Daybreak Parkway Intersection Re-Alignment and Restriping

South Jordan, Utah

Introduction/Background Information

Rio Tinto Kennecott has a strong commitment to sustainable development, and Daybreak showcases this commitment. A portion of the Daybreak property had once been impacted by historic mining activities, which led to a period of unprecedented remediation, restoration and reclamation through the mid-2000s.Daybreak is now a sustainably developed community that balances the social, environmental and economic needs of residents and local businesses. It's a place where important elements of life have been combined to allow residents to live, work, play and learn in a walkable, vibrant community that provides transportation options and integrates intelligent community design choices. Daybreak is the largest master-planned community in Utah, with 20,000 residential units planned at full build-out.

(Source: http://www.kennecott.com/daybreak)

Project Description

This project involves a new roadway alignment that comes from the south through Herriman City and connects to Daybreak Parkway in South Jordan City (5400 West and 11800 North). It crosses Kennecott property and the goal is to minimize the impact of the right of way on our property to maximize the developable area. The design team will develop concepts for the different intersection configurations as well as some preliminary design work for signal layouts.

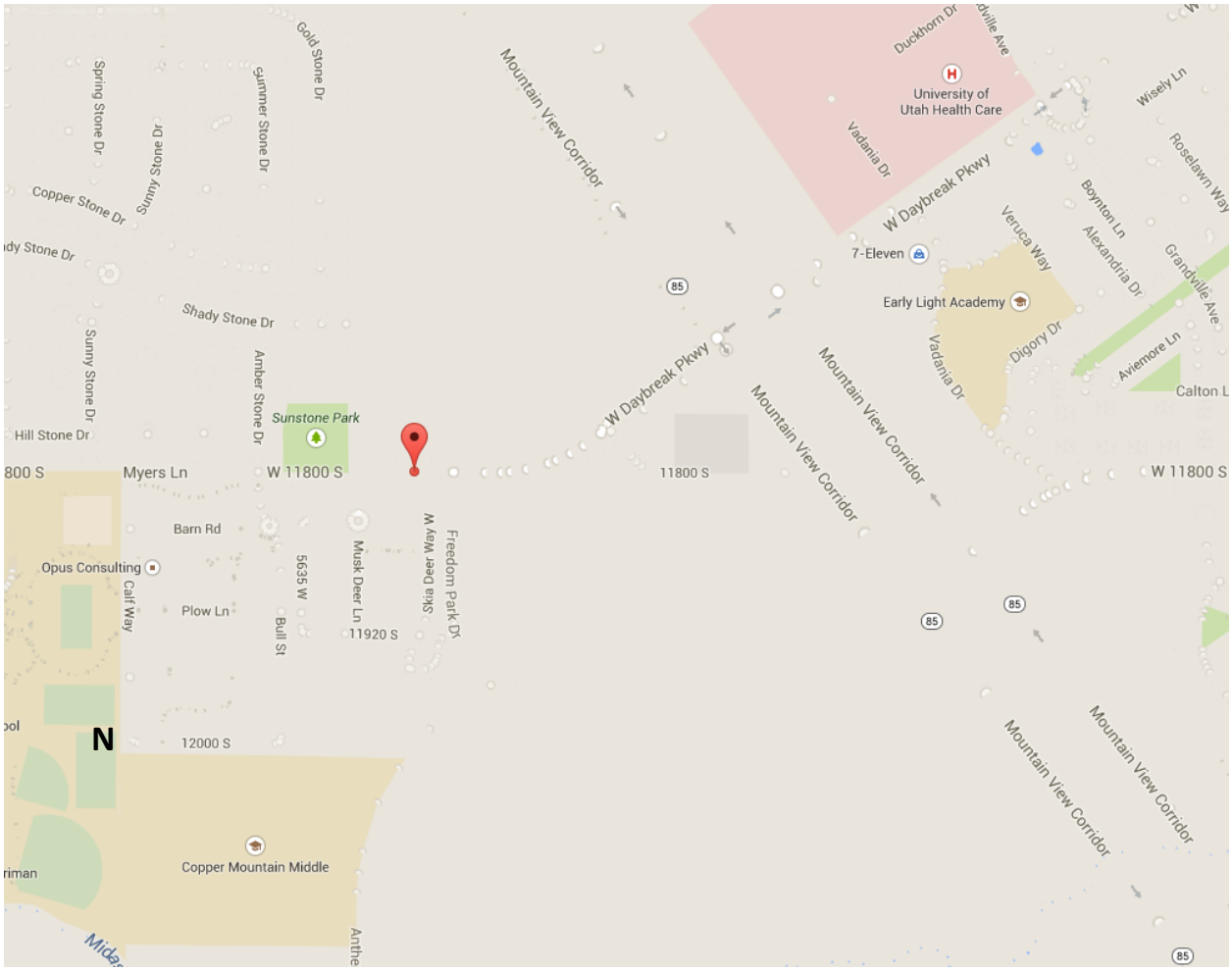

Figure 1: Project Location map showing intersection of Herriman City and Daybreak Parkway

(5400 West 11800 North, Daybreak, Utah)

The design will propose different strategies for:

- turning movements
- signing and striping
- signal options for the intersection and
- how to get pedestrians through the area safely, ie crosswalks, ada ramps, etc. (**Note**: There are some utilities that may need to be relocated in the area and must be taken into consideration in the design)

Scope of work

Students are required to provide concepts for the different intersection configurations as well as some preliminary design work for signal layouts. All of this work will then require cost estimates and engineer's estimates for the work to be completed. Depending on the time available to students we may choose to take the designs to a further level.

At a minimum, a recommendation from the students on which option they believe is the most appropriate considering all of the constraints is desired.

The sponsor can make CAD drawings of the area available. There is also a traffic study done by a consultant for South Jordan City. The report is about 2 years old but the data is still valid. There may be other forms of data that will become available through the course of the project.

Site visits

