IPRO 307

Intermodal Solutions

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Intermodal Yards

- Intermodal freight is the fastest growing segment of US freight industry
- Most utilized way to transport shipments
- Chicago is the third largest intermodal freight hub in the world
- Has 19 intermodal yards with 700 miles of loading and unloading tracks
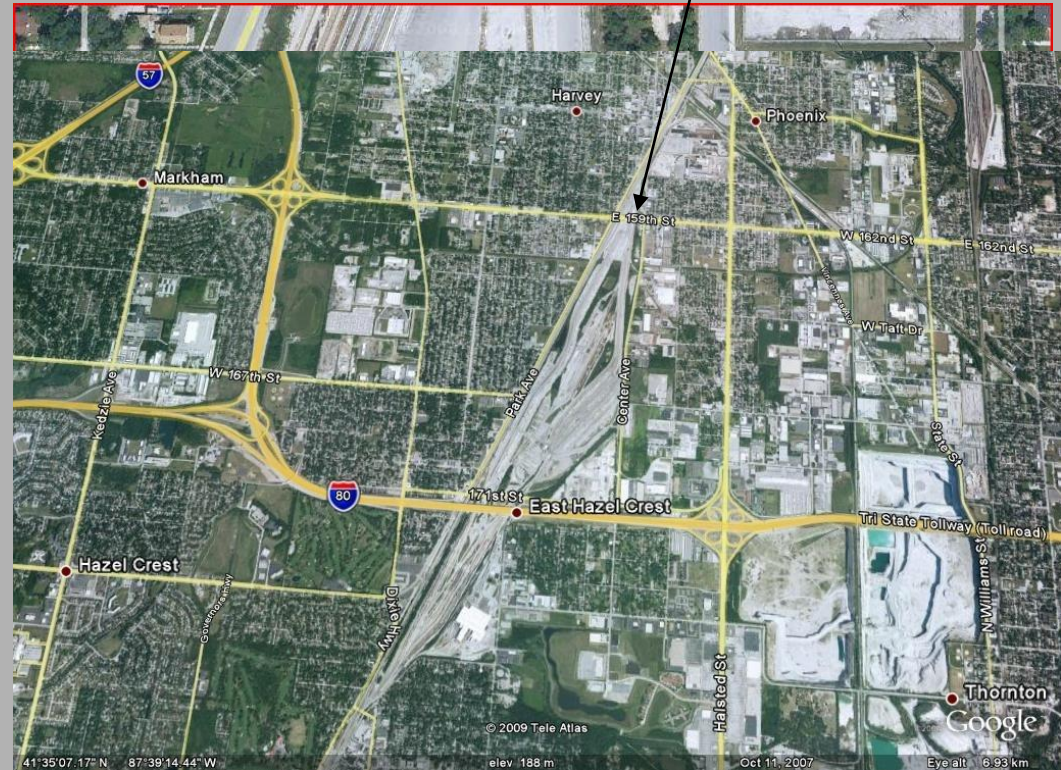
The Issue

- Intermodal yards often waste space
- Cause influx of traffic into surrounding area
- Intermodal freight is expected to double in 10 years
- Need to optimize performance with low cost and positive environmental benefits.
- Efficiency is how easily accessible intermodal yards are

