• The general physical characteristics of a bridge establish the fundamental visual properties of the structure form and its visual essence.

• The major structural elements of a bridge are its piers, girders and abutments, which serve as major architectural features as well as primary load carrying members.
Principal Aesthetic Design Factors

- Superstructure type
- Pier placement
- Abutment placement
- Retaining walls

Lancaster Pedestrian Bridge, Forth Worth, Texas
Woodrow Wilson Bridge, Washington D.C.
Puente Centenario, Panama Canal, Panama
• Railing and barrier details
• Surface color and textures
• Architectural embellishments
• Roadway lighting and signage
• Aesthetic lighting

Lancaster Pedestrian Bridge
Railing Detail

Woodrow Wilson Bridge
Aesthetic Lighting

Puente Centenario
Barrier and Tower Details
• Consideration and balancing of ecological, economical, social-cultural environments

• Preservation and optimization of resources for use by future generations

• **Sustainable Goals**
  Careful design of footings and pier locations
  Lane adaptability and HOV lanes
  Bike and pedestrian lanes
  Storm water management and river bank restoration
  Green power and onsite power generation
  Lifecycle assessments
  Material reduction and use of regional and recycled materials
  Construction activity pollution prevention
An approach to bridge design:

- **Looking at a bridge**
  Long range views

- **Being on a bridge**
  Motorists, cyclists and pedestrians traveling across the bridge

- **Being near a bridge**
  Bridge underside
  Boaters, cyclists and pedestrians nearby views
  Social interactions and connections
Case Study - 1
Willamette River Transit Bridge  WRBAC Meeting #1

Leonard P. Zakim Bridge - Boston, Massachusetts
Leonard P. Zakim Bridge - Boston, Massachusetts
Willamette River Transit Bridge  WRBAC Meeting #1

Leonard P. Zakim Bridge - Boston, Massachusetts
Leonard P. Zakim Bridge - Boston, Massachusetts
Willamette River Transit Bridge  WRBAC Meeting #1

Leonard P. Zakim Bridge - Boston, Massachusetts
Case Study - 2

Willamette River Transit Bridge

Liberty Bridge – Greenville, South Carolina

WRBAC Meeting #1
Liberty Bridge – Greenville, South Carolina
Liberty Bridge – Greenville, South Carolina
Liberty Bridge – Greenville, South Carolina
Liberty Bridge – Greenville, South Carolina
Liberty Bridge – Greenville, South Carolina
Case Study - 3

Willamette River Transit Bridge  WRBAC Meeting #1

East End Bridge – Louisville, Kentucky
East End Bridge – Louisville, Kentucky

Existing Site Conditions, circa 2006
Willamette River Transit Bridge  WRBAC Meeting #1

East End Bridge – Louisville, Kentucky

Existing Ohio River Bridges, circa 2006

Source: SKYLINES, American cities yesterday and today
Willamette River Transit Bridge  WRBAC Meeting #1

East End Bridge – Louisville, Kentucky
Willamette River Transit Bridge  WRBAC Meeting #1

East End Bridge – Louisville, Kentucky

Cable Stayed Bridge type variation in appearance

Selected Bridge Type
East End Bridge – Louisville, Kentucky
Willamette River Transit Bridge  WRBAC Meeting #1

East End Bridge – Louisville, Kentucky
Willamette River Transit Bridge  WRBAC Meeting #1

East End Bridge – Louisville, Kentucky
East End Bridge – Louisville, Kentucky
East End Bridge – Louisville, Kentucky
Willamette River Transit Bridge  WRBAC Meeting #1

East End Bridge – Louisville, Kentucky
Thank you