A site visit and meeting with the sponsor is recommended.

Outcome and Performance Standards

"Teams will provide the work "as is" meaning that there is no engineering stamp certifying the work."

Note: The ability to continue receiving support from outside sponsors is somewhat contingent on the good work you do. You represent the BYU Civil & Environmental Engineering Department. The expectation is that you will interact in a professional manner at all times with your mentor and project sponsor, treating them with the utmost respect and consideration of their busy schedules. While successful completion of the design project is fundamental to the outcome of the work, it is expected that you will also learn important team dynamics and leadership principles. This means that in the process of completing the project you are also seeking to help each member of your design team to grow and develop confidence in his/her engineering abilities.

Deliverables

The deliverables are:

Technical Drawing of Intersection

Construction Schedule

Cost Analysis

A final report with design alternatives for the project that include economic and environmental considerations.

A poster reflecting a summary of your design project.

A presentation summarizing your design project.

Other requirements from the sponsor.

All deliverables are due Friday April 3.

During the week of April 3rd both a presentation to sponsors and poster session for students, faculty and other interested people will be organized.

Term of Contract

Undergraduate students are to work during Winter semester, **eight hours/week/student** with at least 3 hours working together. Any class time or time spent on class assignments counts towards the eight hours.

Payments, Incentives, and Penalties

Much of the capstone work is graded by graduate student mentors, that include evaluations of the following components:

Team process (how well you work together to accomplish the goals)

Project proposal

Project Management Plan (PMP)

50% complete status report

Final report, poster, and presentation

Overall satisfaction of the client in meeting specific deliverables

Contractual Terms and Conditions

There will be no monetary compensation with respect to the work completed, and all work is completed and delivered on a "best effort" basis.

Note: Each member of the undergraduate team will be asked to sign a non-disclosure agreement that simply states the work you do belongs to the project sponsor.

Evaluation and Award Process

The proposal will be evaluated by 3 graduate students blindly, and the average of their scores will be the grade you are given on the proposal and used for granting awards where there is competition. Below is the rubric on which proposal scores will be based.

