide SITES with information about how the *Guidelines and Performance Benchmarks 2009* have performed in a unique, rapidly growing area of the United States.

Lastly, the study's overall approach and methodology will provide SITES with a model for collecting participant feedback. By providing this model, the study will hopefully help SITES establish a formalized system for gathering feedback from its current and future participants.

CHAPTER II

PROJECT BACKGROUND

Background and Development of The Sustainable Sites Initiative

SITES began in 2006 as an interdisciplinary partnership between the American Society of Landscape Architects (ASLA), the Lady Bird Johnson Wildflower Center at the University of Texas at Austin, the United States Botanic Garden, and a diverse group of stakeholder organizations. This partnership was based on the shared desire of these parties to develop standards for sustainable land development and management practices (The Sustainable Sites Initiative [SITES], 2010a).

The SITES partners recognized that although entities such as the United States Green Building Council (USGBC) had been successful in developing guidelines for green construction, there was a general lack of standards for sustainable development beyond the building envelope (SITES, 2009a). In an effort to fill this void SITES organized a series of technical subcommittees to assist them with the creation of the nation's first guidelines and rating system for sustainable landscapes. The subcommittees were composed of diverse groups of experts in the fields of landscape architecture, horticulture, conservation, sustainable design, civil and environmental engineering, ecology, hydrology, forestry, soils, planning, public health, outdoor recreation, and other disciplines (SITES, 2007).

Each subcommittee was asked to develop benchmarks for a specific area of landscape development and maintenance. These areas included soils, hydrology,

vegetation, human health and well-being, and materials selection (SITES, 2010a). In 2007 the initial findings of the technical subcommittees were published in the *SITES Standards and Guidelines: Preliminary Report* (SITES, 2007). This report established the basic scope of the Sustainable Sites Initiative and provided professionals and other stakeholders with an opportunity to comment on the continuing development of the SITES guidelines and rating system (SITES, 2007).

Based on feedback from the *Preliminary Report* and the ongoing efforts of the technical subcommittees, SITES released a draft copy of its formal guidelines and rating system in 2008. This document, known as *The Sustainable Sites Initiative: Guidelines and Performance Benchmarks Draft 2008* (SITES, 2008), provided an initial set of guidelines and criteria for the development, maintenance, and operation of sustainable landscapes.

Following a period of review and revision, the current version of the *SITES Guidelines and Performance Benchmarks* was released in 2009. These *Guidelines and Performance Benchmarks 2009* were built upon the idea that natural and built environments can achieve sustainability when they work in concert to “meet the needs of the present without compromising the ability of future generations to meet their own needs” (SITES, 2009b, p.5). More specifically, the *Guidelines and Performance Benchmarks 2009* promote the notion that ecosystem services, the goods and services provided by healthy ecosystems, are at the core of sustainable landscapes. By emphasizing ecosystem services throughout the *Guidelines and Performance Benchmarks 2009*, SITES believes that it can contribute to the development of

economically, socially and environmentally sustainable landscapes across a wide range of regions, scales, and contexts (SITES, 2009b).

In order to achieve this goal, the *Guidelines and Performance Benchmarks 2009* provides “clear and rigorous criteria for sustainable landscape design, construction, operations, and maintenance” (SITES, 2009b, p.5). This set of criteria, modeled after the USGBC’s Leadership in Energy and Environmental Design (LEED) Green Building Rating System, provides a voluntary rating system that is based on a series of 15 prerequisites and 51 credits for measuring sustainability. In this system all prerequisites are compulsory and non-scoring, while the elective credits are used to rank projects on a 250 point scale.

The prerequisites and credits are organized into nine sections that are aligned with the typical stages of the site development process. The organization of these sections, including their associated credits, prerequisites, and point values (SITES, 2009b, p.12-14), is depicted in Table 1.

Depending on the degree of compliance with the various credits, each project is eligible for certification at the following levels:

- One Star: 100 points
- Two Stars: 125 points
- Three Stars: 150 points
- Four Stars: 200 points

Section	Content	# of	# of Credits	Possible Points
---------	---------	------	--------------	-----------------

Section	Content	# of Prerequisites	# of Credits	Possible Points
1	Site Selection	4	3	21
2	Pre-Design Assessment and Planning	2	1	4
3	Water	1	7	44
4	Soil and Vegetation	3	10	51
5	Materials Selection	1	9	36
6	Human Health and Well-Being	0	9	32
7	Construction	2	4	21
8	Operations and Maintenance	2	6	23
9	Monitoring and	0	2	18

Table 1. SITES Prerequisites and Credits.

Note: For a complete listing of the SITES prerequisites and credits, including their associated point values, please refer the Appendix A of this study.

This rating system, which is based on all of the aforementioned prerequisites and credits, is currently being tested through the SITES pilot program. The pilot program was initiated in November of 2009, when SITES published a “call for pilot projects” (SITES, 2009c). The call for pilot projects attracted a great variety of applicants, which were eventually narrowed down to a group of approximately 150 official pilot projects (SITES, 2010b), including the Orem Intermodal Center.

The SITES pilot project finalists were chosen in a manner that guaranteed representation of a variety of project types, scales, and locations. By selecting the pilot projects in this manner, SITES ensured that its *Guidelines and Performance Benchmarks 2009* would be tested across a range of scenarios.

The pilot program is currently in progress, and will last through June of 2012. SITES hopes that upon completion of their respective projects, the pilot program participants will offer feedback regarding the performance of the *Guidelines and Performance Benchmarks 2009*. This participant feedback will help inform a final refinement of the *Guidelines and Performance Benchmarks* prior to the widespread release of the SITES certification and rating system in 2013 (SITES, 2012).

Following its broad release in 2013, SITES hopes to continue to expand the reach of its certification and rating system. In particular, SITES has tentative plans to join forces with the USGBC in order to incorporate its *Guidelines and Performance Benchmarks* into future versions of LEED (SITES, 2010a). By joining forces with LEED, SITES hopes to engage a larger group of participants in the pursuit of sustainable land development practices.

UTA and Psomas – Background and Reasons for Involvement

The Utah Transit Authority (UTA) provides public transportation services for the citizens of Utah's Wasatch Front Region. In order to accommodate the 1.8 million citizens that reside within its coverage area, UTA operates an extensive multimodal transit network (The Utah Transit Authority, 2012b). A critical component of this multimodal network is the UTA FrontRunner, a commuter rail line that serves seven stations between Ogden and Salt Lake City (UTA, 2012a).

Due to the success of its mass transit operations and continuing population growth along the Wasatch Front, UTA is currently working to expand its FrontRunner line (UTA, 2012c) southward from Salt Lake City into the Provo/Orem metropolitan area

(Figure 1.). As part of these plans UTA is developing an intermodal transit hub on an eight-acre parcel of land in Orem (Figure 2.). This grayfield parcel was chosen due to its proximity to preexisting rail lines, major automobile thoroughfares, and Utah Valley University (UTA, 2009).

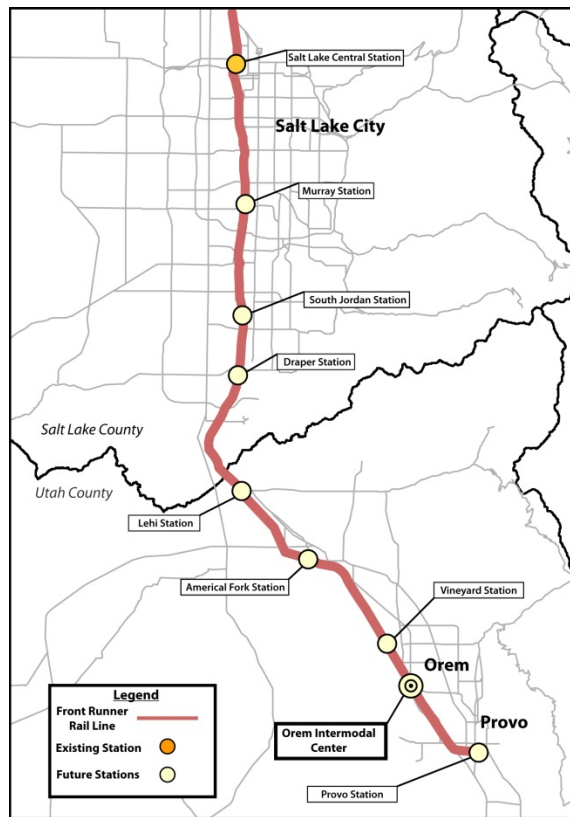


Figure 1. Map of Frontrunner South Line.

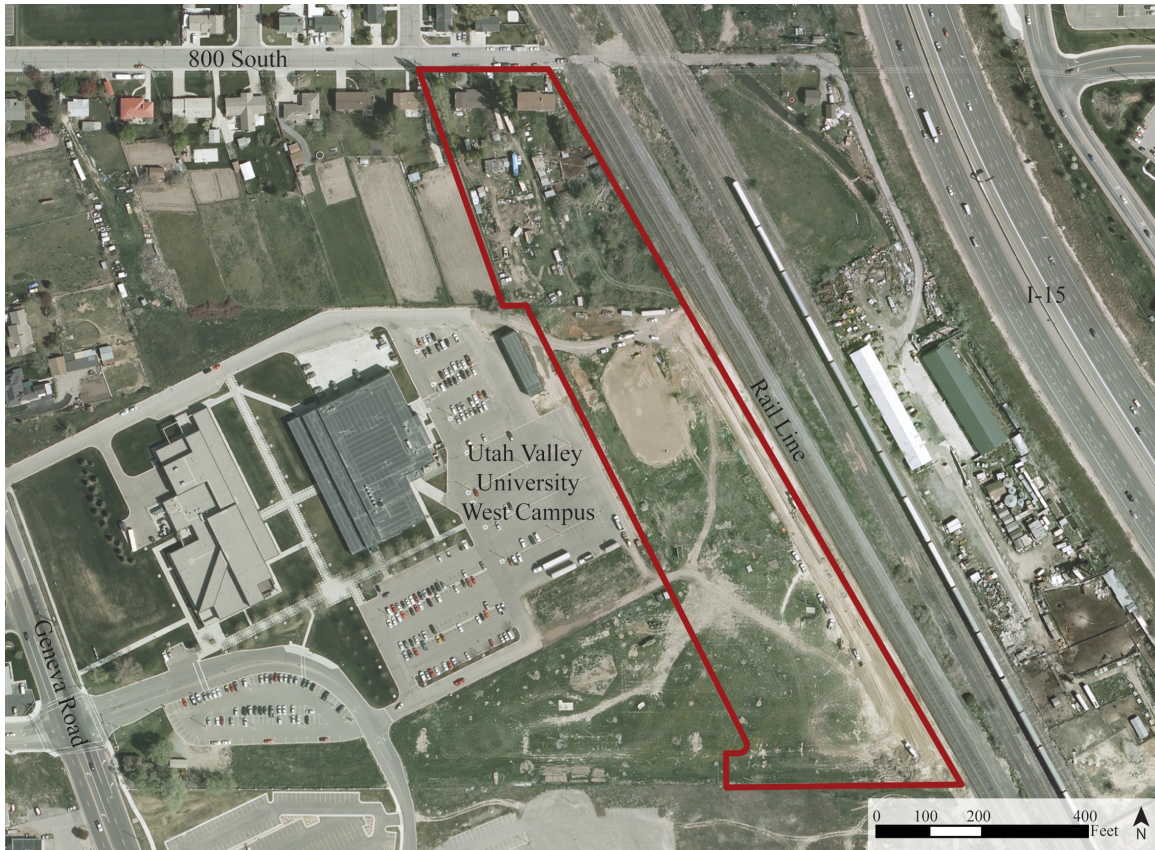


Figure 2. Map of Orem Intermodal Center site.

Upon completion, the Orem Intermodal Center will provide infrastructure that supports commuter rail, traditional bus service, and bus rapid transit (BRT). This infrastructure will include bus bays, shelters, landscaping, benches, bike racks, ticket vending machines, and parking stalls (Figure 3.).

Beyond providing support for UTA’s mass transit network, the Orem Intermodal Center will also serve as a key component of the City of Orem’s long-term development plans. In particular, the Orem Intermodal Center will provide an anchor for the high density, transit-oriented development that the City of Orem has planned for the areas surrounding Utah Valley University (City of Orem, 2012).

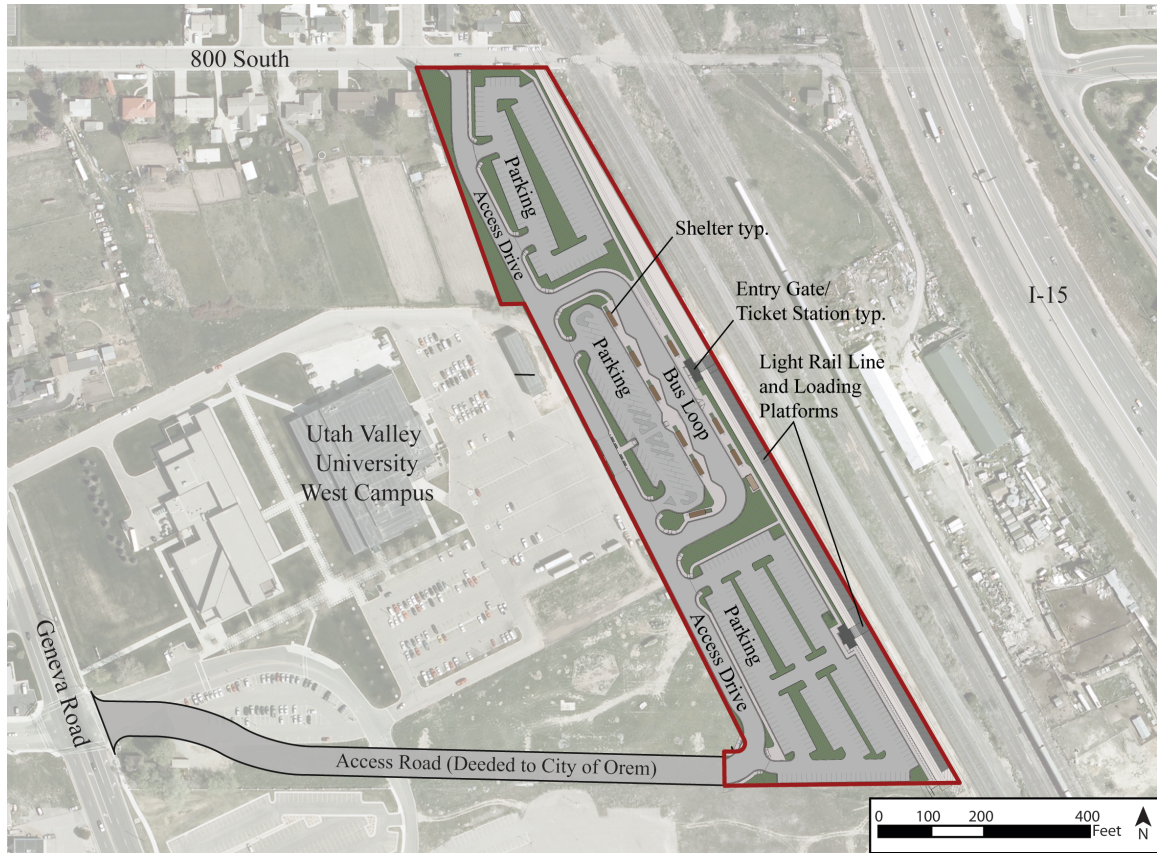


Figure 3. Schematic Plan of Orem Intermodal Center.

In order to implement its vision for the intermodal transit station in Orem, the BRT arm of UTA has also been working closely with local development specialists. Chief among these specialists is Psomas Engineering, a nationally recognized civil engineering firm which UTA chose to take the lead role in the design and development of the Orem Intermodal Center.

As part of its leading role, Psomas has worked with UTA to explore sustainable strategies for the development of the Orem Intermodal Center. During the course of these explorations, Psomas suggested that the SITES pilot program could offer a means

for UTA to incorporate sustainable practices into the design and development of the Orem Intermodal Center. After reviewing its details and requirements, UTA and Psomas agreed that participation in SITES pilot program would be a worthwhile endeavor.

UTA was interested in the SITES pilot program for numerous reasons. The first of these reasons was the overall compatibility of SITES with the scope of the Orem Intermodal Center. UTA recognized that unlike LEED, which is narrowly focused on architectural sustainability, SITES was designed to promote sustainability on a site-wide scale. In particular, UTA believed that SITES could provide guidance for sustainable development of infrastructure and landscaping, which are the primary components of the Orem Intermodal Center.

Beyond its compatibility with the overall scope of the Orem Intermodal Center, UTA and Psomas also agreed that SITES presented an opportunity to increase knowledge of sustainable practices within their respective offices. Although both parties anticipated that participation in the SITES certification program would require additional time and resources, they nevertheless recognized the potential for SITES to expose their organizations to innovative approaches to sustainable development.

UTA and Psomas also acknowledged that participation in SITES could raise awareness of sustainability outside of their offices. Since SITES is the first landscape-oriented sustainability certification program in the United States (SITES, 2009c), participation in the pilot program would likely draw significant attention to the Orem Intermodal Center project. Through such attention, UTA and Psomas believed that the

Orem Intermodal Center could become a model for future sustainable development along the Wasatch Front and elsewhere in the Intermountain West.

Lastly, UTA and Psomas identified SITES participation as a means to secure supplemental funding for the Orem Intermodal Center. Although the FrontRunner and BRT programs had a large source of funding available in the form of tax revenues from Utah County (UTA, 2012c), UTA was still in need of additional sources of funding for the Orem Intermodal Center. Since the United States government had recently introduced a series of federal grants for sustainable development, UTA used participation in SITES to become eligible for additional funding opportunities for the Orem Intermodal Center.

With all of the aforementioned benefits in mind, in 2009 Psomas Engineering applied to the SITES “call for pilot projects” on behalf of UTA’s Orem Intermodal Center project. Following a review of its application, SITES selected the Orem Intermodal Center as one of its 150 official pilot projects. This selection provided the Orem Intermodal Center with the unique distinction of being the only project selected along the Wasatch Front, and one of only three in the entire state of Utah.

Jeff Dzikowski (author) –Background and Reasons for Involvement

Following the admission of the Orem Intermodal Center project into the pilot program, Psomas Engineering and the UTA assembled an interdisciplinary team to work on development of the SITES certification application for the project. This team was

composed of numerous individuals from Psomas and UTA, including planners, civil engineers, and landscape architects.

