

HIGHWAY 65 MITIGATION DESIGN Project 5C

Introduction

This project focuses on the conceptual design of mitigation sites. You will work on the Engeldinger Marsh site in Polk & Jasper Counties and interact with practicing ecologists and biologists from inside and outside of the University.

Learning Outcomes

After completing this project assignment, you should be able to do the following:

- Understand and discuss various mitigation strategies
- Conceptually understand the decision making process used in the Highway 65 re-alignment.
- Apply soils, photo interpretation, and NWI data in conceptual impact assessment
- Develop conceptual mitigation plans.
- Understand the complexity of mitigation design
- Demonstrate your ability to minimize negative environmental impacts in your design

Assignment

1. Create a base map for the site. Use the largest scale possible that will fit on a 30 x 40 sheet. Include the five-foot contours on the base map (to the best of your ability). Interpolate 2-foot contours.
2. Further develop your design program, including specific goals, objectives for people and non-human species. Include discussions with Dr. Jim Miller.
3. Everyone must provide for 1 additional acre of wetland and 5 additional acres of prairie onsite, as part of the mitigation.
4. Develop alternative conceptual mitigation designs to meet your objectives.
5. Present initial concepts to peers and guests and obtain input for improvement.
6. Prepare final conceptual mitigation plan, including the following elements:
 - Identify plant material zones for the entire mitigation design site with sample species; further characterize plant materials you intend with narrative descriptions.
 - Contours shown at 5-foot intervals, including the grading you include as part of your design.
 - (Minimum) One annotated cross-section through your site-illustrating key points.
 - Drainage diagram showing existing and proposed drainage patterns
 - North arrow, scale, sheet borders, name, etc...
 - Summary Table with quantities of landscape change as discussed in class
7. Present 90% complete plans to peers and outside reviewers
8. Complete final concept plans to outside reviewers.

Schedule

Monday, March 8

- Complete impact maps for site + context
- Project introduction

Wednesday, March 10

- Base maps completed at beginning of class;
- Site visit and preliminary site inventory

Friday, March 12

- Further develop restoration objectives for your individual site; review with Dr. Jim Miller to assess ecological issues;
- Begin developing conceptual plan alternatives in class
- Pin-ups by section beginning at 4:00pm

Monday, March 22

- Scott Marler, IDOT wetlands ecologist makes presentation
- Class discussion
- Desk reviews

Wednesday, March 24

- Desk reviews
- 3-D conceptual model due at 3:00pm

Friday, March 26

- Loren Lown (Polk County Conservation Board) presents at 1:10 pm;
- Present 90% complete plans to peers and outside reviewers, including summary data table as developed in class

Monday March 29th

- Final, color-rendered mitigation plans beginning at 1:10.

Grading Criteria—this project is worth a total of 60% of your grade for Project 5.

Criteria for final evaluation of this project include the amount of effort put into the design, the quality of the final design in meeting your objectives and the minimum requirements for additional wetland and prairie areas, your ability to minimize (and reduce) impacts associated with your design, quality of the graphics, and your attendance and participation in class.