Harvey Intermodal Yard

- Intermodal yard at Harvey, IL
- Off of Interstate 80/294
- Mi-Jack Products based in Hazel Crest, IL
- Create products that increase efficiency of intermodal yards
- Would benefit from proposals on improving accessibility to intermodal yard
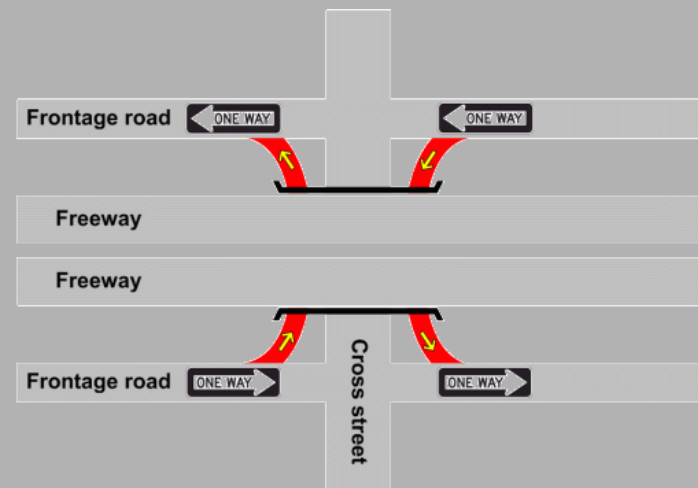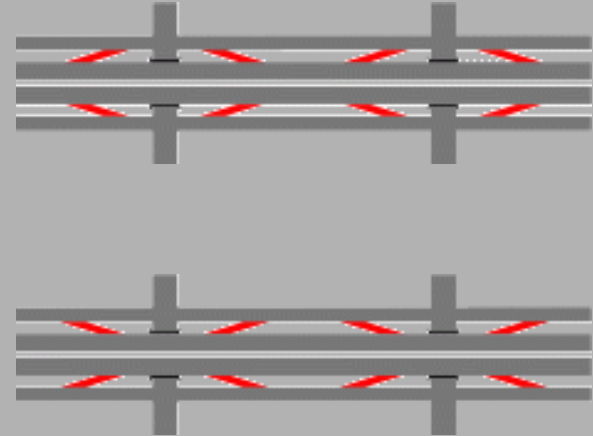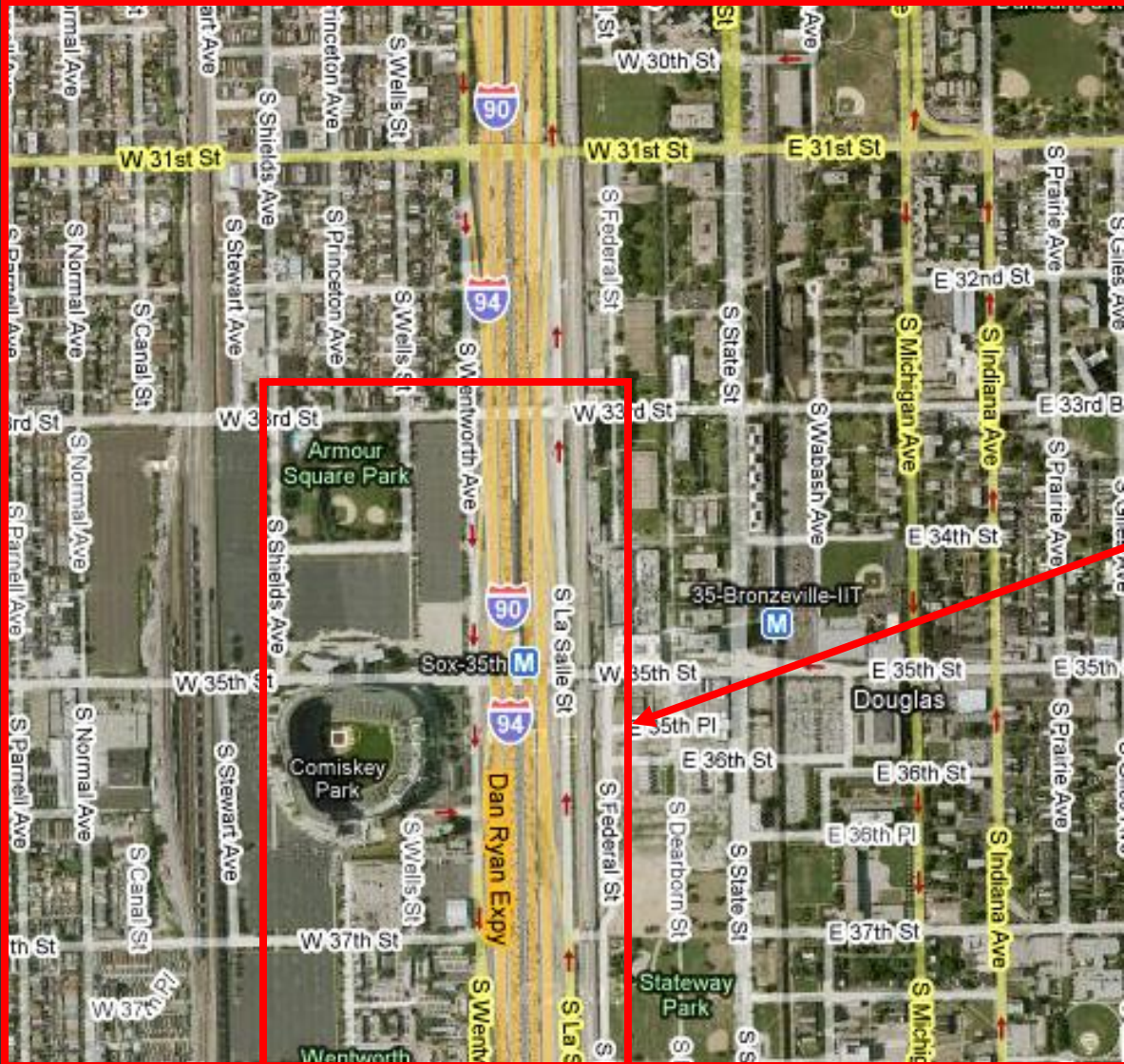
Team Organization