In order to offset some of the costs and workload that the SITES application would add to the project, it was also decided that the team should include a student intern from Utah State University's Landscape Architecture and Environmental Planning (LAEP) Department. In January of 2010 Psomas contacted the LAEP Department to organize an internship and seek recommendations for candidates to fill the position. After discussing the details of the internship, all parties agreed that the position would be most suitable for a Master of Landscape Architecture (MLA) student, who would be able to use the internship as a basis for a project-oriented master's thesis (Plan B).

With this in mind, in February of 2010 Psomas offered an internship position to Jeff Dzikowski, the author of this study. The author was chosen due to recommendations from the LAEP faculty, and based on his strong interest in SITES.

The author began working with the Orem Intermodal Center's SITES team in March of 2010. Since that time the author has been responsible for a variety of duties related to the SITES application for the Orem Intermodal Center, including:

- Sole responsibility for the site analysis and inventory portion of the SITES application
- Shared responsibility for the scoping of SITES prerequisites, credits, and point totals
- Shared responsibility for reviewing paths to SITES compliance
- Shared responsibility for developing SITES-compliant contract specifications
- Shared responsibility for the organization and assembly of the SITES application
- Primary responsibility for providing feedback to SITES (the results section of the current study)

Status of the Orem Intermodal Center's

SITES Application

At the time of this writing, the Orem Intermodal Center's design has been completed (See Table 2.), and the project is in the early stages of construction. This construction is expected to conclude by the end of 2012, shortly before the FrontRunner South Line begins full time operations.

In the meantime, the members of SITES team at Psomas Engineering have been working to complete the Orem Intermodal Center's application for SITES certification. While the design and development sections of the application have already been assembled (See sections 1-6, Table 2.), the team is currently working to finish the construction, operations, and maintenance portions of the document (See sections 7-9, Table 2-1). Despite this remaining work, the team expects that they will successfully complete the SITES application prior to the closing of the pilot program in June of 2012. The team hopes that its SITES application will achieve a one-star certification level (100-125 points) for the Orem Intermodal Center by (See Table 2.)

Section	Content	# of Prerequisites	# of Credits	Possible Points	Estimated Points
1	Site Selection	4	3	21	16
2	Pre-Design Assessment and Planning	2	1	4	4
3	Water	1	7	44	15
4	Soil and Vegetation	3	10	51	16
5	Materials Selection	1	9	36	25
6	Human Health and Well-Being	0	9	32	5
7	Construction	2	4	21	10
8	Operations and Maintenance	2	6	23	14
9	Monitoring and Innovation	0	2	18	4
Totals	-	15	51	250	109

Table 2. Orem Intermodal Center Projected Point Totals

Note: For a complete listing of the SITES prerequisites and credits, including their associated point values, please refer the Appendix A of this study.

CHAPTER III

RESEARCH METHODS

Institutional Approval

This study was conducted in accordance with the rigorous standards and guidelines for research set forth by Utah State University's Institutional Review Board (IRB). As such, the study's methods were subject to IRB approval prior to commencement of the study (see Appendix B). This approval process assured that the study was conducted in a manner that was compliant with state, federal, and university requirements for human participants research.

Evaluation Method

The purpose of this study is to provide feedback to SITES regarding the effectiveness of its *Guidelines and Performance Benchmarks 2009* as applied to the analysis, development and design of one of its pilot projects, the Orem Intermodal Center. In order to assure that this feedback provided detailed evaluation of the wide range of material included in the *Guidelines and Performance Benchmarks 2009*, the study made use of a qualitative process study (Patton, 2000).

Interview

The primary source of data collection for this qualitative process study was a semistructured formal interview (Hatch, 2002) of a group of key informants (Gall, Gall,

& Borg, 2007). The key informants represented a small purposeful sample (Patton, 1990) of individuals who were involved in the development of the SITES pilot application for the Orem Intermodal Center. The seven key informants were:

- Travis Perry - Project Manager, Psomas Engineering
- Gerry Tully - SITES Application Manager, Psomas Engineering
- Brook Oswald - SITES Chief Associate, Psomas Engineering
- Janelle Erickson - Project Manager, Utah Transit Authority
- Jon Gilchrist - Project Engineer , Parsons Brinkerhoff Engineering, UTA consultant
- Von Larsen – Quality Assessment and Construction Manager, Utah Transit Authority
- Jeff Dzikowski (interviewer) – SITES Intern, Psomas Engineering

In order to take advantage of group dynamics and maximize the efficiency of data collection, the key informants were asked to participate in a focus group interview (Patton, 1987). Arrangements were made to conduct the interview in the conference room of Psomas Engineering's Salt Lake City office, which offered a quiet and private space that was familiar to all the participants.

All of the key informants agreed to participate in the focus group interview. However, on the day of the interview one of the key informants was unable to attend due to illness. Arrangements were made to obtain the absentee's responses to the interview questions via email (See Appendix C).

Author's Contribution to Data

Due to his full participation in the analysis, design, and development of the Orem Intermodal Center's application to the SITES pilot program, it was decided that the author should also be included as a key informant in the study (Patton, 1990). Since the

author's moderator duties precluded his ability to provide responses during the focus group interview, it was decided that his replies to the interview questions would be collected in a separate typewritten document to be assimilated into the study's overall data (See Appendix D).

Questions

The study asked the key informants to answer a series of questions related to the effectiveness of the *SITES Performance Benchmarks and Guidelines 2009* as applied to the design and development of the Orem Intermodal Center.

The author initially intended to base the question list on existing participant feedback surveys from LEED and SITES, however after contacting both organizations it became apparent that no such information was available. Due to the lack of any precedents, the author developed his questions independently. These questions were designed to ensure that the interview provided a thorough evaluation of the *SITES Guidelines and Performance Benchmarks 2009*. Additionally, all questions were crafted to assure that they were neutral, clear, and open-ended (Patton, 1990).

Following review by both the author's thesis committee and SITES, the following final question list was developed:

Background

-What was your initial impression of SITES in comparison to other sustainability-related programs (LEED, ISI, etc.)?

-What was your initial understanding of the demands that SITES would place on the Orem Intermodal project (time, resources, costs vs benefits, etc.)?

Performance

-How well do you feel that SITES achieved its stated goal of establishing “clear and rigorous criteria for sustainable landscape design, construction and maintenance”?

-How well did SITES fit into your standard project development workflow (ie: what if any adjustments did it require)?

-How did SITES compare to your initial expectations in terms of increasing the sustainability of the Orem Intermodal Center?

-What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think were especially effective in contributing to the sustainability of the Orem Intermodal Center?

-What areas of the SITES Guidelines and Performance Benchmarks 2009 presented difficulty?

-Despite this difficulty, do you believe that these areas made worthwhile contributions to the sustainability of the Orem Intermodal Center?

-How would you evaluate the SITES Guidelines and Performance Benchmarks in terms of costs/benefits for the Orem Intermodal project?

Suggestions

-What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think should be revised to improve effectiveness/decrease difficulty?

-Are there any areas that SITES does not currently address, but should consider adding?

Future

-Do you think that SITES provides an effective complement or alternative to other sustainability-related programs?

-Under what circumstances would you be inclined to seek SITES certification for future projects?

-If SITES develops a program of certification for professionals as well as projects, will you seek such certification?

These questions were presented to the key informants via email one day prior to the focus group session in order to allow the participants to prepare for the interview.

During the focus group interview the question list was presented to the participants in a semistructured format, led by the author of this study.

Data Collection

All key informants consented to documentation of their responses, and to the publication of their names in association with the results of the interview (See Appendix E).

The entire focus group interview was tape recorded in order to provide an audio account of all questions and responses. The author also made bracketed notations (Hatch, 2002) throughout the interview in order to record additional comments and observations.

All audio data and notations were transcribed and collated into a single typewritten account of the interview (See Appendix F). This document was reviewed by the author to determine if any follow-up questions were necessary. After the review revealed that follow-up questions were not needed, and the author proceeded to the analysis and interpretation phase of the study.

Data Analysis

Once all responses from the focus group interview and separate interviews of Brook Oswald and Jeff Dzikowski were gathered and recorded, the data was evaluated through a process of inductive analysis (Hatch, 2002). During this inductive analysis the author performed iterative review of the data in order to identify indigenous concepts (Patton, 1990) and sensitizing concepts (Patton, 1990). Once these concepts were identified, they were categorized (Patton, 1987) in order to identify themes within the data.

Some of the major themes that were uncovered during the study's data analysis included:

- the participants' initial expectations and reasons for SITES involvement
- the influence and impacts of SITES participation on the design and development of the Orem Intermodal Center
- criticisms and recommendations regarding the *SITES* program, including both general and specific evaluations of the *SITES Guidelines and Performance Benchmarks 2009*
- recommendations for the future development of SITES

Interpretation

The most frequent and salient themes that emerged from the data were packaged into a focused (Patton, 1990) summary of findings. This summary is in the form of a report that will be forwarded to SITES in order to provide feedback on the performance of the *Guidelines and Performance Benchmarks 2009* in the design and development of the Orem Intermodal Center.

It is expected that this feedback will help SITES to refine its *Guidelines and Performance Benchmarks 2009* prior to the widespread release of the Sustainable Sites Initiative in 2013.

CHAPTER V

RESULTS

The following document, *The Orem Intermodal Center Participant Feedback Report*, represents the findings of this study.

**The Orem Intermodal Center
Participant Feedback Report
For
The Sustainable Sites Initiative
Pilot Program**

by
Jeff Dzikowski

With the cooperation of
The Utah Transit Authority
and
Psomas Engineering

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EXECUTIVE SUMMARY

The following report provides feedback from the Utah Transit Authority (UTA) and Psomas Engineering regarding their experiences with the Sustainable Sites Initiative™ (SITES™) Pilot Program. In particular, the report evaluates the implications, impacts, and effectiveness of *SITES Guidelines and Performance Benchmarks 2009* during the design and development of the Orem Intermodal Center. Additional evaluations are also made regarding the future development of the SITES program.

The report's findings are based on interpretation of the qualitative data that was gathered during a focus group interview of the key members of the Orem Intermodal Center's design team. During this interview the Orem Intermodal Center's design team members were asked to respond to a series of questions about the SITES pilot program. These responses were collected, analyzed, categorized, and interpreted in order to provide the feedback contained within this report.

The overall feedback suggests that the Orem Intermodal Center's design team was generally pleased with the performance of the SITES pilot program. In particular, the team thought that the SITES program met its initial expectations for improved sustainable practices, relevance to the project's overall purpose, increased funding opportunities, and cost-effectiveness. Additionally, the design team felt that the SITES pilot program improved interdisciplinary collaboration and offered validation of the team's standard approach to development.

Despite its overall satisfaction, the design team did offer some criticisms and recommendations for the SITES pilot program. In general, the team thought that the

SITES *Guidelines and Benchmarks 2009* were deficient in credits for site selection, overly weighted towards urban infill, potentially incompatible with local codes, and lacking in contract specifications. The team also noted problems related to specific guidelines and requirements for wetlands, soils, stormwater, and equitable site use.

Aside from these criticisms and recommendations, the design team provided thoughts about the future development of SITES. Most members of the design team expressed willingness to participate in future SITES projects. However, this willingness was conditional, since most of the team members thought that the future viability of SITES will depend on its ability to better demonstrate long-term cost effectiveness. Lastly, the team expressed reservations about the potential incorporation of SITES into LEED, and they also provided equivocal support for the possibility of a SITES professional credential program.

Regardless of the future course of the Sustainable Sites Initiative, the Orem Intermodal Center's design team expressed deep gratitude for the opportunity to participate in the SITES pilot program. The team hopes that the feedback, recommendations, and criticisms contained in the report reflect the team's strong desire to aid the future development of SITES. In particular, the team hopes that this document will help the Sustainable Sites Initiative refine its *Guidelines and Performance Benchmarks 2009* prior to the widespread release of the SITES program in 2013.

INTRODUCTION

Background

In 2009 the Utah Transit Authority (UTA) and Psomas Engineering began working on plans to develop a new intermodal transit center in Orem, Utah. This project, known as the Orem Intermodal Center, will provide access, parking, and infrastructure for UTA's bus, commuter rail, and bus rapid transit (BRT) services. By doing so, this project will play an important role in UTA's overall plans to improve mass transit service for the 1.8 million citizens that reside within its coverage zone. Additionally, the Orem Intermodal Center will anchor a transit-oriented development that the City of Orem has planned for the area surrounding the west campus of Utah Valley University.

As part of their ongoing efforts to promote sustainable practices, UTA and Psomas decided to explore SITES certification for the Orem Intermodal Center. In November of 2009 this exploration led UTA and Psomas to enter the Orem Intermodal Center into the Sustainable Sites Initiative's "call for pilot projects".

At the beginning of 2010 the Orem Intermodal Center was granted admission to the SITES pilot program, and Psomas began the process of assembling an interdisciplinary design team. During this process, UTA and Psomas decided to employ an intern from Utah State University's Master of Landscape Architecture (MLA) program. This intern, Jeff Dzikowski, was assigned a variety of responsibilities related to the development of the Orem Intermodal Center's SITES application. Jeff also decided to

use his experience with the Orem Intermodal Center's SITES application as the basis of his project-based MLA thesis.

As part of his internship responsibilities and thesis work, Jeff was asked to collect and assemble feedback regarding the Orem Intermodal Center's participation in the SITES pilot program. This feedback, which is the subject of this report, was gathered in an effort to provide SITES with information about the effectiveness of their guideline and rating system.

Since construction of the Orem Intermodal Center has yet to be completed, this report is limited in its ability to make comments regarding many of the construction-related elements of the SITES program. However, the report does offer an extensive evaluation of the implications, impacts, and effectiveness of SITES *Guidelines and Performance Benchmarks 2009* during the design and development of the Orem Intermodal Center. Additional evaluations are also made regarding the future development of the SITES program.

UTA and Psomas hope their feedback will help inform the future development of SITES. In particular, they hope to provide information that will assist the refinement of future iterations of the *Guidelines and Performance Benchmarks* prior to the widespread release of SITES in 2013.

Methods

In order to collect in-depth information regarding the effectiveness of the SITES *Guidelines and Performance Benchmarks 2009*, the key members of the Orem Intermodal

Center's design team were asked to participate in a focus group interview. This tape-recorded interview was conducted at Psomas Engineering's Salt Lake City office on February 23rd, 2012. The participants included:

- Travis Perry - Project Manager, Psomas Engineering
- Gerry Tully - SITES Application Manager, Psomas Engineering
- Janelle Ericson - Project Manager, Utah Transit Authority
- Jon Gilchrist - Project Engineer, Parsons Brinkerhoff Engineering, UTA consultant
- Von Larsen – Quality Assessment and Construction Manager, Utah Transit Authority
- Jeff Dzikowski (interviewer) – SITES Intern, Psomas Engineering

Due to logistical conflicts with the focus group interview, two team members provided responses via written surveys. These team members were:

- Brook Oswald - SITES Chief Associate, Psomas Engineering
- Jeff Dzikowski – SITES Intern, Psomas Engineering

Regardless of format, the team members were asked to respond to a series of questions related to the Orem Intermodal Center's participation in the SITES pilot program. The question list addressed the following topics:

- The team's initial expectations and reasons for SITES involvement
- The actual influence and impacts of SITES involvement
- Criticisms and recommendations for SITES
- The future of SITES

Once all responses from the interview and written surveys were gathered and recorded, they were collated into one body of data. This data was then analyzed in order to identify major themes within team's responses to the interview questions. The most frequent and salient themes that emerged from the data were organized into a summary of findings. This summary of findings, included in the following pages of this report,

provides the author's interpretation of the themes as well as supporting quotes from the interview transcripts and written surveys.

A more extensive account of the findings, including a complete copy of the survey responses and interview transcripts, is available through the author's thesis, *A Critical Evaluation of the Sustainable Sites Initiative's Guidelines and Performance Benchmarks 2009 as Applied to the Orem Intermodal Center's Design and Development*.

FINDINGS

Initial Expectations and Reasons for Involvement

The Orem Intermodal Center's design team initially expected that participation in the Sustainable Sites Initiative's pilot program would generate significant economic, environmental and social benefits for the Orem Intermodal Center (OIC) project. In particular, they expected that SITES would:

- generate additional funding opportunities
- reduce long-term costs
- draw increased attention and provide opportunities for public relations
- fit well with the project's overall program
- help set new standards for sustainability for UTA, Psomas, and their clientele

Although the aforementioned benefits provided the motivation to pursue SITES certification for the Orem Intermodal Center, the team revealed that they had reservations regarding the costs of participation. Since the Orem Intermodal Center is a publicly funded project, the development team was under significant pressure to be fiscally responsible with taxpayer money. Therefore there were concerns that SITES might:

- increase billable hours
- raise materials and construction costs
- create point-buying situations (i.e. situations wherein the practices and/or technologies required to meet SITES credits lead to significantly increased project expenditures)

Influence and Impacts

Participation in the SITES pilot program was interpreted to be an overall benefit to the design and development of the Orem Intermodal Center. In most instances, the

design team was pleased with how SITES matched or surpassed the team's initial expectations. Some key areas of satisfaction are discussed below.

Goodness of Fit

The Orem Intermodal Center's design team felt that the SITES certification program offered a much-needed alternative to architecturally-focused sustainability programs such as LEED. In particular, the design team embraced SITES for its ability to address the landscape and infrastructure elements that dominate the Orem Intermodal Center's overall program.

In the words of one of the project's key participants, SITES offered "a better way to get recognition of the effort being done on the site development level". As another participant put it, SITES "was a lot more applicable to us", "because it's what we do a lot of. We don't do buildings." "But this (SITES) really fits what we do a lot (landscape, infrastructure, etc.)".

Funding Opportunities

Since UTA is a publicly-supported entity, it operates with very limited funds. In order to move many of its projects forward, UTA often has to seek supplemental funding in the form of federal grants. While competition for such grants is often quite fierce, UTA and Psomas recognized that pursuit of SITES certification could "help get funding". Or as one participant candidly put it, the decision to pursue SITES was partly due to "Money, grant money".