Timeliness - 1 pt off per full hour late, up to 5.	5
Grammar/Spelling - 1 pt off per blatant error, up to 10.	10
Cover Page - Title, Data, Sponsor, Team Name, Team Members, Department of Civil & Environmental Engineering, Ira A. Fulton College of Engineering and Technology, Brigham Young University - 1 pt per piece of information included.	8
Cover Letter - brief letter of introduction that 1) states your intent to propose and 2) how you may be contact - 4 pts per piece completed.	8
Executive Summary (3/4 to 1 page that summarizes the contents of your proposal) - 7 points for completion, helpfulness - 3 pts max.	10
Team Abilities (Adjust the SOQ to make it relevant to the project) - Summary AS A TEAM of 1) relevant courses and experience, and 3) abilities to complete the work on time and in a professional manner, 4) including use of specific engineering tools/software. Include résumés. 2 pts for including résumés, 6 more points max, 2 per piece completed.	8
Key Personnel - 1) Identify which individuals will focus on which pieces of your potential tasks, and 2) some kind of organizational chart or visual describing how you will work together as a team. 5pts max per piece.	10
Project Understanding - 1) Did they address specific items mentioned in the RFP? 2) Do they repeat basic background in somewhat new terms to *demonstrate their understanding* of the project? 3) Do they mention key deliverables they may need to provide? 4) Did they articulate a *specific* approach for developing design alternatives and deliverables? 4 pts max per piece.	16
Formatting - Does it look professional? Consistent? Yes or no, 5 pts each.	10
Concise vs. Wordy, Meaningful vs. Fluffy, repetitive wording. 8 pts means concise, and accurate, and specific. 1 pt means often confusing, wordy, or vague.	8
Clear and professional flow of writing and style. 7 pts means that you would feel comfortable handing this in if it were your own; it is easy to read and understand; feels professional; 1 pt means it feels like it was cut-pasted, rushed, and done with little thought; hard to read; feels like a high school essay.	7

Video Interview - Message is clear and consistent with proposal, each member participates, professional but catches your attention. Leniency on video/audio quality will be given with a focus on the content and overall organization.	20
Total	120

Process Schedule

- October 21, 4:00 pm - Request for Proposals will be available online: http://cecapstone.groups.et.byu.net/content/winter-2015-projects

- October 27, 4:50 pm - Question and Answer period with respect to the proposal and submission procedures. The period where you can register your intent to propose on a project will begin. Each team will need to identify the primary target of their proposal and three other alternatives (no proposal necessary). Public knowledge of an intent to propose should help distribute proposals more evenly.

- *November 17, 4:00 pm - Three copies of the proposal must be submitted at the beginning of class. Team video interviews should be made available online or on disc and referenced in the proposal.

- December 1 - Award notification.

*The review committee reserves the right to reject any proposal or presentation that is not submitted in a timely fashion or in accordance with the instructions given in this RFP.

Contacts

Sponsor Contact:

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Submittal Requirements for the proposal

Turn in three copies of the proposal that should include

- Cover letter
- Executive summary, 1 page or less (by itself)
- Work plan that outlines the approach to solving the problem, how the team will work together (including weekly work schedule that shows the hours each team member will work and the time block the team will be together, this is a necessary requirement).
- Necessary tools, data, equipment, etc. A couple of paragraphs or a bullet list with one sentence explanation for each item.
- Schedule indicating important milestones.
- Engineering Design Budget. This is an estimate of the design phase cost.
- Outcome and Performance Standards. Provide the following statement: “Teams will provide the work "as is" meaning that there is no engineering stamp certifying the work.”
- Statement of qualifications that outlines the background, experience, education, and organizational structure of the team. Include some discussion of how you plan to become a "high functioning" team in the course of completing the project.
- Outside consultants (professors or others) that are necessary to “make this work.”

Appendices:

Appendix A: 1 page resume for each member of the team

Appendix B: (if necessary)