- Yard Design
  - Design method of increasing accessibility to intermodal yard
  - Create 3D walkthrough of project

- Community Impact
  - Research large-scale impact project will have on surrounding region
  - Understand zoning laws and environmental impact on community

Frontage Roads

- What is a frontage road?
- Types
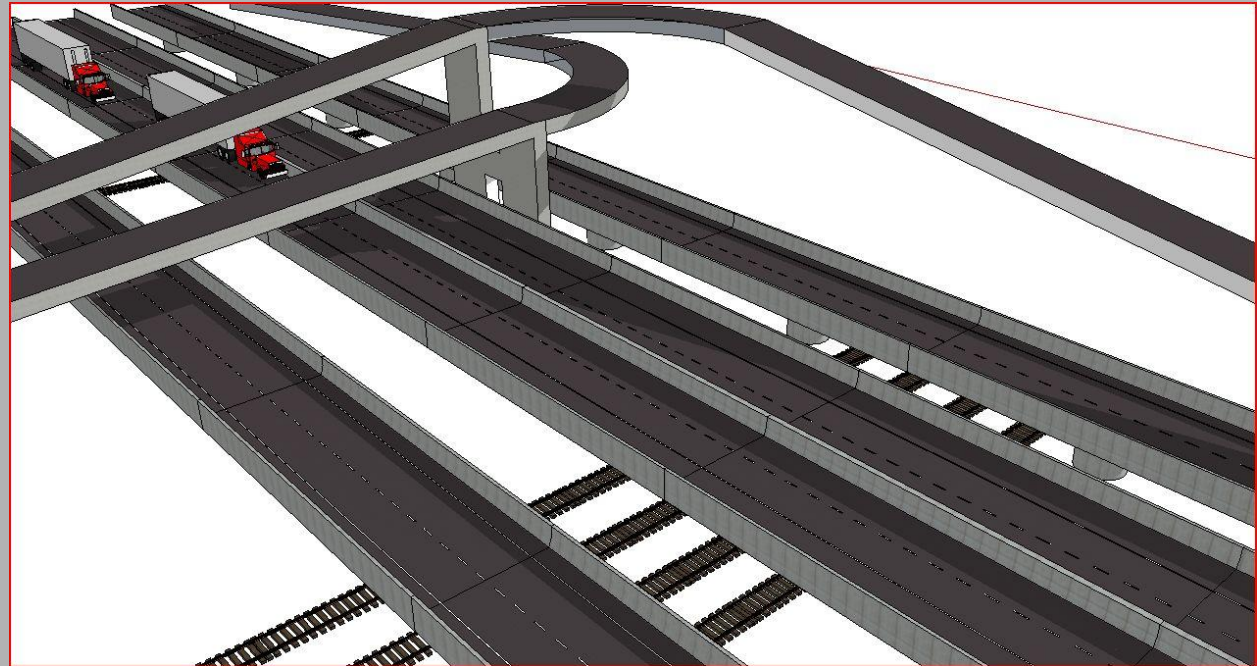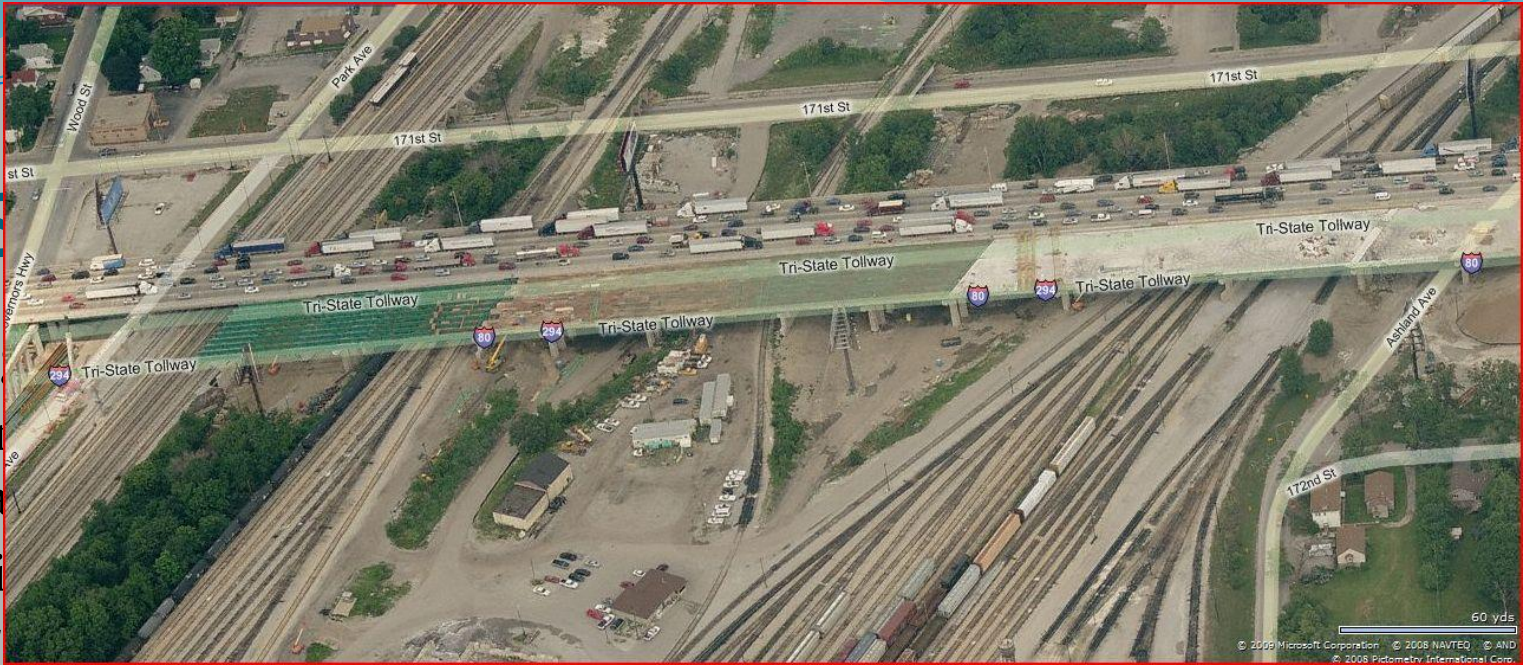- Turnarounds
- Benefits
- Cons

The photo below shows the frontage road system that runs alongside the Dan Ryan highway in Chicago, IL.

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Noise

- Noise Pollution - Ethics

- Noise relates to traffic speed and vehicle type.

- Residential areas - 525 ft from the highway.