Through its participation in the SITES pilot program, the Orem Intermodal Center became eligible for numerous federal grants. In particular, SITES participation helped the Orem Intermodal Center meet the requirements for ‘livability grants’ offered by the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA).

Unfortunately, due to complications unrelated to its participation in SITES, the Orem Intermodal Center was unsuccessful in obtaining the aforementioned grants. Despite this failure, UTA and Psomas remain hopeful that future participation in SITES will lead to federal grants. This is evidenced by the fact that the Orem Intermodal Center’s sister site, the Provo Intermodal Center, is currently being developed according to SITES standards. Although the Provo Intermodal Center is not a participant in the pilot program, UTA has plans to seek SITES certification once the Sustainable Sites Initiative is officially released. UTA is optimistic that the Provo Intermodal Center’s participation in SITES will ultimately lead to an award of federal grant money.

Costs

Participation in the SITES pilot program did not present a cost barrier to the design and development of the Orem Intermodal Center. In fact, although the design team has yet to determine the actual amount of cost that was incurred through participation in the SITES pilot program, it was estimated that “the amount that (was) added is a percent or two”. The relatively small percentage is due to numerous factors, including:

- the low fees that SITES charged for participation in its pilot program

- the compatibility of many SITES standards with the current best management practices of UTA and Psomas
- the low level of certification (one star) that the Orem Intermodal Center aimed to achieve

Despite the fact that SITES did not introduce a significant cost burden during the design and development of the Orem Intermodal Center, the key participants did note some areas of concern regarding the potential costs of SITES compliance. Some of these areas of concern were:

- the potential costs of pursuing higher levels of certification (two, three, or four stars vs. one star)
- the yet-to-be-determined costs of construction and maintenance
- the viability of sustainable design in a ‘low-bid environment’
- the yet-to-be-determined returns on investment that sustainable practices such as low-VOC materials, bioswales, and soil restoration will yield for the Orem Intermodal Center

Collaboration

As part of its focus on interdisciplinary collaboration, the *SITES Performance Benchmarks and Guidelines 2009* required the Orem Intermodal Center’s design team to work with a diverse group of professionals and stakeholders. The team members agreed that this collaborative effort was an asset to their project, since it required all participants and stakeholders to get involved at the very beginning of the Orem Intermodal Center’s design and development.

This collaboration was especially helpful in getting UTA’s operations and maintenance (OM) personnel engaged with the project. These personnel typically have not been included in the design and development process, despite the fact that they are solely responsible for the long-term operation and maintenance of the facilities.

By “getting that maintenance perspective at the front-end design”, the design team was able to “make sure they (OM personnel) were okay with a lot of the things we were doing”. Through this process of collaborative review, the design team was able to create a plan for sustainable operations and maintenance that accounted for the needs and limitations of all parties. In fact, UTA was so pleased with the Orem Intermodal Center’s operations and maintenance plan that it hopes to use it as a model for future projects.

Validation of Current Practices

UTA and Psomas have established reputations for promoting sustainable practices. However, both groups recognized that the SITES pilot program would provide a means to “document the good things we’re doing”. In short, the Orem Intermodal Center’s design and development team believed that participation in the SITES certification program will ultimately provide “validation that what UTA is doing is consistent with sustainability”.

Advancement of Sustainable Practices

Despite the fact that UTA and Psomas typically endeavor to incorporate sustainable practices into all of their projects, they both agreed that the SITES *Performance Benchmarks and Guidelines 2009* helped to prioritize sustainability during the design and development of the Orem Intermodal Center. As one participant mentioned, “I think more or less everyone was on the right track, but this might have made it more of a conscious effort”.

Some areas in which the *SITES Guidelines and Performance Benchmarks 2009* pushed the Orem Intermodal Center's design team to implement sustainable practices were:

- *operations and maintenance*: as previously mentioned, the Orem Intermodal Center's interdisciplinary design team developed a long term plan for sustainable landscape operations and maintenance
- *stormwater management*: the Orem Intermodal Site will make use of bioswales to treat runoff from its parking lots and other hardscapes
- *irrigation*: the Orem Intermodal Center's irrigation system will include a centrally-controlled, low-water drip system that greatly reduces water usage
- *materials selection*: a large percentage of the Orem Intermodal Center's materials will be made up of recycled-content materials that are produced locally by manufacturers who make use of sustainable manufacturing practices
- *soils*: in an effort to meet the SITES requirements for maintenance and restoration of soils, the Orem Intermodal Center developed a soils management plan
- *plant selection*: the landscaping at the Orem Intermodal Center will be composed of native plant materials
- *impervious surfaces*: UTA and Psomas worked with the City of Orem to reduce the dimensions of parking stalls, leading to a reduction in the overall footprint of the Orem Intermodal Center's impervious surfaces

In addition to encouraging the design team to implement the aforementioned sustainable design elements, the Orem Intermodal Center's participation in the SITES pilot program also influenced the practices of other parties. In particular, the Orem Intermodal Center's SITES-compliant specifications directly affected the practices of material suppliers and the City of Orem.

In the case of material suppliers, the Orem Intermodal Center's specifications required materials producers to provide proof of sustainable practices. Although many paving and aggregate suppliers were already familiar with sustainability requirements due to past experience with ISO 14000 specifications, most local plant manufacturers had never been asked to provide proof of sustainable plant production. Despite their lack of

familiarity with such requests, many plant manufacturers expressed interest and support for the SITES standards for plant production. Additionally, and most importantly, one plant provider even expressed willingness to become SITES-compliant in time to meet the Orem Intermodal Center's construction deadline.

Beyond familiarizing local plant providers with new standards for sustainability, the Orem Intermodal Center also caused the City of Orem to rethink some of its standard operating procedures. In particular, the Orem Intermodal Center's design team asked the City of Orem to reconsider its minimum requirements for parking stall size. This request was made in an effort to reduce impervious areas and meet the SITES requirements for stormwater reduction. After speaking with UTA and Psomas on multiple occasions regarding this matter, the City of Orem eventually decided to allow a reduction of parking stall length from 18 feet to 16 feet. Since the Orem Intermodal Center will contain approximately 500 parking stalls, this decision will eliminate roughly nine thousand square feet of unneeded impervious surface.

This decision marked a significant achievement for the project's design team, since it improved the sustainability of the Orem Intermodal Center and also demonstrated the ability of the *SITES Guidelines and Performance Benchmarks 2009* to positively influence municipal standards within the City of Orem.

Criticisms and Recommendations

Despite its satisfaction with the pilot program, the Orem Intermodal Center's design team noted many areas in which the SITES should consider improvements prior its widespread release in 2013. These evaluations, which included criticisms as well as recommendations, are discussed below.

Structure and Areas of Emphasis

Site Selection. Since UTA and Psomas spend a great deal of their time working on site-oriented projects, both groups agreed with the emphasis that SITES placed on site selection. However, they did take issue with the failure of the *Guidelines and Performance Benchmarks 2009* to award points for certain site selection scenarios. In particular, they thought that the *Guidelines and Performance Benchmarks 2009* should have awarded credits for the avoidance of sites with environmentally sensitive areas. As one participant described this situation, "our site doesn't have the stuff (environmentally sensitive areas), so we should be rewarded for that". Another team member echoed this sentiment, saying "if we did the right thing and chose the site that didn't have wetlands, don't we get credit for avoiding wetlands inherently?"

These comments demonstrate that although the SITES prerequisites require participants to avoid development of environmentally sensitive areas within their respective sites, they do not necessarily reward participants who have chosen sites that are completely devoid of such areas. The design team hopes that future iterations of the *Guidelines and Performance Benchmarks* will achieve an improved balance of both restrictions *and* incentives for site selection.

Incompatibility with Local Codes. As part of its stated mission, SITES is “dedicated to fostering a transformation in land development and management practices”. Although this goal is commendable, SITES should realize that some municipalities are disinclined to rapidly embrace transformation.

Unfortunately this became apparent when the Orem Intermodal Center’s design team encountered difficulties with municipal code. In particular, the design team was initially unable to reduce the size of its parking stalls due to Orem’s minimum standards for parking. This conflict, which resulted from efforts to meet the SITES specifications for stormwater management, was eventually resolved when the City of Orem granted a parking variance for the Orem Intermodal Center.

Despite its satisfactory conclusion, this conflict demonstrated how the *SITES Guidelines and Performance Benchmarks 2009* can be incompatible with local codes. As one of the project’s designers stated, dealing with cities “could have been a huge challenge”, since “a lot of things we were doing were not to their standard”. This situation was summarized even more succinctly by another team member, who stated “local code does not always agree with methods of implementation”.

The potential for conflict with regulatory agencies does not indicate that SITES should cease to promote forward-thinking practices, however, it does indicate that SITES should remain mindful that some projects will encounter difficulty in achieving simultaneous compliance with SITES guidelines *and* local codes.

Contract Specifications. In light its technical specificity and focus on post-construction evaluation (soils testing, proof of materials, etc.), it was surprising that SITES did not offer some form of contract specifications. In the absence of any official construction specifications, the Orem Intermodal Center’s design team had to resort to unproven measures for familiarizing their contractors with many of the SITES requirements. One team member summarized this situation by stating, “we had the standard specs to use, but now we had to highlight certain areas and the easiest way to do it was to add an addendum that you hope they (the contractors) read when they were vetting”

The team expressed a desire for SITES to include more contract support in the future, noting “SITES should provide a set of construction specifications. By doing so, SITES would help ensure that its “requirements are provided to contractors in a legible and binding document”.

Emphasis on Urban Infill. During the course of scoping the Orem Intermodal Center’s SITES application, it became apparent that many of the credits favored projects that were located in urban infill areas. As one team member stated, the *SITES Guidelines and Performance Benchmarks 2009* were “definitely weighted towards urban infill”.

Although the team member understood this bias, noting that urban infill projects are “inherently more sustainable than a project out in the middle of nowhere”, it was clear that some team members would like to see SITES make concessions for projects that are located in greenfield areas. As one participant stated “I think they’re (SITES) going to

have a hard time with more rural areas”, because “you lose so many points the further out you get”.

Individual Prerequisites and Credits

Wetlands Prerequisite. The Orem Intermodal Center’s design team agreed with the overall intent of the SITES wetlands prerequisite, however, they thought that SITES should reconsider its lack of concessions for wetland mitigation. The design team expressed that a zero-tolerance approach to wetlands alteration was not an entirely sustainable strategy, since it overlooks the potential value of wetland mitigation.

One team member summarized how the current wetlands prerequisite overlooks this possibility, stating “to place a value on avoidance when maybe you can get a better bang for your buck by not avoiding it and improving the overall situation, is kind of a short-sighted way to look at it”.

The design team thought that SITES should consider allowing mitigation in certain situations. In particular, the team thought that SITES should consider allowing mitigation where isolated, low-functioning wetlands might be replaced with larger, high-functioning wetland areas. A team member expressed this idea through description of a hypothetical scenario where:

“you could have a 500 acre site with an acre of wetlands on it, and if you mitigate that from a low functioning wetland to a very high functioning wetland that’s ten times as big, you’re setting aside 10 acres. That’s been proven over decades to be very effective mitigation”.

Soils Requirements. Since no other sustainability-oriented certification systems currently address the importance of soils, the focus of SITES on soils represents an

innovative approach to sustainability. As a member of the Orem Intermodal Center's design team put it, "I commend SITES for endeavoring to improve the treatment of topsoil, since it is a grossly under-represented aspect of the site development process".

Despite this commendation, the team expressed difficulty interpreting the SITES soils criteria. One team member stated "it appears that it was written by a bunch of academics that never stepped outside of a lecture hall except to go to the soil lab". Another team member echoed this sentiment, calling the soils criteria "difficult to deal with", "due to a lack of familiarity with esoteric topsoil criteria such as potentially mineralizable nitrogen".

While the team's difficulty may simply represent the growing pains that accompany an unfamiliar certification system, the team agreed that SITES should consider simplification of its soils criteria. As one team member suggested, "a soils worksheet would improve the situation, by providing a document that could be used by all personnel involved in a SITES project, from office personnel to construction contractors". By doing so, hopefully "the soils requirements could be revised to be more easily understood".

Stormwater Guidelines. Despite the fact that the Orem Intermodal Center's design team included numerous professionals with backgrounds in stormwater management, the team failed to fully understand the logic behind the SITES system for evaluating stormwater runoff. More specifically, the team disagreed with the curve number system that was used to evaluate the Orem Intermodal Center's stormwater runoff.

As one team member described it, “the process that’s outlined in their handbook is poor, really poor”. The team felt that the reliance of SITES on the curve number method, which calculates stormwater discharge according to land typologies, was unnecessarily exclusive of other means of stormwater management. In the case of the Orem Intermodal Center, the team felt that maintaining or reducing the overall stormwater discharge rates should have been sufficient.

The team’s disagreement with the SITES curve number system was exemplified in feedback from one of the team’s civil engineers, who stated “the effective runoff is the same”, but “since we increased the curve number, we don’t get that point (SITES credit) even though the net result is the same”.

Equitable Site Use. The Orem Intermodal Center’s design team appreciated the progress that the *SITES Guidelines and Performance Benchmarks 2009* made towards addressing environmental, economic, *and* social sustainability. However, the team believed that some of the credits did not provide an accurate measure of the importance of mass transportation. In particular, the team felt that the Orem Intermodal Center ultimately might not get any points for promoting equitable site use, despite the fact that the project will provide a large area of Orem with improved access to multimodal mass transit.

One team member described this dilemma by stating “I think some of the points that went towards future social programming were superfluous”. The team member explained further, saying “the social programming we’re doing, we’re providing a transit station. That doesn’t rise above hosting a farmer’s market once a year?”

The Future of SITES

Future SITES Participation

As mentioned at the beginning of this report, the Orem Intermodal Center's SITES team was pleased with the overall performance of the SITES pilot program and expressed willingness to seek SITES certification for future projects. However, this willingness did not extend to all projects or all levels of SITES certification. In fact, most team members expressed that future participation in SITES would depend on outside factors. One team member stated that future participation would be entirely contingent on, "the client's backing and support". Another team member responded to the question about future SITES participation by saying "not in a low bid environment. If we were doing a different kind of bidding process, then maybe".

Other team members mentioned that SITES certification would only be a viable option at the one-star level, since "to get to that second star, it's not going to be an incremental cost, it's going to be an exponential cost". Similar cost/benefit limitations were also noted by another team member, who said (hypothetically) "we would've had to add another two percent to the cost of the project to get that second star, and what does that star get us except another star on the mantle?"

Despite such concerns, one team member stated that decisions about future SITES participation would ultimately depend on the answers to questions such as "is it a long-term cost benefit?" and "is there a better funding alternative?". While the answers to such questions will undoubtedly vary on a case-by-case basis, hopefully SITES can gain

acceptance despite the weakness of the current economic climate. One team member expressed this best by saying

“I think that it is unfortunate that SITES seems to be hitting the market during an economic downturn. Unlike LEED, which gained tremendous momentum during the real estate boom, SITES will face an extremely cost-sensitive market. If SITES can gain some degree of foothold during the next few years, it will hopefully be well-positioned to gain wider acceptance as the market improves”.

Professional credentials

Although there is currently no professional credential system associated with the Sustainable Sites Initiative, many members of the Orem Intermodal Center’s design team were supportive of the idea that SITES may offer some form of credentials in the future. However, this support came with some conditions. One team member expressed such conditional interest by stating

“I certainly would be interested in getting certified if the costs were not overly burdensome, and there was an assurance that my certification would be lasting. This is not to say that I would be opposed to requirements such as CEU’s (continuing education units), but rather that I would not be interested in having to re-test or re-certify on a regular basis”

Most of the reservations that the team expressed regarding professional credentials seemed to be tied to dissatisfaction with LEED’s recent changes to its associate professional (AP) credential. These changes required many professionals to seek recertification, despite past assurances from LEED that the AP credential would offer long-term value. As one team member put it “now LEED-AP doesn’t mean anything”

The team's dissatisfaction LEED's professional credential system, and its implications for SITES, were summarized by the following comment:

“LEED’s apparent bait-and-switch has left me leery of seeking certifications that are subject to rapid change. Justifiably or not, LEED’s recent revision of its professional credential system has created the appearance that it is capricious and profit-seeking. SITES would be well-advised to take cues from this perception of LEED, and try to avoid making any of the same mistakes”

Potential Integration with LEED

As mentioned previously, many of the SITES team members have encountered difficulties with LEED. Despite such difficulties, the team did agree that SITES could benefit from an affiliation with LEED. In particular, the team believed that SITES could gain greater recognition and visibility through an association with LEED. As one team member put it

“LEED is well known. For good or bad, it is well known. Whereas when we say ‘Oh this was a Sustainable Sites Initiative project’, I get the same look my dog gives me when I talk to him. You know, the head turns sideways...”

In addition to increasing the recognition of SITES, an association with LEED could also reduce the competition that SITES might face in an increasingly crowded market. One team member expressed concern about market saturation by asking “is there room in the marketplace for both LEED and SITES?” Or as another team member bluntly stated “I personally think that the industry does not need another rating system”.

Although it may be unclear if it can compete in a crowded market, it is clear that if SITES decides to join forces with LEED it should be fully aware of the negative connotations that are associated with the LEED program. Chief among these

connotations is the perception that LEED has become cost prohibitive. One team member described this perception by stating “I think LEED has lost its way, because all LEED wants to do is charge you for everything”.

Regardless of whether or not SITES ultimately decides to join up with LEED, the team members expressed hope that SITES will continue to offer a practical and cost effective certification system. This hope was summarized in the comments of a team member, who said:

“I think the real goal is to come up with a system, whether it is SITES or LEED or a combination, that encourages the right thing, monitors that you did it, and isn’t there to become an industry unto itself”

Cost/Benefit Metrics

Throughout its evaluation of the pilot program, the Orem Intermodal Center’s design team emphasized that the success of SITES would ultimately depend on its ability to offer cost-effective alternatives to standard development practices. While one of the primary aims of SITES is to improve the economic sustainability of land development practices, it remains to be seen if the *SITES Guidelines and Performance Benchmarks 2009* will achieve such a goal.

The Orem Intermodal Center’s design team frequently came back to this concern, often asking questions such as:

“What is the return?”

“Is there a proven return?”

“Is it a long-term cost benefit?”

