The I-80 / I-380 Interchange Reconstruction
3D Visualization Project

Collaboration Team

Visualization In Community Outreach

- Public Concerns
- Innovative Design
- Meaningful Questions

I80/I380 Visualization Project Overview

Reconstruction of the Cloverleaf Interchange to a Turbine Interchange

I80/I380 Visualization Project Overview

Existing Cloverleaf Configuration
Design vs. 3D Visualization

- Advancements In Technology
- 2D & 3D Information
- Coordination & Prioritization

Visualization Software Workflow

- No one size fits all
- Combination is key
  - Base Model
    - SketchUp
    - OpenRoads
  - 2D/3D Graphics
    - Photoshop
    - PremierePro
  - Rendering
    - LumenRT

What Makes Up The Model

Overlapping TIN files
Triangles

Blending The Models

Customizing The Model

- Additional Design Elements
  - Guardrail
  - Traffic Signs
  - Lighting
  - Surrounding Buildings
- Upgrading 2D information
Customizing The Model & Adding Context

Adding Details
- Bentley, TIN Files, OpenRoads, LumenRT
- SketchUp

Visualization Solutions
- Top Left: overview of lanes
- Top Right: view from inside black car
- Bottom Right: view from inside purple car

Drive Through Animation
- Des Moines To Cedar Rapids

Common Oversized Vehicle
- Special Transport Vehicle
Creative Applications of Technology

Traffic Animation

- Simulation
- Vehicle type by volume
- VISSIM
- Transmodeler

Traffic Animation Model

Drive Through Video

Creative Applications of Technology

What can we do with a 3D visualization model - before & after

Creative Applications of Technology

What can we do with a 3D visualization model - high level staging video

Creative Applications of Technology

What can we do with a 3D visualization model - virtual reality
Lessons Learned - What happens when the design changes?

- Preliminary to Final design
- Clear communication
- Updating the model
  - Grading
  - Pavement Markings
  - Signs & Lights
- Reprocessing the model
- Understanding the Software

Moving Forward - Benefits of Visualization

Shared understanding of the project, always a more complete picture

QUESTIONS?