- Industry - 150 ft from the highway.
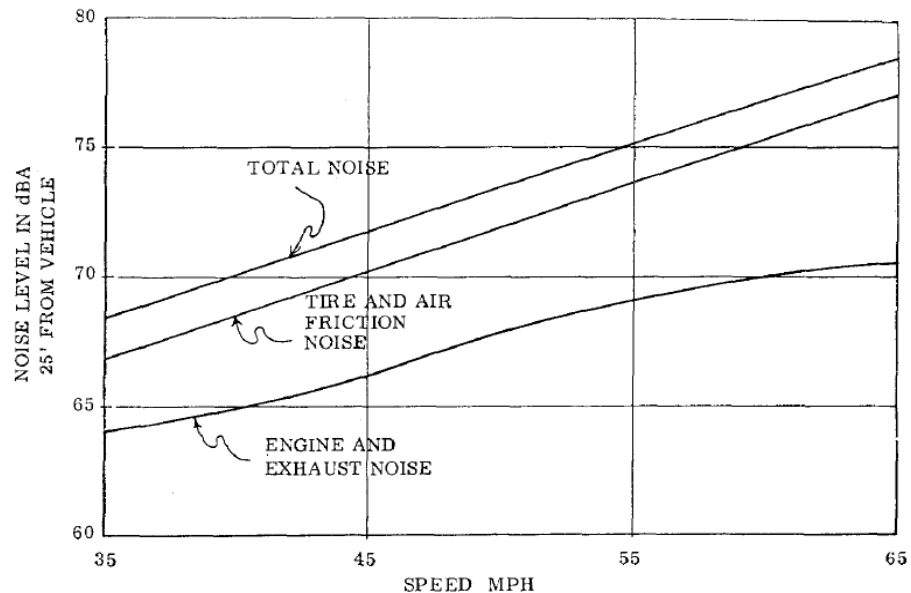
Noise (single car) vs. Speed (MPH)

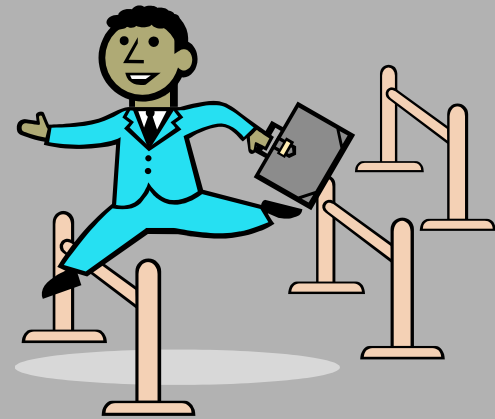Fig. 1. Components of automobile noise.

Zoning

- Zoning is the designating of land use.
- Industrial, residential, commercial, and agricultural areas are separated into zones to ensure that new development doesn't interfere with the existing use of an area.
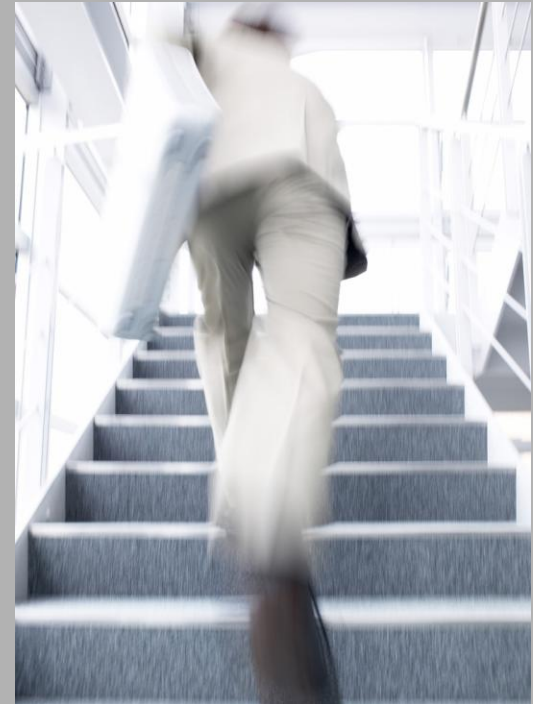
Overcoming Obstacles

- Software Learning Curves
  - AutoCAD intensive project
  - Google Earth and SketchUp
  - GIS

- Making Sure to be working in parallel rather than sequentially
  - Working on highway design and yard layout

Future Steps

- 3D Scale Model of Highway
  - New frontage roads
  - Highway layout into the yard

- Design in Google Earth and/or Arc GIS
  - Detailed Mapping of Intermodal Yard
  - New yard design to accommodate highway offramps
  - Improved truck flow within yards

Thank You! Questions?