Although the *SITES Guidelines and Performance Benchmarks 2009* and *The Case for Sustainable Landscapes* both make efforts to explain the savings that can be realized from the implementation of sustainable practices, some members of the Orem Intermodal Center's design team remained uncertain as to whether or not such savings would come to fruition. One team member expressed such uncertainty by wondering whether the SITES projections will end up like those of LEED, where "none of the buildings are performing anywhere near what the credits said they were going to do".

Such skepticism does not necessarily indicate that the Orem Intermodal Center's design team believes that SITES will fail to deliver cost savings. However, it is an indication that SITES will need to continue to elucidate the economic validity of its recommended technologies and practices. This situation was summarized best by one of the Orem Intermodal Center's team members, who suggested that SITES should "keep working on cost/benefit metrics! We must be able to demonstrate cost effectiveness in terms that our investors, clients, and financiers can understand."

Formalized Participant Feedback

Although SITES has made it clear that it will use participant feedback to improve future iterations of its *Guidelines and Performance Benchmarks*, it would undoubtedly benefit from establishing a formalized system of gathering participant feedback. . Through such a system, SITES would be likely to gather a greater amount of detailed feedback and provide a means for all its participants to contribute to the ongoing refinement of the *SITES Guidelines and Performance Benchmarks*.

The design team hopes that in the future SITES will provide a detailed set of questions such as those that prompted the current report's findings. In fact, the team expressed the desire to make the question list from this report available to SITES (see Appendix) in case they could benefit from its content

CLOSING REMARKS

The Utah Transit Authority and Psomas Engineering would like to express a sincere thanks to the Sustainable Sites Initiative for providing the Orem Intermodal Center's design team with the opportunity to participate in its pilot program. Through this opportunity, the design team has been granted a rare chance to contribute to the growth and progression of a promising new model for sustainable land development.

The Orem Intermodal Center's design team hopes that the observations, recommendations, and criticisms contained in this document reflects the team's desire to assist the future development of the SITES certification program. In particular, the team hopes that this document will help inform the refinement of the *Guidelines and Performance Benchmarks 2009* prior to the widespread release of the SITES in 2013. By doing so, the Orem Intermodal Center's design team looks forward to helping SITES promote land development practices that are socially, economically, and environmentally sustainable.

APPENDIX

Question List for SITES Participant Interview

Background

-What was your initial impression of SITES in comparison to other sustainability-related programs (LEED, ISI, etc.)?

--What was your initial understanding of the demands that SITES would place on the Orem Intermodal project (time, resources, costs vs benefits, etc.)?

Performance

-How well do you feel that SITES achieved its stated goal of establishing "clear and rigorous criteria for sustainable landscape design, construction and maintenance"?

-How well did SITES fit into your standard project development workflow (ie: what if any adjustments did it require)?

-How did SITES compare to your initial expectations in terms of increasing the sustainability of the Orem Intermodal Center?

-What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think were especially effective in contributing to the sustainability of the Orem Intermodal Center?

-What areas of the SITES Guidelines and Performance Benchmarks 2009 presented difficulty?

-Despite this difficulty, do you believe that these areas made worthwhile contributions to the sustainability of the Orem Intermodal Center?

-How would you evaluate the SITES Guidelines and Performance Benchmarks in terms of costs/benefits for the Orem Intermodal project?

Suggestions

- What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think should be revised to improve effectiveness/decrease difficulty?
- Are there any areas that SITES does not currently address, but should consider adding?

Future

- Do you think that SITES provides an effective complement or alternative to other sustainability-related programs?
- Under what circumstances would you be inclined to seek SITES certification for future projects?
- If SITES develops a program of certification for professionals as well as projects, will you seek such certification?

CHAPTER V DISCUSSION

Interpretation of Results

Success of Data Collection

The study achieved its primary goal by successfully gathering in-depth feedback for SITES regarding the effectiveness of its pilot program. In particular, the study was able to get the key participants of the Orem Intermodal Center's design team to provide the following information regarding their experiences with the SITES pilot program:

- Reasons for participation
- Initial expectations of the SITES pilot program
- Actual impacts and implications of SITES participation
- Strengths and weakness of the SITES pilot program
- Recommendations for revisions to the *SITES Guidelines and Performance Benchmarks 2009*
- Recommendations for the future development of SITES

The specific details of these findings, as described in the results section of this study, will provide feedback that will inform the refinement of the *Guidelines and Performance Benchmarks 2009* prior to the widespread release of SITES in 2013.

Depth of Feedback

The structured methodology of the study allowed the author to gather a large quantity of detailed, relevant feedback. Since the SITES pilot program currently has no formalized means of surveying its participants, it is likely that the feedback generated through this study will greatly exceed that of most other SITES pilot projects.

Therefore, the current study's findings will help compensate for some the deficiencies that may result from the absence of a formalized participant feedback system

for the SITES pilot program. Additionally, this study might also act as a template for the development of a formal SITES participant feedback survey.

In an effort to aid the development of such a survey, this study's question list has been made available to SITES, with complete allowances for its dissemination to current and future SITES participants. In doing so, this study will hopefully allow SITES to collect additional feedback that will assist the development of future iterations of its *Guidelines and Performance Benchmarks*.

Novelty of Feedback

The Orem Intermodal Center is a relatively unique project within the SITES pilot program. This uniqueness stems from the fact that the Orem Intermodal Center is:

- One of only three pilot projects located in Utah
- The only pilot project along the Wasatch Front
- The only mass transit hub in the pilot program

Due to the Orem Intermodal Center's relative novelty within the pilot program, the study's feedback will help ensure that SITES is able to evaluate the performance of its *Guidelines and Performance Benchmarks 2009* across a range of contexts, including the areas discussed below.

Political Climate. "Sustainable", or "green" development is a practice that is traditionally associated with more liberal regions of the United States. However, in recent years sustainable practices have been embraced by an increasingly-wider audience. This study will help determine if this expansion holds true for the SITES. By providing feedback from a project that is located within one of the most conservative states in

America, this study's findings can help SITES to determine whether or not its *Guidelines and Performance Benchmarks 2009* are viable in a fiscally, socially, and politically conservative context.

Environmental Limitations . The semi-arid climate of Utah's Wasatch Front presents numerous environmental constraints, including cold winters, hot summers, and relatively little precipitation. Therefore, the study's feedback will help SITES evaluate the efficacy of its *Guidelines and Performance Benchmarks 2009* within the harsh and challenging climatic conditions of Utah's Wasatch Front.

Purpose of Project. Since its primary purpose is to provide parking, infrastructure, and access for UTA's mass transit services, the Orem Intermodal Center contains a great deal of impervious surfaces and infrastructure. Therefore, the Orem Intermodal Center will allow SITES to determine if its *Guidelines and Performance Benchmarks 2009* can accommodate projects that are relatively impervious, but nevertheless an invaluable part of a sustainable transportation network.

General Summary of Findings

The overall feedback suggests that the Orem Intermodal Center's design team was generally pleased with the performance of the SITES pilot program. In particular, the team was satisfied with how the *SITES Guidelines and Performance Benchmarks 2009*:

- were appropriate to the project's site-oriented, infrastructure-intensive scope
- fit within the project's limited budget
- increased the eligibility of the Orem Intermodal Center for federal grants

- improved interdisciplinary collaboration
- provided validation that the standard practices of UTA and Psomas are consistent with sustainability
- promoted implementation of sustainable practices such as:
 - a low-impact operations and maintenance plan
 - bioswale-based stormwater treatment
 - low water landscaping (native plants, drip irrigation)
 - reduced impervious surfaces
 - increased usage of local, recycled-content materials
 - proactive topsoil management

Despite its overall satisfaction, the design team did offer some criticisms and recommendations for the SITES pilot program. In general, the team thought that the *SITES Guidelines and Benchmarks 2009* were:

- deficient in credits for site selection
- overly weighted towards urban infill
- potentially incompatible with local codes
- lacking in contract specifications

The team also noted problems with some specific details of the SITES prerequisites and credits. Specifically, the team thought:

- the wetlands prerequisite should make allowances for wetland mitigation
- the soils requirements were unclear due to their reliance on academic jargon
- the curve number system of stormwater calculation was ineffective, and incompatible with conventional methods of stormwater management
- the requirements for “equitable site use” inadequately addressed the ability of mass transit locations to act as a social amenity

Aside from these criticisms and recommendations, most members of the design team expressed a willingness to participate in future SITES projects. However, this interest was conditional, since most of the team members thought that the future viability of SITES will depend on its ability to better demonstrate long-term cost effectiveness.

Additionally, the team had reservations about the possibility of a SITES professional credential program, and the team also expressed equivocal support for the potential incorporation of SITES into LEED.

Implications of Findings

The overall findings of the study indicate that SITES has been largely successful in its efforts to assemble “clear and rigorous criteria for sustainable landscape design, construction, operations, and maintenance” (SITES, 2009b, p.5). In particular, the study’s results indicate that the *SITES Guidelines and Performance Benchmarks 2009* proved to be effective in advancing the overall sustainability Orem Intermodal Center in an innovative and practical manner. By doing so, the *SITES Guidelines and Performance Benchmarks 2009* have achieved their intended purpose of providing an effective new paradigm for sustainable land development.

Most surprisingly, the SITES paradigm appears to be cost-effective. As indicated by the study’s results, the SITES requirements did not lead to significant increases in the cost of the Orem Intermodal Center’s design and development. This bodes well for the economic viability of the SITES program, especially since the current financial climate is relatively weak and unlikely to support sustainability-based programs that are not cost-effective.

Through its provision of a site-oriented, cost-effective guideline and rating system for sustainable land development, SITES has the potential to fill a void in the sustainability market. In particular, the study’s findings demonstrate that SITES is providing a much-needed certification program for the areas that exist “beyond the

building envelope”. Since no other sustainability-oriented programs currently address such landscape-oriented aspects of land development, SITES represents an important step in the overall evolution of sustainability.

Despite the study’s support for the overall effectiveness of the SITES pilot program, the results also indicated that there were some areas of difficulty within the *Guidelines and Performance Benchmarks 2009*. These findings have been discussed at length in previous portions of this study, however, it is worth noting that these criticisms do not necessarily indicate a failure on the part of SITES.

In fact, many of these difficulties are more likely the result of a disconnect between the conventional approach to land development and the progressive, ecosystem-based orientation of the SITES. This disconnect is best evidenced by the criticisms that were directed at the reliance of SITES on the curve number system of calculating stormwater discharge. The curve number system, which calculates stormwater discharge according to the capacity of different land typologies to absorb runoff, is an ecosystem-based approach to stormwater management. In this system, the capacity of a site to absorb stormwater is largely dependent the ratio of impermeable surfaces to permeable, natural land coverage. While this system is well-proven, it nevertheless differs from conventional, infrastructure-intensive methods of stormwater management.

Although both systems can have the same net effect on actual stormwater flows, the curve number method is emphasized by SITES due to its ability to provide other ‘ecosystem services’ (additional ecologically-based benefits). In particular, the curve

number system provides ecosystem services such as stormwater filtration, reduced urban heat island effects, carbon sequestration, and increased wildlife habitat.

Therefore, the curve number method differs from conventional methods of stormwater treatment, but it clearly represents a viable, comprehensive, systems-based approach to managing runoff. And although this system may present difficulties for some participants, this does not mean that it represents a failure within the SITES system of stormwater calculation.

Instead, ecosystem-based strategies such as the curve number system encapsulate the greater purpose of SITES, which is to provide effective alternatives to the “business as usual” approach to land development. In doing so, SITES will undoubtedly encounter criticisms from its participants. Hopefully SITES will be able to discern the difference between criticisms that are the result of unreasonable resistance to innovation, and criticisms that genuinely reflective faults within its system.

The results of the current study likely reflect both valid and invalid criticisms. As discussed above, the participants’ objections to the curve number system are likely indicative of resistance to a new paradigm for land development. It is also probable that the criticisms of the SITES requirements for soils, equitable site use, and urban infill are also attributable to inertia and unfamiliarity, and not due to a lack of efficacy.

However, there are some criticisms that merit further evaluation by the SITES. In particular, SITES should reevaluate its lack of: concessions for wetland mitigation, contract specifications, clear soils criteria, and allowances for incompatibility with local codes. At the moment these areas simply do not function well, and may present

unnecessary difficulties for SITES participants. By revising these areas to be more user-friendly, SITES will risk very little reduction in the rigor of its standards, while simultaneously increasing participation in its certification program.

Although SITES should strive to improve the aforementioned aspects of its *Guidelines and Performance Benchmarks 2009*, it should not abandon its commitment to challenging its participants. In particular, SITES should continue to promote new and innovative sustainable practices.

At the moment, the *SITES Guidelines and Performance Benchmarks 2009* represent a relatively good balance between ambition and pragmatism. Simply put, they are challenging, but not impractical.

This does not mean that SITES has developed an unimpeachable certification system, however it does represent critical step in the incremental movement towards true sustainability. This incremental movement will require SITES to judiciously increase the rigor of its guidelines and requirements over the course of time. By doing so, SITES will provide its participants with an innovative paradigm for sustainable land development for many years to come.

Limitations of Study

Limited Sample Size

Although the study gathered feedback from the key members of the Orem Intermodal Center's design team, it nevertheless represents a relatively small sample of

the overall participants in the SITES pilot program. This small sample, while appropriate for the purposes of this study, did lead to some noteworthy limitations.

First and foremost, the study's feedback was gathered from one singular pilot project. This singular project represents a relatively unique combination of circumstances, including:

Funding Constraints. Due to its reliance on taxpayer funding, UTA has a relatively limited source of funding. Therefore the Orem Intermodal Center was largely developed in a low-cost manner. This may have limited the degree to which the Orem Intermodal Center provided an accurate measure of sustainable practices, since such practices were often determined to be cost prohibitive. This is unfortunate, since sustainable practices often cost more initially but actually provide long-term returns on investment.

Limitations of Scope. The Orem Intermodal Center is an infrastructure-intensive project. Therefore it was limited in its ability to test many of the landscape-intensive aspects of the *SITES Guidelines and Performance Benchmarks 2009*.

Size and Location. Many of the *SITES Guidelines and Performance Benchmarks 2009* are focused on treatment of pre-existing vegetation, hydrology, and environmentally sensitive areas. However, since the Orem Intermodal Center site was previously developed on a small, dry, grayfield site that was largely devoid of vegetation, water, and environmentally sensitive areas, the project was not able to provide feedback regarding many portions of the *SITES Guidelines and Performance Benchmarks 2009*.

While these aforementioned characteristics of the Orem Intermodal Center helped ensure diversity within the SITES pilot program, the study's feedback must be interpreted with the awareness that it is derived from the relatively unique context of a singular project. Therefore, this study's results may or may not reflect the widespread performance of the SITES. Fortunately, the SITES pilot program includes over 150 projects that are testing the *SITES Guidelines and Performance Benchmarks 2009* across a variety of regions and contexts. This should help ensure that SITES is not unduly influenced by the feedback of any one site, and is able to test the overall efficacy of its pilot program.

Beyond the limits of the Orem Intermodal Center project itself, the small sample size meant that the study gathered feedback from a relatively limited cross section of professionals, including engineers, planners, and landscape architects. While these professions are pertinent to the overall scope of the SITES program, they nevertheless represent a relatively homogenous cross section of occupations. Such homogeneity means that the results of this study may reflect some degree of occupational bias.

Timing of Study

Due to construction delays and the time constraints of the author's MLA studies, the study's scope was limited to the design and development phases of the Orem Intermodal Center. The author initially intended to evaluate the Orem Intermodal

Center's SITES participation from inception to conclusion, but unfortunately the project experienced delays that were incompatible with the timeline of the author's MLA studies. Therefore a decision was made to limit the scope of the study to the design and development phases of the Orem Intermodal Center.

Although the study was nevertheless able to generate a large amount of information regarding the Orem Intermodal Center's participation in the SITES pilot program, the overall study was limited by its inability to assess the construction-related portions of the *SITES Guidelines and Performance Benchmarks 2009*.

Implications for Future Research

Long-Term Evaluation

The current study evaluated the effectiveness of the SITES pilot program during the early stages of the Orem Intermodal Center's overall development. Therefore the data does not address the long-term effectiveness of the SITES program. Since many of the *SITES Guidelines and Performance Benchmarks 2009* operate on the premise of providing long-term benefits, additional studies should be conducted in order to evaluate the long-term efficacy of the practices recommended by SITES. In particular, SITES could benefit from studies that evaluate the long term effectiveness of its soils requirements, stormwater management guidelines, and site selection criteria.

Additional Locations

As discussed in previous sections of this document (Limitations of Study), the data generated in this study is reflective of only one of the SITES pilot program

participants. Since SITES is intended to be applicable across a variety of contexts, they could benefit greatly from in-depth research that evaluates the effectiveness of the *Guidelines and Performance Benchmarks 2009* across a greater variety of project types, locations, and scales.

Future Iterations of SITES

Since its inception in 2006, the SITES has been working to develop a system of clear and rigorous criteria for sustainable land development practices. Although the recent release of its *Guidelines and Performance Benchmarks 2009* represents significant progress towards this goal, SITES will likely be engaged in the continual refinement of its program for many years to come. In the immediate future, SITES will be releasing an updated copy of the *Guidelines and Performance Benchmarks* in 2013. Additionally, SITES has also been exploring the possibility of becoming part of the USGBC's LEED certification system. Therefore, there will be many opportunities for additional research to be done in order to evaluate future iterations of SITES.

