

# VISUAL SIMULATION PROCESS CHART

## Step 1: Site Analysis and Data Acquisition

- Acquire project components data
  - e.g. proposed transmission line structure specifications and project design
- Visual Specialist selects Key Observation Points (KOP) for each simulation location
- Collect site data: GPS points - photographer location and existing elements such as power structures
- Document existing photographic conditions
  - e.g. time, date, focal length, direction, weather conditions



## Step 2: Construct 3-D Project Components

- Create 3-D structure models in AutoCad
- Geographically rectify 3-D models using a Digital Elevation Model (DEM) from USGS
- Use engineer's specification such as height, span, and specific location where needed for accurate placement
- Place route, photopoints, and other spatial data from GIS; access road plan incorporated
- Verify model accuracy by appropriate means
  - e.g. PacifiCorp engineering department



## Step 3: Construct 3-D Simulation Model

- Accurately align 3-D models in photograph using terrain and existing elements noted in the field
- Import from CAD the virtual camera using GPS/located photopoint
- Using existing measurements, simulate perspective
  - e.g. existing H-frame structure foundation locations and height
- Apply realistic material textures and lighting
  - e.g. set time and date to simulate proper lighting and shadows
- Verify by appropriate means scale, location, and accuracy
  - e.g. PacifiCorp engineering department



## STEP 4: Final Rendering

- Finalize simulation in photo editing program including color balancing and simulation layout
- Apply reclamation/revegetation mitigation to access road plan - depicted as 3-5 years from completion of construction
- Foreground simulation to appear realistic in photograph
- Verify final draft simulation by appropriate means
  - e.g. PacifiCorp engineering department
- Final simulation

