

IPRO 307 Intermodal Container Transport System Solutions for Chicago Region

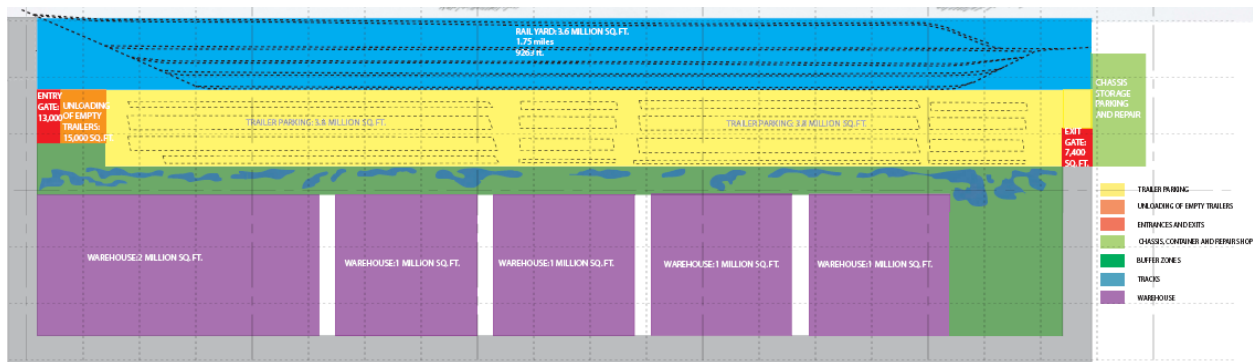
Objective: “Community Impacts” is a highly visible issue in building new Intermodal Facilities. Two major improvement efforts were undertaken: 1) find environmentally positive solutions to lessen overall effects; 2) reduce current complaints, specifically noise and traffic.. The objective of this IPRO was to design for general and site specific settings and provide a way to circulate these suggestions to interested parties.

Basic Organization and Tasks: IPRO 307 delegated tasks to individuals or groups of two, maximum. Each person also worked on a section of the IPRO deliverables to split the tasks evenly. Team meetings were run and recorded by indexing the roles.

Accomplishments:

- A recommended, environmentally friendly intermodal design. This design includes a grid structure and quantifiable layout.

Recommended Design of an Intermodal Yard



- A zero-excavation warehouse with energy reducing features. These features consist of wind power, skylights, and light sensors to reduce use of lights in the warehouse.
- The design of a bridge that acts as both a highway and a pedestrian friendly walkway. The bridge is a concept-based design and uniquely two sided.

- Specifying specific on-site environmental implementations. These included improvement opportunities in water retention, and ongoing improvements in air quality based on implementation of legislated standards and technologies.

Critical barriers and obstacles: There were a few obstacles encountered by members of IPRO 307. One hindrance encountered by the members was doing research in unfamiliar areas. Another obstacle came in determining the different regulations for each environmental subject, and area. Also, design is based off of equations and best practices; none of the current team members have the proper certification to make construction determinations.

Conclusion: Taking a different route from previous IPRO307 teams, this semester set the groundwork for future developments of environmentally friendly intermodal yards. The IPRO has successfully investigated areas for improvement, but there is still work to be done in other intermodal areas.

Recommendations: Future members of IPRO 307 will need to use the research and work from this semester and build on it to refine the intermodal facility design process. They will need to investigate more into alternate and community energy including solar power, as this was looked into for the warehouse design but not included. Dynamic braking was also researched, but due to lack of information in the time frame, could not be fully implemented. While a build out was done, a specific brown site design still needs to be attempted. Finally, more research needs to be done on warehouse design as to make the most effective building.

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