CHAPTER VI

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APPENDICES

Appendix A. SITES Prerequisites and Credits

1. Site Selection (21 possible points)

Prerequisite 1.1: Limit development of soils designated as prime farmland, unique farmland, and farmland of statewide importance

Prerequisite 1.2: Protect floodplain functions

Prerequisite 1.3: Preserve wetlands

Prerequisite 1.4: Preserve threatened or endangered species and their habitats

Credit 1.5: Select brownfields or greyfields for redevelopment (5–10 points)

Credit 1.6: Select sites within existing communities (6 points)

Credit 1.7: Select sites that encourage non-motorized transportation and use of public transit (5 points)

2. Pre-Design Assessment and Planning (4 possible points)

Prerequisite 2.1: Conduct a pre-design site assessment and explore opportunities for site sustainability

Prerequisite 2.2: Use an integrated site development process

Credit 2.3: Engage users and other stakeholders in site design (4 points)

3. Site Design - Water (44 possible points)

Prerequisite 3.1: Reduce potable water use for landscape irrigation by 50 percent from established baseline

Credit 3.2: Reduce potable water use for landscape irrigation by 75 percent or more from established baseline (2–5 points)

Credit 3.3: Protect and restore riparian, wetland, and shoreline buffers (3–8 points)

Credit 3.4: Rehabilitate lost streams, wetlands, and shorelines (2–5 points)

Credit 3.5: Manage stormwater on site (5–10 points)

Credit 3.6: Protect and enhance on-site water resources and receiving water quality (3–9 points)

Credit 3.7: Design rainwater/stormwater features to provide a landscape amenity (1–3 points)

Credit 3.8: Maintain water features to conserve water and other resources (1–4 points)

4. Site Design - Soil and Vegetation (51 possible points)

Prerequisite 4.1: Control and manage known invasive plants found on site

Prerequisite 4.2: Use appropriate, non-invasive plants

Prerequisite 4.3: Create a soil management plan

Credit 4.4: Minimize soil disturbance in design and construction (6 points)

Credit 4.5: Preserve all vegetation designated as special status (5 points)

Credit 4.6: Preserve or restore appropriate plant biomass on site (3–8 points)

Credit 4.7: Use native plants (1–4 points)

Credit 4.8: Preserve plant communities native to the ecoregion (2–6 points)

Credit 4.9: Restore plant communities native to the ecoregion (1–5 points)

Credit 4.10: Use vegetation to minimize building heating requirements (2–4 points)

Credit 4.11: Use vegetation to minimize building cooling requirements (2–5 points)

Credit 4.12: Reduce urban heat island effects (3–5 points)

Credit 4.13: Reduce the risk of catastrophic wildfire (3 points)

5. Site Design - Materials Selection (36 possible points)

Prerequisite 5.1: Eliminate the use of wood from threatened tree species

Credit 5.2: Maintain on-site structures, hardscape, and landscape amenities (1–4 points)

Credit 5.3: Design for deconstruction and disassembly (1–3 points)

Credit 5.4: Reuse salvaged materials and plants (2–4 points)

Credit 5.5: Use recycled content materials (2–4 points)

Credit 5.6: Use certified wood (1–4 points)

Credit 5.7: Use regional materials (2–6 points)

Credit 5.8: Use adhesives, sealants, paints, and coatings with reduced VOC emissions (2 points)

Credit 5.9: Support sustainable practices in plant production (3 points)

Credit 5.10: Support sustainable practices in materials manufacturing (3–6 points)

6. Site Design - Human Health and Well-Being (32 possible points)

Credit 6.1: Promote equitable site development (1–3 points)

Credit 6.2: Promote equitable site use (1–4 points)

Credit 6.3: Promote sustainability awareness and education (2–4 points)

Credit 6.4: Protect and maintain unique cultural and historical places (2–4 points)

Credit 6.5: Provide for optimum site accessibility, safety, and wayfinding (3 points)

Credit 6.6: Provide opportunities for outdoor physical activity (4–5 points)

Credit 6.7: Provide views of vegetation and quiet outdoor spaces for mental restoration (3–4 points)

Credit 6.8: Provide outdoor spaces for social interaction (3 points)

Credit 6.9: Reduce light pollution (2 points)

7. Construction (21 possible points)

Prerequisite 7.1: Control and retain construction pollutants

Prerequisite 7.2: Restore soils disturbed during construction

Credit 7.3: Restore soils disturbed by previous development (2–8 points)

Credit 7.4: Divert construction and demolition materials from disposal (3–5 points)

Credit 7.5: Reuse or recycle vegetation, rocks, and soil generated during construction (3–5 points)

Credit 7.6: Minimize generation of greenhouse gas emissions and exposure to localized air pollutants during construction (1–3 points)

8. Operations and Maintenance (23 possible points)

Prerequisite 8.1: Plan for sustainable site maintenance

Prerequisite 8.2: Provide for storage and collection of recyclables

Credit 8.3: Recycle organic matter generated during site operations and maintenance (2–6 points)

Credit 8.4: Reduce outdoor energy consumption for all landscape and exterior operations (1–4 points)

Credit 8.5: Use renewable sources for landscape electricity needs (2–3 points)

Credit 8.6: Minimize exposure to environmental tobacco smoke (1–2 points)

Credit 8.7: Minimize generation of greenhouse gases and exposure to localized air pollutants during landscape maintenance activities (1–4 points)

Credit 8.8: Reduce emissions and promote the use of fuel-efficient vehicles (4 points)

9. Monitoring and Innovation (18 possible points)

Credit 9.1: Monitor performance of sustainable design practices (10 points)

Credit 9.2: Innovation in site design (8 points)

Appendix B. USU Institutional Review Board (IRB)
Approval Letter

Gmail - Approval letter from USU IRB



jeff dzikowski <jeffdzikowski@gmail.com>

Approval letter from USU IRB

2 messages

noreply@usu.edu <noreply@usu.edu>
 To: keith.christensen@usu.edu, jeffdzikowski@gmail.com

Mon, Mar 19, 2012 at 3:51 PM

Institutional Review Board

USU Assurance: FWA#00003308

Exemption #2

Certificate of Exemption

FROM: Richard D. Gordin, Acting IRB Chair
 True M. Rubal, IRB Administrator

To: Keith Christensen, Jeffrey Dzikowski

Date: March 03, 2012

Protocol #: 4326

Title: A Critical Evaluation Of The Sustainable Sites Initiative: Guidelines And Performance Benchmarks
 2009 As Applied To The Analysis, Design And Development Of The Orem Intermodal Center

The Institutional Review Board has determined that the above-referenced study is exempt from review under federal guidelines 45 CFR Part 46.101(b) category #2:

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through the identifiers linked to the subjects; and (b) any disclosure of human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

This exemption is valid for three years from the date of this correspondence, after which the study will be closed. If the research will extend beyond three years, it is your responsibility as the Principal Investigator to notify the IRB before the study's expiration date and submit a new application to continue the research. Research activities that continue beyond the expiration date without new certification of exempt status will be in violation of those federal guidelines which permit the exempt status.

As part of the IRB's quality assurance procedures, this research may be randomly selected for continuing review during the three year period of exemption. If so, you will receive a request for completion of a Protocol Status Report during the month of the anniversary date of this certification.

In all cases, it is your responsibility to notify the IRB prior to making any changes to the study by submitting an Amendment/Modification request. This will document whether or not the study still meets the requirements for exempt status under federal regulations.

Upon receipt of this memo, you may begin your research. If you have questions, please call the IRB office at (435) 797-1821 or email to irb@usu.edu.

The IRB wishes you success with your research

1/2

Gmail - Approval letter from USU IRB

The IRB wishes you success with your research

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Mon, Mar 19, 2012 at 3:54 PM

Appendix C. Brook Oswald's Responses to Question List for
SITES Participant Interview

Background

-What was your initial impression of SITES in comparison to other sustainability-related programs (LEED, ISI, etc.)?

My initial impression of SITES was that it very detailed in the way it approached credits. Because it was the pilot program I realized that there would be errors and potential difficulties.

-What was your initial understanding of the demands that SITES would place on the Orem Intermodal project (time, resources, costs vs benefits, etc.)?

I felt that the SITES was more suitable to the Orem Intermodal but that it would require more effort time and costs to the client. Grants and additional funding would be the benefit as well as introducing more sustainable methods of construction to UTA.

Performance

-How well do you feel that SITES achieved its stated goal of establishing "clear and rigorous criteria for sustainable landscape design, construction and maintenance"?

The criteria is rigorous, but I felt not always clear. I felt there was sometimes a disconnect between the stated goal and the metrics to achieve that goal. The option of applying for the credit through an alternative user defined metric works at the pilot level and the alternate methods should be considered/ implemented into the final process.

-How well did SITES fit into your standard project development workflow (ie: what if any adjustments did it require)?

I believe new methods are always difficult to implement within an established static work process. The established nature of engineering at Psomas/UTA is often linear at the rating system often took second seat in regards to the project.

-How did SITES compare to your initial expectations in terms of increasing the sustainability of the Orem Intermodal Center?

Sites gave the client a goal to achieve and helped to implement sustainable concepts through the incentive of funding. I would like to have seen UTA take a more aggressive role promoting an overall sustainable model for the agency. I felt the system as tacked on rather than being a supporting element of a larger mission.

-What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think were especially effective in contributing to the sustainability of the Orem Intermodal Center?

Stormwater, soils and native plants/water conservation

-What areas of the SITES Guidelines and Performance Benchmarks 2009 presented difficulty?

Local code does not always agree with methods of implementation.

-Despite this difficulty, do you believe that these areas made worthwhile contributions to the sustainability of the Orem Intermodal Center?

Yes, there were engineering solutions implemented that would not have happened otherwise and Orem Intermodal Center will be a good test model for the future projects.

-How would you evaluate the SITES Guidelines and Performance Benchmarks in terms of costs/benefits for the Orem Intermodal project?

I think time will tell. SITES, in theory is a long term process of payback.

Suggestions

-What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think should be revised to improve effectiveness/decrease difficulty?

Simplify calculations and provide calculators/ spreadsheet to complete the work.

-Are there any areas that SITES does not currently address, but should consider adding?

Understanding the multi discipline nature of projects and methods to incorporate into office workflows to help guide implementation. It needs to be more than just a rating system.

Future

-Do you think that SITES provides an effective complement or alternative to other sustainability-related programs?

It is more applicable to site work than LEED . I personally think that the industry does not need another rating system. Local level ordinance is a more effective tool (can be enforced). Carrot versus a whip I guess, As funding declines I fear that so will the fever for sustainability.

-Under what circumstances would you be inclined to seek SITES certification for future projects?

With the Clients backing and support.

-If SITES develops a program of certification for professionals as well as projects, will you seek such certification?

I think it would be worth it to seek certification on the existing site, but would hesitate to seek SITES certification in the future.

Appendix D. Jeff Dzikowski's Responses to Question List for
SITES Participant Interview

Background

-What was your initial impression of SITES in comparison to other sustainability-related programs (LEED, ISI, etc.)?

SITES seemed to be an appealing alternative or complement to LEED due to its focus on landscape/landscape architecture, as opposed to buildings/architecture. The fact that it was developed in part by ASLA provided even more interest.

--What was your initial understanding of the demands that SITES would place on the Orem Intermodal project (time, resources, costs vs benefits, etc.)?

When I was brought on to the Orem Intermodal Center project, the SITES application process was scoped for about 200 hours total time. Since a lot of this work was to be completed at an internship-level pay rate, it was not expected to place a significant cost burden on the project. In terms of benefits, it was expected that SITES certification would be a win-win-win. By that I mean that it was expected to be advantageous from an economic, environmental and social standpoint. It was also expected that participation in the pilot program would generate some good publicity for UTA, Psomas, and sustainable practices in general.

Performance

-How well do you feel that SITES achieved its stated goal of establishing "clear and rigorous criteria for sustainable landscape design, construction and maintenance"?

I think it was evident that SITES put a great deal of time and effort into the development of their criteria. They definitely achieved a level of rigor that I had not seen elsewhere for land development practices. And for the most part, the criteria were clear, with a good system of references.

However, there were some areas that I found difficult to deal with, especially soils. Perhaps it was due to a lack of familiarity with esoteric topsoil criteria, such as potentially mineralizable nitrogen. And I do not believe that I was the only person who shared this sentiment, since most of our staff had never dealt with these considerations before. Despite this, I commend SITES for endeavoring to improve the treatment of topsoil, since it is a grossly under-represented aspect of the site development process.

-How well did SITES fit into your standard project development workflow (ie: what if any adjustments did it require)?

Since the Orem Intermodal Center project was my first experience working with Psomas and UTA, I cannot speak with certainty regarding how SITES fit within the typical project workflow. However, from my vantage point, it seemed to require the addition of SITES-specific meetings, budgets, resources, etc. At other times, it was probably not incorporated as well as it might be

in the future. In particular, it would likely be easier to complete a SITES application if additional consultants were hired to address areas in which our team was not especially well-versed, such as soils, vegetation, fire-wise guidelines, and site maintenance/operations.

In essence, I think that SITES required a significant amount of additional effort on the part of designers, project managers, consultants, etc. However in the future it could be incorporated into the office workflow in a manner that allowed for it to be included in the SOP.

-How did SITES compare to your initial expectations in terms of increasing the sustainability of the Orem Intermodal Center?

I do think it produced the results that I would have expected for our site, although it might not necessarily be evident at first glance to the untrained eye. After all, the site is a parking lot and transit station, and not some lush example of a prototypical 'green' design.

-What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think were especially effective in contributing to the sustainability of the Orem Intermodal Center?

SITES provided the impetus for us to reduce the overall paving footprint, make use of water-wise vegetation, find recycled content materials, reduce the use of VOC-emitting paints and stains, restore soils in landscaped areas, and set up a long term sustainable-maintenance plan. These things would not have been nearly as likely without the standards set forth in the SITES guidelines.

-What areas of the SITES Guidelines and Performance Benchmarks 2009 presented difficulty?

Soils, wetlands, and operations and maintenance.

The soil requirements were unfamiliar territory for our personnel and consultants.

The wetlands 'do or die' requirement was pretty burdensome, especially since the EA report for our site uncovered a very small, isolated damp spot that was clearly not of any tremendous value. Especially considering the fact that the wetland mitigation that would have taken place to compensate for disruption of that area would have produced a much higher quality wetland.

The O & M requirements were uncharted territory for our personnel, and perhaps more importantly, for the O & M personnel of our clients (UTA). It appeared to me that there was going to be a great deal of difficulty getting the typical O & M personnel to understand and abide by the extensive SITES maintenance plan.

-Despite this difficulty, do you believe that these areas made worthwhile contributions to the sustainability of the Orem Intermodal Center?

In the case of wetlands, no.

For soils and O & M, it is probably too early to tell. It will take some post-occupancy evaluation to determine if the efforts on those fronts were worthwhile.

-How would you evaluate the SITES Guidelines and Performance Benchmarks in terms of costs/benefits for the Orem Intermodal project?

I think that for this project it was of great benefit when compared with the costs. However, it must be mentioned that a large part of the favorable cost/benefit analysis was due to the

additional funding (federal grants) that was provided to this project due to its participation in a sustainability certification program.

In the current economic climate, it would have been very difficult to sell the idea of pursuing SITES certification in the absence of subsidy (federal grants, etc.)

And there is no doubt that SITES requires no small amount of additional time and effort. Our initial scoping was pretty far off target. In the future we would need to do a better job of budgeting time and resources in order to properly reflect the demands of a SITES application. However, with time I also believe that we would become more expedient in completing the SITES requirements, and therefore would improve the return on investment for SITES participation.

Suggestions

-What areas of the SITES Guidelines and Performance Benchmarks 2009 do you think should be revised to improve effectiveness/decrease difficulty?

The wetlands prerequisite should be adjusted to account for sites with small, isolated, marginal wetland areas.

The soils requirements could be revised to be more easily understood. I think that a soils worksheet would improve the situation, by providing a document that could be used by all personnel involved in a SITES project, from office personnel to construction contractors. SITES should provide a set of construction specifications. This would help participants ensure that the SITES requirements are provided to contractors in a legible and binding document. Keep working on cost/benefit metrics! We must be able to demonstrate cost effectiveness in terms that our investors/clients/ financiers can understand.

-Are there any areas that SITES does not currently address, but should consider adding?

In would be good to see SITES include some credits for usage of local, genetically-adapted plant materials.

Future

-Do you think that SITES provides an effective complement or alternative to other sustainability-related programs?

I believe that it offers a good alternative and/or complement to LEED. I think its incorporation into LEED could be beneficial, it should be wary of growing discontent regarding LEED's increasingly burdensome cost structure (fees, CEUs, expensive "point-buying" technologies). I think that it is unfortunate that SITES seems to be hitting the market during an economic downturn. Unlike LEED, which gained tremendous momentum during the real estate boom, SITES will face an extremely cost-sensitive market. If SITES can gain some degree of foothold during the next few years, it will hopefully be well-positioned to gain wider acceptance as the market improves.

-Under what circumstances would you be inclined to seek SITES certification for future projects?

At the moment I would only be inclined to pursue SITES certification for a project if a client was especially motivated (not cost averse), a site was especially suitable (easy path to SITES

compliance), or if additional funding was available due to SITES participation (grants, etc.). The market is simply too fragile to justify any additional costs at this moment.

-If SITES develops a program of certification for professionals as well as projects, will you seek such certification?

I certainly would be interested in getting certified if the costs were not overly burdensome, and there was an assurance that my certification would be lasting. This is not to say that I would be opposed to CEU's, but rather that I would not be interested in having to re-test/re-certify on a regular basis.

Unfortunately LEED's apparent 'bait-and-switch' has left me leery of seeking certifications that are subject to change. Justifiably or not, LEED's recent revision of its professional credential system has created the appearance that it is capricious and profit-seeking. SITES would be well-advised to take cues from this perception of LEED, and try to avoid making any of the same mistakes.

Appendix E. Letter of Information



LAEP Department
4005 Old Main Hill
Logan, UT 84322-4005
Telephone: (435) 797-0500



Page 1 of 2
USU IRB Approval: March 3, 2012
Approval Terminates: 03/02/2013
Protocol #4326
IRB Password Protected per IRB Administrator

LETTER OF INFORMATION

A Critical Evaluation of the Sustainable Sites Initiative

Introduction/ Purpose Dr. Keith Christensen in the Department of Landscape Architecture and Environmental Planning (LAEP) at Utah State University is conducting a research study to find out more about the Sustainable Sites Initiative (SITES) pilot program. You have been asked to take part because of your participation in the development of the Orem Intermodal Center's SITES pilot application. There will be approximately six participants at this site. There will be approximately six total participants in this research. Jeff Dzikowski, a student researcher with Utah State University's LAEP Department, will be assisting Dr. Christensen with data collection throughout the course of this study.

Procedures If you agree to be in this research study, you will be expected to participate in an open ended focus group interview. This interview will last approximately 1.5 hours and will take place at the conference room of Psomas Engineering in Salt Lake City. During the focus group interview you will be asked to answer a series of questions that relate to your experiences with the Orem Intermodal Center's SITES pilot application. Your responses to all questions will be recorded via a digital audio recorder. These audio recordings will also be transcribed following the interview to aid the researchers' data analysis. Following the focus group interview you may be asked to answer follow up questions. These follow up questions will be sent to you via email. Your responses to the follow up questions will be added to the aforementioned transcripts, and will also be subject to analysis. Follow up questions will be performed during the four week period following the focus group interview.

Following the collection and interpretation of all responses from the focus group interview, the findings of this study will be packaged in a report and forwarded to the Sustainable Sites Initiative.

Risks Participation in this research study may involve some added risks or discomforts. These include: -
Potential disagreement between the study's participants
Potential disagreement between SITES and the study's participants

The study will take measures to minimize these risks by having a third party facilitate communication throughout the focus group interview and during the course of any communication with SITES.

Benefits Through your participation in this interview, the researchers will be able to provide feedback to the Sustainable Sites Initiative regarding the performance of the performance of the pilot program in the design, development and construction of the Orem Intermodal Center. This feedback is expected to help the Sustainable Sites Initiative refine its guidelines and specifications prior to the official release of SITES in 2013. Therefore your participation in this study will allow you to actively contribute to the improvement and refinement of SITES.

Explanation & offer to answer questions Dr. Keith Christensen has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may reach Dr. Christensen at (435) 797-0500.

Voluntary nature of participation and right to withdraw without consequence Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits.



LAEP Department
4005 Old Main Hill
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Page 2 of 2
USU IRB Approval: March 3, 2012
Approval Terminates: 03/02/2013
Protocol #4326
IRB Password Protected per IRB Administrator

LETTER OF INFORMATION
A Critical Evaluation of the Sustainable Sites Initiative

Confidentiality Since your participant involvement in the SITES program is a matter of public record and was sought by the participants of their own accord, this study will not seek to maintain the anonymity of the participants. Data collected by the researchers will be kept for no more than one year. However, transcripts of the focus group interview may be included in the appendix of the published research.

IRB Approval Statement The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irbgusu.edu to obtain information or to offer input.

Investigator Statement "I certify that the research study has been explained to the individual, _____ by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered."

Signature of Researcher(s)

Dr. Keith Christensen
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Appendix F. Transcript of Focus Group Interview

Transcript Details

Location: Conference Room, Psomas Engineering, Salt Lake City

Participants: Key Members of Orem Intermodal Center Design/Development Team

Date and Time: February 23rd, 2012; 11:30am-12:35pm (65min)

Transcript Key:

Jeff Dzikowski (interviewer): JD

Travis Perry: TP

Gerry Tully: GT

Janelle Erickson: JE

Jon Gilchrist: JG

Von Larsen: VL

1 **JD: Well thanks again everybody for helping out with this. One thing I**
 2 **wanted to start with was just getting a little bit of feedback, again, of what the**
 3 **initial reasoning was for deciding to pursue SITES certification. Just to cover**
 4 **that a little bit before we get started. Now, what was that reason?**

5 **JE:** Money, grant money. Money.

6 **JD:** Yeah.

7 **GT:** I don't think I've ever heard a more altruistic answer [jokingly].

8 **JE:** UTA has general sustainable stuff that we try to do. We try to be, we have a
 9 set of standards.

10 **TP:** But we did talk about LEED specifically after, when we were in the proposal
 11 stage, and after we won the project, we talked about LEED and specifically said no.
 12 When we found out about Sustainable Sites and brought it up to UTA, then I think
 13 the decision was made that there was possibly some funding out there that could be
 14 contingent on this being sustainable, and so that was what kind of drove it.

15 **JE:** I think the true reason would be, it started to become the standard in our
 16 culture.

17 **TP:** But yeah, I agree with that. UTA in general was headed down that direction.
 18 They want to be sustainable as possible.

19 **JE:** We have a whole sustainable brochure of stuff we try to do.

20 **TP:** They wanted to do that in a fiscally prudent way, but they wanted to do that
 21 wherever was possible.

22 **JD: So you mentioned LEED. What was your initial impression of SITES**
 23 **versus LEED and why did you choose SITES over LEED?**

24 **JE:** I thought LEED was for buildings.

25 **TP:** I think that's part of, the other part of it is, SITES seemed like, it felt like it was
 26 a lot more applicable to us, but it also seemed like it was something that Psomas
 27 was interested in pursuing because it's what we do a lot of. We don't do buildings.
 28 We let the architects do the buildings. We may have some comment on a building,
 29 but we don't do a lot of that. It seemed liked for Psomas it was really good fit with
 30 SITES and so we started shopping it to clients saying hey we've got this new
 31 program we're excited about. We think it's a good fit for some of the things we're
 32 doing with you.

33 **GT:** It was a better way to get the recognition of the effort being done on a site
 34 development level. It'd be very hard under LEED to get the points necessary to get
 35 certified.

36 **TP:** There are some things now with LEED ND [Neighborhood Design] that kind
 37 of fit more of what we do generally, but doesn't fit as well as this SITES thing.

38 **JD: So what was your initial understanding as far as SITES goes of the**
 39 **additional demands it would place on the project? Cost, time, cost vs benefits,**
 40 **resources, etc., what did you think it would require going for SITES?**

41 **JE:** I think what we thought is it would probably cost more initially but save more
 42 over time. As far as maintenance goes, and then as well as hoping that such a, it
 43 might reduce the impact of the local infrastructure, by you know, implementing
 44 some of these practices.

45 **TP:** I think the direction we got from the UTA, and Janelle can tell me if I'm
 46 wrong, but it seemed like it was, do as much as we can that makes long-term sense,
 47 but don't go over the top, and we get that a lot from clients on LEED. We want to
 48 be LEED certified but we don't want to make a project that doesn't seem so small in

49 the end. They have to be fiscally responsible with taxpayer money and so they
 50 wanted to look at stuff that made sense in the long term to be sustainable, made
 51 economic sense, and you know and maybe weigh that also with sustainable in value
 52 of it but not overly value the sustainable portion I guess is that true?

53 **JD:** You wanted to get a return on it even if it's longer term.

54 **TP:** And then though we could do that. We didn't want to add a lot of cost to the
 55 project. I think they were ok with, like obviously it was going to add cost, just the
 56 fact that we were going to go through the certification process, and I think you
 57 [UTA] were okay with that because that again was reflected in possibly helping get
 58 some funding, but they didn't want to do things that would be over the top. Like
 59 we initially looked at doing LED lights, and we knew that cost was really big.

60 Turns out we could do it now thanks to an error in the bidding process, same price.

61 **JD: Did SITES fit in pretty well with the standard project workflow like in**
 62 **your typical process? Or did it demand additional things that presented**
 63 **difficulties or added costs, things like that?**

64 **JG:** It seems like it is just bookkeeping more. They had to keep really close tabs of
 65 where the dirt's going, where the debris is going.

66 **TP:** Well the contractor, it created obviously some initial work for us, getting set
 67 up, and we added you [Jeff Dzikowski] as a result and so that definitely added
 68 some cost and some time.

69 **JE:** I think we had to have a little bit more reviews with the maintenance people to
 70 make sure they were okay with a lot of the things we're proposing.

71 **GT:** But I think that was good for the process overall of getting that maintenance
 72 perspective at the front-end design. And you know I think the way we answered it
 73 was an understanding that as the client you wanted to do the right thing, you
 74 wanted to do the best job possible, but we were not here to buy points. I think UTA
 75 will spend a little bit of money to maybe document the good things we're doing.
 76 But we're not here to say, 'Oh buy three panels so we can get a point there.'

77 **JE:** Right.

78 **GT:** It wasn't just to buy certification.

79 **TP:** I think that's a good way to put it.

80 **JG:** I think it's also good validation that what you do, cause it doesn't seem like
 81 there's anything here, and I came to the project late in the game, but it doesn't seem
 82 like there is anything here that is really that new to what UTA does, so it's good
 83 validation that what UTA is doing is consistent with sustainability and Sustainable
 84 Sites.

85 **JD: So it's pretty close to your existing standards, more or less?**

86 **TP:** No, we brought in some new philosophies on you know, low flow, a lot on the
 87 landscape end and irrigation and we brought in a lot of things that UTA wasn't
 88 doing initially that we kind of encouraged them to do.

89 **JE:** But we were already doing the irrigation.

90 **GT:** UTAs projects were evolving there. I think more or less, everyone was on the
 91 right track, but this might have made it a more conscious effort.

92 **JE:** Right

93 **GT:** Rather than, oh yeah we did that. That was a good idea

94 **TP:** And I would add to that, though it's kind of the low end. Where we're looking,
 95 we're looking at barely certifying under SITES, so they're not overreaching, and I
 96 think that's probably a good thing. That's where they want to be right now. They
 97 want the public entities to figure out those costs and help bring those costs down,

98 you know, the new ideas, they'll kind of follow on the dove tails and as much as
99 they can that's fiscally responsible.

100 **JD: In the *SITES Guidelines and Performance Benchmarks*, their standards
101 that they created, they say they aim to create clear and rigorous criteria for
102 sustainable landscape design construction and maintenance. Do you feel they
103 achieved that?**

104 **GT:** Rigorous yes, clear, no. [emphatically]

105 **TP:** Clear and in some cases maybe not.

106 **GT:** There were a lot of questions...what do you think this means? We recognize
107 it's a pilot project.

108 **TP:** That's kind of the point.

109 **GT:** The point is kind of the shake down cruise to see where they need to make it
110 better.

111 **JG:** An example would be the drainage process for determining the impact of
112 runoff, it was, in my opinion, it was the process that's outlined in their handbook is
113 poor, really poor. [emphatically]

114 **TP:** The other, I had a thought and I just lost it.

115 **GT:** Their soils.

116 **TP:** It was their wetland. It was their example where we got points or we could get
117 points for, for avoiding wetlands onsite but we didn't get those same points for
118 picking a site that didn't have the wetlands in the first place.

119 **GT:** And I've had that discussion with them at SITES, of well if we did the right
120 thing and chose the site than didn't have wetlands, don't we get the credit for
121 avoiding wetlands, inherently? And they didn't really, they understood the logic,
122 and they understood that the way they were scoring it, no you don't, but that may
123 be something coming out of the pilot project where you do get that point. Because
124 what was happening is by picking the right site, it's harder to get the points you
125 need to get certified.

126 **JE:** Well that was sort of the weird thing too was that, we came in to SITES, it had
127 to be done within a certain amount of time, but a lot of the upfront criteria was site
128 selection, but we already had a site selected. So, but then there was no possible
129 way you could have started a project with a blank slate, not knowing where it was
130 going to go, and got it through to construction in the time frame that they gave you
131 for the Sustainable Sites pilot program.

132 **JD:** Right, they seemed to place a lot of emphasis on the site selection aspect and
133 Gerry saying, you probably don't necessarily get as good a return as you could.

134 **GT:** I think for a lot of these projects it would be rare if someone said, let's do a
135 sustainable site and build a project, and we don't know where it's going to be but
136 let's go pick something.

137 **TP:** Basically we got our site because we had to be near the railroad, so we don't
138 have a lot of luxury. You know, where are we going to do this, we're pretty well-
139 defined.

140 **GT:** And by the time you already have a project, you've already been through an
141 EIS process and you know, funds in, you've got funding, so it's a little different
142 process for this. If I were a home builder and I know I'm going to go build 10
143 homes, gee, let me go pick a site that's least impacting, I'm not even sure they
144 would do that. They'd be like, where's the worst land available and where's my
145 market.

146 **TP:** And how much is it going to be

147 **TP:** That being said, I think it's fair that there are points for avoiding wetlands,
148 they just need to make sure that gets incorporated somehow. Our site doesn't have

149 the stuff so we should be rewarded for that, or it does have, but we're going to get
150 rewarded for avoiding it.

151 **GT:** They did ask me on a phone call with the SITES group, you know, what's
152 your opinion of the soils components? And I said, you know it appears that it was
153 written by a bunch of academics that never stepped outside a lecture hall except to
154 go to the soil lab. And they laughed and said, 'Oh, so that came across that
155 clearly?' Because that's really what happened with them. That section was really
156 hijacked by a bunch of academics. [emphatic]

157 **JD:** And soils seemed like one of those areas, I know when I was working as an
158 intern on it, where geotechs [geotechnical experts] certainly have their standards for
159 how they look at soils but a lot of what SITES has were things that people weren't
160 necessarily as familiar with. I know I spent a lot of time trying to figure out what
161 they wanted out of topsoil analysis. So that certainly was different, but on the other
162 hand, you have to commend them for trying to start looking at something that
163 hasn't been looked at previously, and hasn't been part of the standard work flow.

164 **JD: Were there any other areas that presented difficulty that you guys can**
165 **think of? Anything else that was problematic?**

166 **GT:** Not necessarily on this project, but just from other sites that I looked at, I think
167 they're going to have a hard time with more rural areas. I think if we were pushing
168 the rail down to Santaquin and looking at a site there for certification, it'd be even
169 tougher. You say you've got to be next to the rail, but you lose so many points the
170 further out you get, and yet why shouldn't that site be as sustainable as something
171 else.

172 **TP:** Should be.

173 **TP:** We were just talking aboutsince material has to travel.

174 **GT:** Well it's the walkability, it's the interrelationships, it's that site selection.
175 Whereas the reason you would push it down to Santaquin would be to extend
176 service and get cars off the road and air quality improvements, and yet your site
177 could be as green as possible in terms of sustainability but you're out in a
178 greenfield because you're at the end of the line and you're not going to get as many
179 points as if you were doing something at 9th South.

180 **JD: So you think it's weighted more heavily towards infill projects?**

181 **GT:** Definitely weighted towards urban infill.

182 **TP:** Which seems to be understandable, again, kind of, that would be inherently
183 more sustainable than a project out in the middle of nowhere.

184 **GT:** But why shouldn't a project, you know basically the rail line extends that
185 urban connectivity and it should be able to...

186 **TP:** It kinds of more a specific situation in general.

187 **GT:** Yeah, we came across in Moab, we're building that transit hub and park.
188 We're going for SITES. It's outside of town but it's at the confluence of the traffic
189 flows, and the reason they put us in the pilot program was to see if we could do it.
190 And every time we started to drop out they'd call us and say ' No, we really want
191 you guys in.'

192 **TP:** I guess the other thing that is just inherent because its new, the fact that the
193 landscaping requirements from the nurseries. It was really difficult to find a
194 nursery that even knew what we were talking about let alone could provide the
195 information we needed.

196 **GT:** For LEED people familiar enough that the growers are documenting and
197 sourcing for that but you talk to some of the growers, it's at best you get the

198 answer, 'yeah I think I can do that.'

199 **JD:** I know it was harder. It was easier to find materials suppliers, and LEED had
200 kind of paved the way for that, whereas with, you know, vegetation materials, it
201 was much harder. I can really only recall one who thought that he could deal with
202 that.

203 **TP:** I'll be interested to see how the contractor deals with it. He hasn't said
204 anything yet.

205 They'll have to deal with that. We may want to discuss that in our next meeting just
206 to make sure he's passing that word along.

207 **GT:** You know, one thing to mention is when you talk about 'Was it extra work or
208 extra costs?', we had to do an addendum on the specs. We had the standard specs
209 we use, but now we had to highlight certain areas and the easiest way to do it was
210 an addendum that you hope they read when they were vetting.

211 **TP:** I had to call someone at the front and tell them they better....

212 **GT:** I mean, let's face it, we're lucky if they even have a set of plans on site.
213 [jokingly]

214 **JD:** I know that in my correspondence with SITES that's one thing they talked
215 about was trying to add specs in the future, but they're not available yet because
216 having to go back and rewrite a whole set of specifications is pretty daunting. It
217 starts to add quite a lot of time costs, etc. for the project.

218 **TP:** Well if they could do it instead of 150 pilot projects do it, it seems like that's a
219 little more...

220 **JD:** Right.

221 **GT:** Well for us we had to identify the areas we thought we had needed coverage.
222 We went in to the original spec and read it, and we had to write and addendum to
223 that section that really didn't undermine the intent of the original, but added on a
224 little bit of extra recordkeeping and sourcing.

225 **JG:** And that's kind of the hard part is making sure you don't have conflicts
226 between specs.

227 **TP:** We had to know very clearly up front which points we were going to go after
228 at that point too because once we put that there we couldn't go back to the
229 contractor and go 'whoops by the way' and so it would be nicer to have a little
230 more direction on, is it realistic that you give these point cause it seems like on
231 SITES, it's all kind of, yeah, they'll kind of review it as we go along, but it's the
232 final, last review where they say, 'Oh you get 99 points instead of 100, sorry.' And
233 we could've maybe got that point, but it would have to be way back when we were
234 bidding the project.

235 **GT:** You know an organization like UTA is not going to allow different specs on
236 different projects out there. There has to be some standardization just so that your
237 network, your system has to all fit together.

238 **JG:** We're trying...

239 **GT:** I just had this conversation up at the University. We're doing a study on ADA
240 [Americans with Disabilities Act], and we're having trouble classifying doors for
241 ADA compliance so I finally had to show the steering committee enough photos to
242 beat them over the head of, 'You haven't built any doors up here that look like any
243 other doors up here.' And that's the network you're talking about. It's hard and yet
244 it had to be done.

245 **JG:** It does. I mean and they've been working on it, it's just taking some time.

246 **TP:** If you get anything built then it'll be done.

247 **GT:** So on top of that you've got one station going for SITES out of a whole
248 network. It can't be built to totally different specs.

249 **JG:** Right.

250 **TP:** The other one I noticed that made it a little bit difficult to get was the paint on

251 the bus shelters. They were we'd specked a low VOC [Volatile Organic
252 Compounds] and we're not sure it exists. They were looking for that so we'll see
253 what comes out of it.

254 **VL:** So right now, for my edification, the SITES program is just a pilot, but is it, do
255 you think that the government, when they give out these loans, grants to the various
256 agencies, they're going to force them to do SITES, do you think that'll happen?

257 **JE:** I think they're starting to start pushing that.

258 **VL:** I don't want to say force.

259 **GT:** I can tell you that in Moab, Moab got a grant based on the fact that they were
260 designing to SITES.

261 **JE:** I think that was a big part of the livability there and part of the.....grant there.

262 **TP:** So do you think it paid off.

263 **JE:** I think it did.

264 **GT:** I think you're seeing money come in, saying you're trying, but ok, it might not
265 be perfect.

266 **TP:** I'm glad to hear that.

267 **JE:** Because they're all about sustainability.

268 **VL:** It surprising, going back to your questions, it wouldn't surprise me if, just like
269 ADA, in the future, if you got federal money, you might need to.

270 **GT:** I don't know if it would be ADA level, but it might be similar to LEED. I
271 don't think there'd be a law, it'd be LEED and say, 'Now all federal projects have
272 to take our experience on military bases. Everything we do on military bases now
273 has to be LEED Silver. And even if it's private buildings.

274 **JE:** Well I think that, I think that also is that same sort of thing is they're starting to
275 require a lot of more, they're starting to put so much more emphasis on federally
276 funded projects having even the right land use and planning for TOD in place, but
277 they're not going to fund it. So I think it's the same sort of thing.

278 **JG:** I think even if we could, some court could decide to tie something like this to
279 NEPA easily. It's not a big reach.

280 **TP:** It kind of depends on what happens with SITES too, because I think the
281 ultimate goal is to somehow become part of LEED.

282 **JG:** I think that's probably more the direction it's heading.

283 **GT:** And I don't know what the numbers now with FTA [Federal Transit
284 Authority] cause I haven't worked for them awhile. It used to be that they had this
285 much money [makes gesture to indicating large size] and this many applications
286 [makes gesture indicating small size]. Now it's like that. And they were all good
287 projects. They were looking for tiebreakers, so UTA has a great track record of on
288 time, under budget, that's a tie breaker. It's this just one more tie breaker of, well
289 they're both good projects but these guys are doing sustainability. Let's give them
290 the money.

291 **JG:** I know there have been other agencies around the country that have looked at
292 UTA and they said, 'Why do they get all the money all the time?' You mean
293 because we have gotten quite a bit more than some of the other ones. But I think its
294 just cause we try, they're good projects that we've done right. We select good
295 contractors, so...

296 **GT:** You didn't watch the CNN debate last week? It's because Mitt Romney
297 pushed earmarks. [joking]

298 **JG:** Oh really.

299 **JE:** Oh really.

300 **GT:** The fact that he was saying, 'I don't need the money for UTA for the
301 Olympics.'

302 **JG:** I didn't watch it.

303 **GT:** That's cause you have a life. [jokingly]

304 **JD:** We talked about some things that presented difficulty but do you think
305 any of those things that presented some difficulty were needless, that is, did
306 those things might have been difficult, but didn't they still contribute to the
307 overall aim at achieving sustainability?

308 **TP:** As a pilot project process, yeah. Most of those things were understandable and
309 reasonable issues that we can work through. Especially like the growers thing, I
310 think once people know what we're looking for and why we're looking for it,
311 they'll respond to that after enough people start looking for that.

312 **GT:** I think some of the points that went towards future social programming were
313 maybe superfluous.

314 **JE:** Yeah.

315 **GT:** The social programming we're doing, we're providing a transit station. That
316 doesn't rise above hosting a farmer's market once a year? [emphatic]

317 **JE:** Well it's not really up to us either. We're not really in the business of farmer's
318 markets anyway.

319 **JG:** I'm going to go back to that stormwater one because the stormwater one was
320 based on curve numbers only, so they want your composite curve number to be the
321 same or better than it was before, which works for a redevelopment of a
322 manufacturing facility or something, but if it's a greenfield or brownfield or
323 something like that, you can't do it.

324 **TP:** They acknowledge that. I remember we had a little meeting where we talked
325 about that early in the process.

326 **GT:** And I think this goes back to your infill development, but it seems to be
327 geared a lot heavily towards redevelopment of unsustainable areas rather than just
328 making sure that new development is sustainable.

329 **VL:** And that process stormwater was very unique. That's not how LEED or
330 anyone else approaches it. Cities and don't approach stormwater that way.
331 [emphatic]

332 **JE:** And speaking on the cities, I think that was the other thing that could have been
333 a huge challenge, was just that a lot of things that we're doing are not to their
334 standard. And we were fortunate that they were pretty understanding to some
335 degree. I mean in the end we really didn't receive any credit.

336 **TP:** And we were fortunate that Orem was the pilot project, not Provo.

337 **JE:** Well yeah.

338 **GT:** Provo would've scored more points on the infill.

339 **JE:** Not the landscaping.

340 **TP:** They did do some landscape stuff in Provo. The streets are the one that I was
341 thinking of. Their minimum street size was such a bite.

342 **JD:** And parking stalls as well. Wasn't that an issue?

343 **TP:** It was. Now, it actually was. And Orem was really good about it because we
344 had reduced the parking stalls in some impervious areas.

345 **JE:** They allowed that reduction in Provo too.

346 **TP:** They did. They did and they allowed it after, it was just a little more of a
347 process in Provo than it was in Orem. Provo was like 'Well Orem is letting us do
348 it.'

349 **JE:** Basically that's how I approach everything with those guys. All right, we'll just
350 build the BRT in Orem then.

351 **TP:** Does Orem know about the transit pavilion yet?

352 **JE:** Oh I'm sure, we're not talking to them about that just cause they think we're
353 not applying enough grants for them.

354 **GT:** You know that's an interesting aspect, cause how you do on these things is

355 whether or not the cities get in that competitive mode of they want this shiny new
 356 toy or not. I mean right now on the private side, we're working in multiple cities.
 357 It's amazing how the door opens when I say, oh I've got somebody that's moving
 358 their business from Midvale to Murray. And as long as Murray thinks there's a
 359 loser in this game, they're right there, they're all over it.

360 **TP:** That kind of dovetails into another issue. There's the client, there's the
 361 contractor, and the designer, we're all kind of on board with this, but there's that
 362 other, the city, and what do they have to do. Do they even know about it, does it
 363 make sense, and have we educated them enough that they understand why it's
 364 important. I think all the cities know about LEED but obviously they don't know
 365 about SITES. We were kind of blazing the trail. So it was a little difficult getting
 366 them to understand why we're doing what we're doing and why it makes sense.
 367 There are still some things that they way behind on, at least the cities we're
 368 working with, they're way behind when it comes to sustainability. And this I guess
 369 will help them get moving in the right direction.

370 **JD: That leads to another question I had as to whether or not you think**
 371 **there's anything that SITES can do to raise awareness about their program, or**
 372 **get greater visibility for their program. What else can they do aside form**
 373 **having projects come online and slowly letting the world know about their**
 374 **program? Just tout their various pilot projects and then they go public in**
 375 **about a year or so?**

376 **JE:** Do you know what the list of other projects were?

377 **TP:** You can get it on the website.

378 **GT:** You can get it on the website, and they tend to be a lot of infill. A lot of
 379 redevelopment. A lot of parks.

380 **JE:** Yeah and I'm curious about whether, if there were much private sector, or was
 381 it mostly all public.

382 **TP:** Do you remember the split they had?

383 **JD:** I don't recall.

384 **GT:** I think they are heavily weighted towards public at this stage. Because they
 385 came along with an awareness in one area at a time when the economy was down
 386 and there just weren't a lot of projects. I wonder, is there room in the marketplace
 387 for LEED and SITES? And I know two other groups out there....

388 **JG:** That's what I was wondering, besides getting funding from the government or
 389 whatever, is it just so that we're trying be greener people, to try and utilize our
 390 resources better. Is that the whole point of SITES?

391 **GT:** Here we go.

392 **JE:** Well it's long-term maintenance costs will go down too. It's not just a matter
 393 of...

394 **JG:** Cause it seems that what they're asking, if it's common sense and it makes
 395 sense, rather than saying, 'Why are they making us jump through all these hoops?',
 396 does it really make any sense, is it really helping us, or is it just stuff that they think
 397 will make....you know?

398 **JD:** Right, is there a proven return?

399 **JE:** Right is there some sort of measurement after this....what is the return?

400 **GT:** And that's what I don't like about LEED now, it's gotten to the point where all
 401 it is a set of rules. [emphatic] It's a checklist. Nobody thinks about design. Nobody
 402 thinks about why, you know, they go out and build their building out in daybreak
 403 and they say 'oh we're a point short, let's throw some solar panels on the roof' that
 404 don't do any good to anybody and they actually created more, they had to go back
 405 and redesign and put bigger beams in to make it work and it was pointless, but it

406 had some point and now they're gold certified. Sorry it's platinum.
 407 **TP:** So that's what I'm afraid, you know, I think it's really good, I think its
 408 probably going to why UTA and a lot of other public agencies don't certify in
 409 LEED is cause there's no point to do that, there's no reason for doing that, it
 410 doesn't make sense. But it does make sense to design sustainably.
 411 **GT:** If the goal is to get better design, more wise use of materials, locations,
 412 selections, as part of the vernacular, then I think LEED has lost its way, because all
 413 LEED wants to do is charge you for everything. It's, as someone who went
 414 through the testing, paid the money...
 415 **TP:** Was promised to be LEED AP [Associate Professional] for life...
 416 **GT:** Now we were told had got to take another test, and you have to pay the fee
 417 again, and you've got to do continuing education and you've got to pay us to do the
 418 continuing education and we're all saying, well I have that LEED AP thing for life.
 419 So what if it's, now it should be LEED AP BDC [Building Design and
 420 Construction], which is what mine says now cause I registered, I have the two years
 421 to give them all my money by completing things. And I think the real goal is to
 422 come up with a system, whether its SITES or LEED or a combination, that
 423 encourages the right thing, monitors that you did it, and isn't there to become an
 424 industry unto itself. [emphatic] Because it does help get funding. And the funding
 425 is just there for knowing you did the right thing. It isn't because you have a plaque
 426 or anything else.
 427 **JG:** You're trying to help the environment.
 428 **GT:** And I'll tell you, for me it's getting harder and harder not to have a sustainable
 429 design project on the boards, cause for just doing the right things, inherently,
 430 whether we're known for certification or not, which is the best goal to come out of
 431 this.

432 **JD: Well you mentioned that you (Gerry Tully) and Travis are the LEED APs.**
 433 **If SITES were to have a certification process for individuals, which they're**
 434 **talking about, would you pursue that?**

435 **GT:** If I could pay a modest fee and take one brain-numbing test, probably.
 436 **TP:** Which is what happened with LEED. That used to mean something and now
 437 LEED AP doesn't mean anything.
 438 **GT:** I mean I came out of that test thinking, 'That was the worst testing experience
 439 of my life.' Thank god I passed, because if I hadn't I wouldn't have gone back.
 440 **JG;** He's not a civil engineer. [talking about Gerry] He didn't take the PE
 441 [Professional Engineer exam].
 442 **TP:** I think the reason was worse it [speaking about LEED versus the PE] was
 443 because there was so much grey area in there.
 444 **JG:** Yeah
 445 **GT:** You know, you go in and you'd have 75 questions and you can mark the ones
 446 you want to go back to. After my first pass, I had 58 still marked of 'I'm not quite
 447 sure.' And I got a relatively high score when I was done and I still wasn't sure.
 448 **JE:** Sounds like the ESUP.
 449 **GT:** Yeah, I've got to take that one next year or this year.
 450 **JE:** Its, its, yeah, there'll be maybe 3 questions on the entire test where you're like,
 451 'Oh yeah I knew that answer.'
 452 **GT:** The rest will be like, 'Yeah I think this is it.'

453 **JD: So we talked about some of the things that presented difficulty as far as**
 454 **SITES goes. Was there anything you thought that was really well done that**
 455 **you would commend them for that you thought contributed positively to the**

456 **project in terms of sustainability that you might not have seen in LEED or**
457 **elsewhere?**

458 **TP:** Well the whole idea of SITES has been needed for a long time. Just the fact
459 that they exist is good.

460 **GT:** Yeah.

461 **JE:** Yeah.

462 **GT:** The intent is good.

463 **TP:** From day one when we got LEED certified, when we very first found out
464 about it, and we were told you know, company-wide, we encourage you to get
465 LEED certified, we looked at it and said, 'Here I am memorizing, I know all these
466 facts about heating and cooling and lighting, and fixtures, how many times do guys
467 go to the bathroom, you know, in a day on average and how many times do they
468 use the urinal over the toilet.' It's like, this doesn't work for me. That's not what I
469 do. I do stormwater. I do stuff outside. And so and that fit into LEED a little bit, but
470 we were such an afterthought on it, 'Oh by the way, maybe take care of stormwater
471 and if you do, we'll throw you a bone.' But this really fits what we do a lot.

472 **GT:** Even the LEED neighborhood design doesn't really focus on a site level
473 quality project.

474 **JG:** I think that LEED, you know, even the things that area included in LEED for
475 site civil points are not always even up to industry standard requirements, you
476 know. They're not really very restrictive at all from a SITES standpoint. You have
477 to have a slip. Ok.

478 **TP:** Did you avoid wetlands? Well I had to. Yeah.

479 **JG:** I was thinking that, is your post construction runoff the same as your
480 preconstruction runoff?

481 **TP:** It has to be.

482 **JG:** There's nothing that's above, really not much. There's nothing....

483 **TP:** There's no innovation I guess is there.

484 **GT:** Well the goal is to get you to apply for that plaque which is you know
485 thousands of dollars.

486 **VL:** Well one night we helped to design Legacy Park for the first time and there
487 were a lot of things we had to do because of the wetland issue, so it seems like
488 there are things that are there but it sounds like you could probably swing it
489 towards the site idea rather than strictly wetlands, which I know is a separate thing,
490 but, you know for instance, we had to design all of our swales to have grass and it
491 was natural filtration, and runoff, yea, where it seemed that this would be just the
492 same kind of deal.

493 **TP:** Yeah, the need for process is much more restrictive than industry specific. I
494 like that.

495 **JG:** I think maybe that the need for process of, for federally funded projects is
496 much more restrictive than anything we saw on SITES or LEED for sure. SITES
497 maybe makes you think outside the box a little bit more, which I think is a good
498 thing.

499 **GT:** Well, you know, I can tell you when you're designing for the landscape and
500 you've got in your mind, ok where are they sourcing this from, you have to make
501 right choices to begin with, but are you making the right choices for a design
502 aesthetics or are you making the right choices for meeting the sourcing
503 requirement. And I think right now because it's so limited, you're really starting to
504 pull from, ok I think I can get that one, I'm going to use a lot of that, whereas
505 maybe you didn't want to, but you have to.

506 **JD:** Were there any, we talked about things that presented difficulty and

507 **things that were good. Were there any areas you would say they absolutely**
508 **need to revise or revisit?**

509 **GT:** Soils. And stormwater... What else?

510 **JE:** We probably need to revisit most of it at least a little bit. There are probably
511 way to make it....

512 **GT:** I agree with Janelle that, really from this pilot project they need to step back
513 and hold nothing as sacred and say, you know, where can we make it better and
514 more meaningful. Because I think the goal is to encourage people to use it, not
515 avoid it. I can tell you right now, the military, yeah they say, everything has to be
516 LEED silver minimum, and they're going up to LEED gold, but 'Oh by the way,
517 you don't have to be certified.' So what happens on the average military project -
518 Brooke and I will write a LEED point opinion paper where we go through each of
519 the credits and we say why we think we would've gotten this and we submit that to
520 the base commander who gives it to the base engineer who signs off on it. 'It
521 sounds good to me,' but they don't pay LEED to get the certification. They make
522 the argument, 'Well, a lot of what we do is secret, so we can't just be sending the
523 details out.' But really it's they don't want to pay the fee.

524 **JD: And how would, as far as SITES fees, do you feel those were reasonable,**
525 **what you've seen so far?**

526 **JE:** I don't even remember how much it was.

527 **GT:** \$5000.

528 **JE:** \$5,000? Is that all we have to pay?

529 **GT:** Pretty much. Yeah.... At this point, yeah, you see it is a post construction
530 certification, so you pay your fee upfront then you wait and see if you get it. I can
531 tell you Grand County, they didn't want to pay. And they only had to pay half with
532 Moab paying the other half. And Moab wasn't going to put up their half unless
533 Grand County put up their half. And you know we're stuck in the middle. Someone
534 said, 'Well why don't you pay it and we'll reimburse you?' And I said, 'I'm on a
535 conference call guys, I'm already hearing you arguing you don't want to pay, why
536 would I advance the money.'

537 **VL:** I mean just from what you were able to get grant wise it sounds like...

538 **JE:** Yeah, I don't think it was that big a deal.

539 **JD: So compared to LEED, it seems like a reasonable alternative?**

540 **GT:** Oh yeah. \$5,000 may be a little high, but I recognize it's a pilot program and
541 they have more expenses than they normally would have. ...

542 **TP:** A little sweat equity into all of our concerns.

543 **GT:** I think if they had it based on the type of project, size of project, sliding scale.
544 I mean a small park in Moab versus a smaller site for UTA versus somebody
545 putting in a project the size of Daybreak, there should be a sliding scale.

546 **TP:** Yeah, I would agree.

547 **JD: So do you see it as more of a complement to something like LEED or an**
548 **alternative to LEED basically?**

549 **JE:** I think it's a compliment. It's like Travis said, it just focuses more on the site as
550 an entity in and of itself rather than as a component of the building they're trying to
551 get certified.

552 **GT:** I'd say at this point, I wouldn't call it an alternative to LEED only because

553 LEED is well known, for good or bad, it doesn't matter, it's well known, where as
 554 we say, 'Oh, this was a sustainable sites initiative project,'.. I get the same look my
 555 dog gives me when I talk to the dog. You know the head turns
 556 sideways.....[jokingly]

557 **TP:** You know, we drew up proposals and we spent a page talking about what it is
 558 and encouraged them to find out what it is.

559 **JD:** Yeah, I've certainly come up against that as well.

560 **GT:** So it's definitely not an alternative at this point because it just doesn't have the
 561 name recognition.

562 **TP:** You know, there's nothing for a park. You can't get LEED certified on a park
 563 because there just isn't enough points to be had. And this gives you at least some to
 564 measure by rather than...It fills in a void.

565 **GT:** And take what you do, take away from TRAX [UTA light rail] now and to the
 566 BRT [Bus Rapid Transit], if you're doing a bus stop or you know a transit point or
 567 a park-n-ride, you're never going to get LEED.

568 **TP:** Of course not. LEED isn't set up to do that.

569 **GT:** It's almost in the preamble of LEED that if you're building a parking lot, don't
 570 talk to us. And yet if it's a needed infrastructure in our fabric, why shouldn't it get
 571 recognized for doing the right thing? We're building parking lots to take people off
 572 the road, not put them on.

573 **JD:** Yeah.

574 **JD: So how would you evaluate the overall cost benefit analysis of the doing**
 575 **sites for the Orem Intermodal Center? Has it been a good decision to pursue**
 576 **it? Has it paid off thus far or has it been more trouble than it's worth?**

577 **JE:** I think that will depend on if we ultimately really save on maintenance costs
 578 and if the swales really work.

579 **GT:** Well, take a step back. I mean, just look at how much funding do you think
 580 you would have gotten if you hadn't done SITES?

581 **JE:** Who knows? And I only got 1.6. [million, speaking of total project's budget]

582 **JG:** In a cost-benefit analysis, I don't think you can take into account whether or
 583 not you got federal funds.

584 **GT:** Really?

585 **JE:** I wouldn't say that because that cause still doesn't change the overall cost of
 586 the project. You know what I mean?

587 **JG:** Yeah, you're right.

588 **JE:** Whether the federal government gave us that money or...

589 **TP:** That benefit is going to go away eventually once everybody gets on board and
 590 figures out SITES and everybody....

591 **GT:** I think it's just what the investment in SITES costs, which I don't know what
 592 that, have we put together that number, do we know what that number is?

593 **TP:** We know what you paid us and we know what we paid them and we
 594 anticipated a cost for the contractor. We anticipated a cost there. But we have yet
 595 to sit down with him and say, 'What would your bid have been?' And then they
 596 need to take that whole, you know, that much money that those three or four things
 597 and then look at the savings over the long-term.

598 **GT:** And you know, I don't even know that you can really count the savings over
 599 the long-term because you're never really going to quantify that. But if you take the
 600 cost back it out of the total project costs and then take it as the percent of the
 601 residual, you'll know what you added back on the top of it.

602 **TP:** And that's going to be really small. We had a fairly large project in Orem and
 603 in Provo, and the amount that we've added is a percent or two.

604 **JE:** Yeah, I would agree and so you can come up with the long term saving for
605 things like LED lights.

606 **TP:** Right, but then you also need to look, you know, at public, what good PR
607 [public relations] have we bought with the cities when we've done this, or what
608 about the traveling public?

609 **JE:** It's hard to put a dollar value on it, but there definitely is value.

610 **JG:** And the deferred costs of, okay if we have drainage that works the way its
611 intended in the swales, if we hadn't done that, would we be creating further
612 problems downstream, would there be long-term maintenance costs? It's hard to
613 quantify those benefits, but they're there.

614 **GT:** SITES is working on trying to do something like that aren't they, I remember
615 them talking about it.

616 **JG:** In this case, In this particular ... the Orem Intermodal center, the city's...
617 basically the city's requirements are basically going to take...or the swales are
618 going to treat the water that runs off the parking lot, then the city's still making
619 them treat it before...[inaudible comment] anyway.

620 **TP:** So, we're getting double bonuses there, but...it's kind of uh...

621 **JE:** And just to be brutally honest, there's not a whole lot on both these projects
622 that we wouldn't have done anyway. There's a few things. There's a few things
623 that we pushed that we may not have done, um, but it's nice to, you know have
624 recognition that, hey, these were the right things to be doing and here's why.

625 **GT:** I see it as a short term negative, and this is not uncommon even outside of a
626 LEED or SITES project of, when you're trying to do the innovative thing that is a
627 benefit, but it is outside the city standard requirement, it takes twice as long to get
628 the approval for doing the right thing. If you want to go do the approved wrong
629 thing, you can do that tomorrow all day long.

630 **JE:** Right.

631 **TP:** It's true.

632 **JE:** Again I go back to the railroad site in Provo, they've got a standard, and just, it
633 makes sense because it was that way since 1903 or whenever it was, and they just
634 haven't looked at it again.

635 **GT:** And a good thing is we weren't trying to get through a fire marshal with
636 something that they didn't like, because you could've thrown another year into that
637 process.

638 **JD: So would you pursue SITES certification again in the future based on**
639 **your experience with this?**

640 **JE:** I think so. I don't think it was enough added work or so far out of our realm
641 that we wouldn't have done it anyway, of course we're only getting one star, so I
642 don't know if we would want to try to up the ante a little bit on the next ones, but...

643 **TP:** That's a good point. Yeah, I think what Janelle is saying is basically you know,
644 they're a one star firm almost already, it wasn't that big a leap to get us there...what
645 we're already doing.

646 **GT:** I think of the cost benefit to say, 'ok we would've had to add another 2% to
647 the cost of the project to get that second star', and what does that second star get us
648 except another star on the mantle. You know, is it a long-term cost benefit? Is it a
649 better funding alternative? That's an internal discussion you'll have to have.

650 **JE:** Right.

651 **TP:** And a lot of those things that we didn't do to get to that second star, I mean,
652 we did all of the low hanging fruit, we got the cheap, I don't want to say cheap.

653 **GT:** We went through the whole list.

654 **TP:** The things that we were already doing, so to get to that second star, it's not

655 going to be an incremental cost, it's going to be a, you know...exponential cost.
656 **GT:** We actually did a cost-benefit...
657 **TP:** For each one of them.
658 **GT:** And you know, analysis, ok we get to one star. If we want to go to two, and
659 we went through line by line saying, 'Oh, they'll never want to do that. That's
660 outside the realm of what UTA does as a mission.' I mean, is it your job to host
661 farmer's markets?
662 **JD:** Or to require contractors to operate low emissions, heavy equipment, things
663 like that, probably just aren't too practical. Perhaps in California...
664 **JE:** And not in a low bid environment. If we were doing a different kind of bidding
665 process, then maybe.

666 **JD: So just to wrap up, is there anything that you would recommend that they**
667 **add? Something that is just completely absent, or something that they might**
668 **have just missed. Any opportunities that SITES might have?**

669 **GT:** I don't know that I remember that there was a way to almost submit a narrative
670 of why you think maybe you should get an extra couple of points.
671 **TP:** There is. There are. There's some, I forgot what they called them.
672 **JD:** Points for innovation.
673 **GT:** I'm not talking about innovation though. I'm talking about selling the fact that
674 in our case, we're a transit hub, ok. We're not a glossy, downtown development.
675 We're a parking lot with transit and buses and everything else and make the point
676 that there's a wider green benefit to doing it. It's that taking cars off the road.
677 Cause we're not innovative. No one can say public transit is far enough down the
678 road that you can't say you're innovative for doing transit. And I think there needs
679 to be a category that is similar to innovative but it's more pushing the public
680 benefit.
681 **TP:** So maybe not starting all projects on the same level. Saying ok, you're doing a
682 transit project, you're starting up here.
683 **GT:** By definition you're doing the better thing.
684 **JD:** Or maybe even being able to put it into context, like you've mentioned
685 working with cities that had certain standards which weren't necessarily
686 sustainable, but if you came up and pushed them along, pushed them forward a
687 little bit...
688 **GT:** Moved the needle overall.
689 **TP:** Could that fall on the innovative though?
690 **JD:** I think maybe you could attempt that.
691 **TP:** Cause I don't know if we even...we talked about this ... we might want to
692 consider pushing on them.
693 **GT:** Yeah, that we actually raised the bar potentially in that city. The headaches we
694 had getting it through down there.
695 **JE:** It would be easier today I would say. I think if these turn out well, we need to
696 start doing it at all of our park-n-rides. I know all of my future ones I'm planning
697 now, I'm thinking...
698 **TP:** I don't know if we can say we're innovative because we convinced ourselves
699 to change our strategy....if we convinced ourselves that we had no skin in the game.
700 **GT:** Even without this sustainable sites designation on all your future stuff, UTA
701 when they see something that's good, you adopt it as, well let us do that from now
702 on.
703 **JE:** It's kind of like the irrigation system. We've just adopted it throughout the
704 system because it's a good thing.
705 **GT:** You know, and sometimes it takes those tough sites that takes you to move

705 into something new. Like who would ever thought that you'd be on a site in
 706 Midvale where you'd have to monitor the groundwater on your irrigation system,
 707 but once you see that there's a system out there that actually has long-term
 708 systematic benefits, why not do it?

709 **JD: That more or less wraps up the set of questions I had. I appreciate you**
 710 **guys helping me out with this? Is there anything else you want me to pass**
 711 **along to SITES, when I provide this feedback to them? Anything that I**
 712 **haven't covered?**

713 **JE:** Is this a formal feedback or is this more a result of school?

714 **JD:** I'm going to write up a report for my thesis, but then, and that'll be a thesis
 715 type report, but then I'll probably send something that's been written up just for
 716 SITES, tailored towards them, to give them feedback on the project.

717 **TP:** That wasn't something that was required by them?

718 **JD:** It's not. They actually don't have any formal participant feedback system, so
 719 that's why...

720 **TP:** Yeah, that's what I thought. Well maybe there's another....this pilot project. It
 721 seems like that would be very good to have them do a similar interview to each of
 722 the pilot projects and see well....

724 **JD:** And that's why it's a valid thesis topic too, on my end, is just because they
 725 actually don't have any system, so I'm providing something that at the least. I
 726 forwarded them these questions for comment and so they're aware that I'm doing
 727 this.

728 **GT:** I mean do they have, just nothing or what?

729 **JD:** Yes, basically.

730 **JD: That was one last question. For those of you that have dealt with SITES do**
 731 **you feel they've been pretty responsive when you've needed something from**
 732 **them?**

733 **TP:** I guess so. The only criticism is that it was difficult for more than one person
 734 to have the access, which I can understand from their point.

735 **GT:** When you call them, I got answers when I called them, but a lot of the answers
 736 were 'well keep this in mind, it's a pilot program. We want to know what you're
 737 running into.' In other words we don't have an answer because we're waiting to see
 738 what the question is. [expresses exasperation]

739 **JE:** Yeah.

740 **JD:** So if more than one person had access, that would have made it easier, like we
 741 transferred it from Sharon to you, Gerry.

742 **GT:** That was a process.

743 **JD:** Yeah, it took a while.

744 **GT:** Yeah.

745 **JE:** I was going to ask, was there a part of this, and some of this is just me not
 746 knowing enough about the details, that was kind of about the operation and
 747 function, as far as sustainability goes?

748 **TP:** You have to do an O&M manual for a lot of the points.

749 **GT:** Yeah.

750 **TP:** You got a draft set up for that?

751 **GT:** Yeah. And that was one where every time we ran into a question that were
 752 geared towards O&M, you know, we can't write this without asking UTAs
 753 operations people.

754 **TP:** Yeah, a lot of the O&M stuff was more related to just like making sure, ok we

755 painted the stalls with low VOC paint, next time you paint them you've got to do
756 the same thing, you can't....

757 **GT:** Just do it once...

758 **JE:** If we designed it in a way that was say, most efficient for the busses, puts the
759 least number of miles on them, or they're making right turns instead of left turns, or
760 they're...um, not, I don't mean they're not, you know, like ..rules and standards
761 that we've set up for that area that are part of our sustainability standards already,
762 and is there, I mean there's no points for trying to run a sustainable operation on the
763 site.

764 **GT:** Well there were credits geared towards mowing the lawn with electric lawn
765 mowers rather than gas, you know, lawn mowers.

766 **JE:** Ok.

767 **GT:** Well our design eliminated all the lawn. We don't have lawn mowers, so do
768 we get that point or not?

769 **TP:** I mean directly to your questions about, you know, how do you run the buses,
770 there wouldn't be anything specific to that because that's so specific to the site. I
771 mean that would only apply to....

772 **JE:** I mean, not only to just that kind of site, I mean, even a parking lot, the flow of
773 traffic, is that the most efficient flow of traffic to keep cars from idling the longest
774 amount of time in the area or making a left turn instead of a right turn. It might be
775 a suggestion for something else that would be considered sustainable.

776 **JD:** I think that would be something you might try under innovation.

777 **TP:** Innovative. Yeah, maybe throw that in. We throw this in our O&M manual, the
778 idling thing. I like that. We should probably put that in there.

779 **JE:** There's a lot of things in our sustainability that has to do with how we operate.

780 **JD:** I think they allow the space for that. I'll be curious to see how they grade that.
781 That's one thing that none of us know yet. I've heard complaints about LEED
782 before, is they just get so pedantic in the way that they approach, you know,
783 interpreting the applications, that it is sometimes, they get negative feedback on
784 that end of things, so how SITES is going to be with this, I guess we'll find out.

785 **JG:** I did go through it probably been a while since I did go through it. It seems like
786 they don't take into account much in the way of mitigation, as far as, even
787 wetlands, you know I mean, you could have a 500 acre site with an acre of
788 wetlands on it, and if you mitigate that from a low functioning wetland to a very
789 high functioning wetland that's ten times as big, you're setting aside 10 acres.
790 That's been proven over decades to be very effective mitigation. Probably you
791 ended up with a better situation when you're done, but you're not eligible for those
792 points.

793 **TP:** They basically say if you touch wetlands, you know....

794 **GT:** Yeah, you give them credit for avoiding them if you are lucky enough to have
795 them, which means you picked the wrong site to begin with, but you don't get
796 points for actually creating and enhancing them.

797 **TP:** Right.

798 **JG:** And the same thing is true for, you know, the runoff thing again, you know, I
799 mean, you could, cause, what we did, effectively....the effective runoff is the same,
800 I mean the result is the same as if we had the point. I mean we're still infiltrating
801 the same area but we changed the curve number so....

802 **TP:** We didn't change it...or we moved it out, we didn't move it down.

803 **JE:** Right.

804 **JG:** And so since we increased the curve number, we don't get that point even
805 though the net result is the same.

806 **TP:** And the impact to the environment is better. [emphatic]

807 **JG:** Right.

808 **JD:** Yeah, and I know looking at the couple projects, Orem and Provo, that we
809 worked on, that wetland thing was one that always, I've had a little difficult
810 because it's just...

811 **TP:** And it's not even, you don't get the point, it's...you're done.

812 **JD:** Yeah, you're not even eligible, and as you're saying, and especially on our
813 sites, the wetlands that were there, it's not like these were pristine, naturally
814 existing wetlands, it was...

815 **TP:** They were a ditch that was backed up. [emphatic]

816 **JD:** I wouldn't have considered it a wetland.

817 **JG:** And it's been mitigated into a much higher-functioning wetland.

818 **TP:** Well, the one that is a wetland.

819 **JG:** And that's part of the permitting process for wetlands is that you have two
820 functions of value assessment and depending on the quality of the wetland
821 mitigation, requirements change, and so, you know, I mean, their process is set up,
822 they're widely accepted and very effective. If you're going to hit a wetland, the
823 federal government is going to make you deal with that wetland and deal with it in
824 an appropriate manner that's effective, so I mean, it just seems like, to place a value
825 on avoidance when maybe you can get a better bang for your buck by not avoiding
826 it and improving the overall situation, is kind of a short-sighted way to look at it.

827 **JG:** Another question. Do they, once this project is finished, maybe Janelle hit on
828 this, does the SITES program want to monitor after it's built, to say 'Let's look at
829 this and see how its functioning,' or not? Are they just like, once you're done,
830 you're done.

831 **JD:** You can get points for follow-up, like if you proved that you're going to do
832 some long-term monitoring and provide them additional feedback, at this stage
833 they'll give you some points. Now do they require follow-up? Not necessarily.
834 Like a little bit of post-construction follow-up, like, i.e., like soils testing.

835 **GT:** Not three year, five year.

836 **JD:** Yeah, but you do have to have it written up in to the O&M that you're going to
837 follow-up. Now, do they check on that? Not necessarily.

838 **GT:** You have to know that if you do a monitoring program and then write it up in
839 a professional journal or submit it, you can get extra points, and we looked at those
840 and said, 'No, let's not marry UTA to some long-term, you know, professional
841 journal.' And we even talked about, you know, something that could write up a
842 report on Sustainable Sites, look at it a year from now and say, well, you know, it
843 hasn't really affected our cost of operations negatively, in fact, maybe it's better,
844 and submit it to, oh my mind just went blank. What's the trade group for... AFTA.
845 You know, we said, they have AFTA. They could just submit it for AFTA, either at
846 a conference or as a journal posting, but we didn't know who on your team we
847 were then kind of chaining them to this responsibility.

848 **TP:** That's true.

849 **JD:** Yeah, unless the one thing you could think of is a student who might have an
850 interest in doing something like that. That seemed to me to be the only scenario
851 where that would be really feasible to do that follow-up.

852 **GT:** Because we did say, well Janelle can show up at the APTA [American Public
853 Transportation Association] meeting in a year and a half and do a panel discussion.

854 **TP:** She's the only one of us that's guaranteed to have a job in a year and a half.
855 [joking]

856 **JG:** It just seems like if they could benefit, not UTA, but maybe SITES, to actually
857 say, you know in three years we're going to go out and monitor and see what we
858 could do to make this better. They could probably learn a lot from that.

859 **JD:** To see if their initial guidelines and benchmarks are actually achieving what
860 they're expected.

861 **JG:** Exactly, you're saying, 'Alright that didn't really work. Let's scrap that' and
862 let's, you know, try something different.

863 **GT:** But would that be a better function for SITES personnel themselves? To come
864 out and do maybe a post-audit interview with leaders of UTA, project people at
865 UTA...

866 **JG:** Maintenance people.

867 **GT:** ...and then they publish a case study.

868 **JE:** Right.

869 **VL:** ... have SITES do it...

870 **JD:** And they have something like that right now that's called the Case for
871 Sustainable Sites and they mention some paybacks and things like that. Yeah I
872 think it would shore up their arguments if they can provide metrics in three or five
873 years to show what they said would happen actually did or to show how they're
874 going to improve things that didn't work as well as they thought they would. At
875 their end not necessarily the....

876 **GT:** That is a big blemish right now on LEED. None of the LEED buildings are
877 performing anywhere near what the credits said they were going to do.

878 **JE:** Or say, I mean, we paint it with low-VOC paint and our shelters start rusting
879 out in a year and our maintenance people go and repaint them with whatever they
880 want. Cause they're going to be like, yeah it's just not worth it.

881 **JD:** And with things like striping, it was just going to require more effort to use the
882 low VOC stuff. [pause] Alright well thanks again everybody. I really appreciate it.
883 There's a chance I may have one or two just small follow-up questions after I look
884 at my notes, but it really shouldn't be too much more and I really appreciate your
885 help on this. Let me know if there's anything else you want me to pass on the
886 SITES folks.